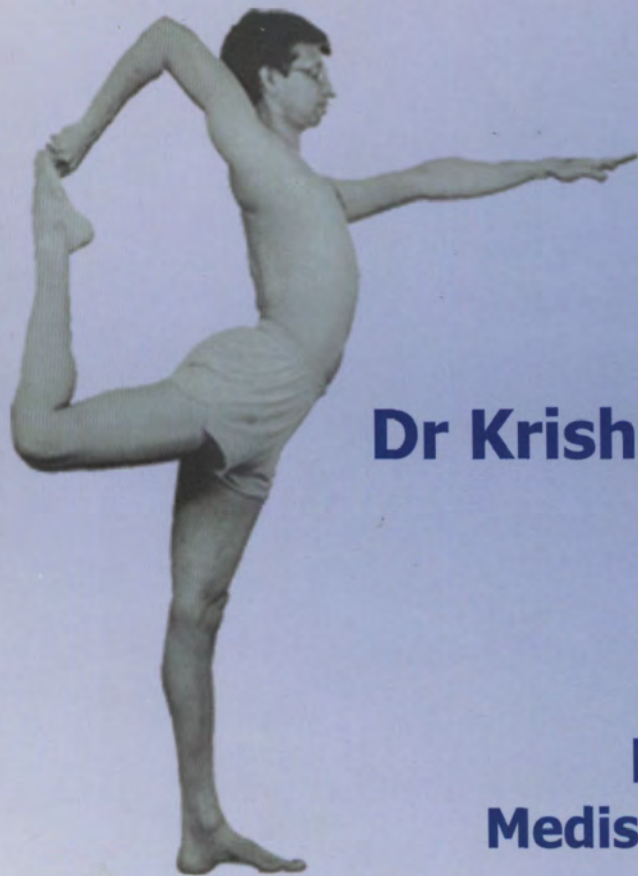


Yoga & Medical Science:



Dr Krishna Raman

with

**Dr S Suresh
Mediscan Systems**

Ultrasound Imaging during Yoga practice!

**F
A
Q**



Introduction
BKS Iyengar

Foreword
Dr KV Thiruvengadam

YOGA & MEDICAL SCIENCE FAQ

Dr Krishna Raman

with

Dr S Suresh

Mediscan Systems

In association with

EastWest Books (Madras) Pvt. Ltd.

2003

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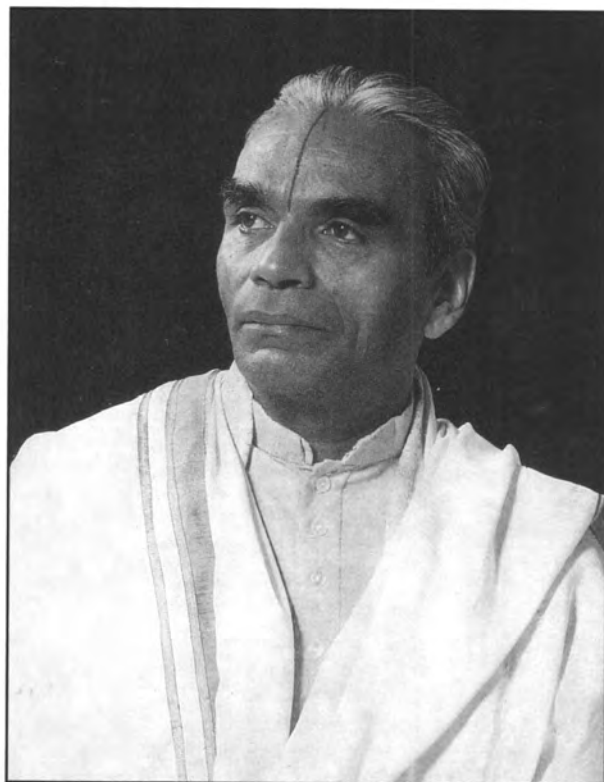
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Dedication

*With humble pranams, I offer this work at the
Lotus Feet of Bhagawan Sri Sathya Sai Baba*



Sage Patanjali, the Father of Yoga



*My profound gratitude to my Guru,
Sri BKS Iyengar to whom
I owe all my knowledge of Yoga*

Contents

Foreword	vi
Introduction	vii
Preface	x
Asana, Pranayama & Yoga Philosophy	3
Health and Yoga	19
Issues on Yoga and Medicine	39
Ultrasound studies on Yoga	141
<i>The Gall Bladder in Asanas</i>	<i>143-145</i>
<i>The renal artery in Parivrtta Janu Sirsasana</i>	<i>145-146</i>
<i>The popliteal artery in standing poses</i>	<i>148-160</i>
<i>The central retinal artery in inverted poses</i>	<i>162</i>
<i>The ophthalmic artery in inverted poses</i>	<i>163</i>
<i>The ophthalmic vein in inverted poses</i>	<i>164</i>
<i>The carotid arteries in inverted poses</i>	<i>165-167</i>
<i>The cerebral arteries in inverted poses</i>	<i>168-170</i>
<i>The ascending aorta in back bends</i>	<i>171-172</i>

Foreword

Dr Krishna Raman is a distinguished exponent of the science of Yoga. Being himself a brilliant product of training in Allopathic Medicine, he has brought out a very useful book on Yoga and Medical Science.

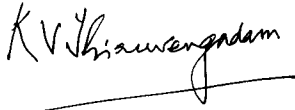
This book is a follow up of his earlier book on the practice of Yoga, physiological basis of different Asanas and the fundamentals of human anatomy and physiology in relation to yogic practice. Study of the earlier book (“A Matter of Health”) will enable the reader to appreciate the material presented in this book.

This book is a comprehensive treatise- presented in the form of questions & answers, highlighting the role of Yoga in promoting positive health.

Of great value is the presentation of the influence of different Asanas on the structure and functioning of different bodily organs, blood flow through different regional arteries, veins etc.

The stamp of scientific proof of the benefit of yoga on individual organs – e.g. heart, lungs, gallbladder, liver etc. and on the blood flow to the brain etc. has been painstakingly provided with ultrasound studies. The recording of the results of these studies should satisfy any discerning critic of the value of yogic practice.

Dr Krishna Raman has done great service in bringing to the attention of those concerned with Medical Education and Health Care and to the non-medical public the rich storehouse of health preserving and promoting science of Yoga, which also has a spiritual component in it.



6/10/03

Introduction

Dr Krishna Raman is a student of mine since a long time, whose book “Yoga and Medical science” is of great worth not only for lovers of Yoga and for those who live in Yoga but also for scientists, research students and the Medical Fraternity.

His study on recording the Ultrasound changes of various Asanas is a revelation to the scientific world. Dr Krishna Raman has done such a yeoman service in presenting for the first time, the art and science of Yoga by recording what happens exactly, during the process of performance of Asanas whereas the results recorded so far have been pre and post practice.

Yoga as a science prescribes and describes the sequences as well as the methodology and right techniques to perform them to derive maximum health benefit and minimizing or totally eradicating the diseases that engulf man and saps his energy. Healing comes under art, Yoga as a healing art helps the therapists what to adopt and how to adapt as and when required; why sequential adjustments are necessary for quick relief and how they have to be adapted for adjustment.

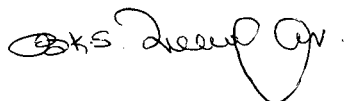
This, when, why, where and how is essential, as health is a dynamic forward flow of life's energy. The method is to increase the power of defensive energy that brings physical afflictions and mental sorrow. Whether the afflictions are physical or mental they are controlled, stabilized and then eradicated by yogic discipline. Yoga is such that it has the power to cure; and where cure is not possible, it helps to endure the affliction in calmness.

The physical actions of Yoga bring physiological changes. Dr Krishna Raman has presented in this book proofs of the same using modern equipment, showing the effect on Yoga as a better cleanser to life and living.

I am sure that his study and scientific presentations is an eye-opener for those who like to research further with this foundation as a base.

I wish that this research work on Yoga receives the credit that it deserves and I am proud of his scientific experiments on this ancient science of body and mind in modern terms.

I hope that Dr Krishna Raman does not remain content with this presentation but goes ahead in exploring the hidden values of Yoga.



14/9/2003
Pune, India.

Dr KV Thiruvengadam



Prof KV Thiruvengadam has had a distinguished academic record.. He was adjudged 'the best outgoing student of the University of Madras in the Faculty of Medicine' in 1950 with the Rajah of Panagal Gold Medal and was awarded the 'Government Gold Medal for the best outgoing of the student of the Stanley Medical College'. He obtained his M.D. Degree in 1955 from the same University.

Even after retirement in 1984, he has been teaching Postgraduates in Medicine in the Southern Railway Hospital and other institutions to date. He has undergone training in Chest Diseases under the Colombo Plan in Brompton Hospital, London and MRC

Unit at Cardiff 1958-59. He has been recognized as a distinguished medical teacher by The Medical Council of India with the 'Dr BC Roy award for eminent medical teacher'. He has been regent for International College of Chest Physicians for India and has been recognized with 'distinguished service awards' by the Sri Ramachandra Medical College-Deemed university, in collaboration with the Harvard university, and by The Diabetic Association of India. The National Board of Examination has honoured him for his services, as a medical teacher in year 2000. The Indian Chest Society has given him the 'Distinguished Chest Physician' award.

He has been on the Scientific Advisory Committee of ICMR, Indian Pharmacopoeia Committee, Board of Studies of The Dr MGR Medical University, SRMC Deemed University etc. As chief of the Medicinal Chemistry Research unit of the Madras Medical College, he and his colleagues have conducted studies on Indigenous medicines, especially Ayurvedic preparations. He has received the Danwanthri award by The International Ayurvedic Congress, 2000. He has been Chairman of a session on Antibiotics at Geneva in 1970 under the auspices of The International College of Chest Physicians. Apart from being an outstanding teacher he has been an eminent physician, in consultation practice in Internal Medicine, Chest diseases, Asthma and Allergy for nearly 45 years.

Dr Thiruvengadam has also made significant contributions in the study of the role traditional medicines for the treatment of several common disorders. As the Head of the Traditional Medicine Unit at the Madras Medical College and Government General Hospital, he was responsible for initiating several studies to delineate the efficacy and safety of *Tylophora indica* and *Ocimum basilicum* in allergic lung and skin diseases. He was a fellow of the Academy of Medical Sciences in 1972. He is a founder member of the Indian College of Allergy and Applied Immunology. He was elected Fellow of the International College of Chest Physicians in 1960, was the Regent of the college in India and a Fellow of the Royal College of Physicians, Edinburgh in 1982. He was the Chairman of the Committee on Antibiotics of the American College of Chest Physicians at Switzerland in 1970.

The MGR Medical University has awarded the Honorary Doctorate of Science to him in 1996. He has been honorary physician to the President of India. The Government of India has recognized his services in the field of medicine with Padma Shri in 1981.

Dr S Suresh

Dr S Suresh, a pioneering doctor in the field of Ultrasonology, graduated from Chengalpattu Medical College (Tamilnadu, India) in 1976. He then continued to work in General and Surgical practice from 1976 -1982. He was honorary Assistant in Surgery from 1978-82 at the Voluntary Health Services Hospital in Chennai. He went into non-treaded grounds when he trained in Ultrasound in 1982 with Dr Hemant L Shah of H N Hospital at Bombay. Ultrasound was in the nascent stages those days. He set up Mediscan Systems Diagnostic Ultrasound Training and Research Centre at Chennai on August 15, 1982. He then underwent advanced training in Abdomen, Pelvis and Doppler Ultrasound at Thomas Jefferson University, Philadelphia USA and Johns Hopkins University, Baltimore, USA, in 1984. He set up the first Prenatal Diagnosis and Fetal Therapy Centre in Tamilnadu in 1987, which is now a referral Centre for India and neighboring Countries including Sri Lanka, Singapore, Malaysia and Middle East. He founded the Fetal Care Research Foundation in 1993. He then obtained certification as a Registered Diagnostic Medical Sonographer (RDMS) by the American Registry of Diagnostic Medical Sonographers in 1994.



He is secretary, Indian Federation of Ultrasound in Medicine and Biology (IFUMB) and President, Acoustical Society of America, Madras Regional Chapter. He was invited to speak and chair sessions in the World Congress of Ultrasound, Copenhagen in 1994. He was awarded the honorary membership of the Indian Radiological & Imaging Association (IRIA) and delivered 14 orations in various National Conferences including the KM RAI ORATION in the IRIA Meeting in Bangalore in 1995. He was also a visiting Professor at the Jawaharlal Institute for Post Graduate Medical Education and Research, Department of Feto-maternal Medicine, Pondicherry in 1997.

He is editor-in-chief, Indian Journal of Medical Ultrasound and member of the Technical subcommittee, Central Supervisory Board, Government of India, Ministry of Health and Family Welfare, New Delhi. He has published several papers and articles in national and international journals and authored several chapters in textbooks. He also published several multi-media teaching CD-ROMs in Ultrasound. He had provided complimentary Ultrasound service to Army Personnel at Chennai Military Hospital during the IPKF operations and on a continuing basis provides free ultrasound facility for the poor and needy from all Government and Corporation Hospitals in Chennai since the last 20 years.

He was organizing secretary for the CUSP conferences (Clinical Ultrasonography in Practice) from 1989-2002. He has delivered nearly 400 lectures in India, Malaysia, Sri Lanka, the Middle East and U.K. He set up the first Ultrasound-training centre in India with structured training modules. A unique achievement is the setting up of the Births Defects Registry of India in 2001 and a Fetal Medicine Fellowship Study Program for candidates from India and Overseas. He was also responsible for setting up a similar registry in other parts of Tamilnadu, India. He has been associated with information technology and trained himself in multimedia in 1997. His interests include photography and he is the current president of the Pelican Nature Photo Club. He is also current president of Madras Amateur Radio Society.

Preface

I offer my humble salutations at the Lotus Feet of Bhagawan Sri Sathya Sai Baba. His Grace has made this book possible.

Health is a precious commodity that can be earned only by the Grace of God, but we need to make an effort. Our contribution includes right speech, behaviour, and living in harmony with nature. In order to achieve health, we must understand ourselves. This begins with giving respect to our body and mind in a way that promotes healthy energy in our cells. It is not important that we live long but living with a healthy, agile mind and body is meaningful. We must remember that Divine Grace is important for all that happens in our lives.

Sri BKS Iyengar needs no introduction. I offer my pranams to my Guru, who relentlessly pushes me to the frontiers of Yoga research. His method of teaching Yoga is unparalleled.

I am indeed indebted to my professor in Medicine, Dr KV Thiruvengadam, who readily agreed to provide a foreword to this book. He taught me to analyze the subject of Internal Medicine with humility and an unbiased approach. He constantly encouraged me to pursue any medical problem in a methodical manner to the very end until the solution became apparent. His knowledge of teaching Internal Medicine is unrivaled.

This book is a compilation of questions from Yoga practitioners and people from different occupations both in India and abroad. Questions have been edited to ensure that they conform to the accepted use of the English language; in all other aspects they retain their original form. Every effort had been made to keep the identity of the questioners anonymous. Any resemblance to specific persons is entirely coincidental.

In this book ***Yoga and Medical Science***, I have answered in a concise manner, many questions to clarify doubts relating to the subject of Yoga and its practice. The subject is rife with misperceptions confusing the average Yoga practitioner. This book demystifies the practice of Yoga and explains in lucid terms what happens inside the body when a particular Asana is performed.

Yoga can be a powerful tool in the arsenal of Preventative Medicine if cleared of its cobwebs of time related myths, shown that it is simple to learn and perform and most of all, if its physiological effects can be demonstrated scientifically. Often, physicians do not understand Yoga and Yoga teachers do not understand medicine. An exception is the Master BKS Iyengar who has an uncanny knack of understanding the human body. As a doctor, I continue to be amazed even today at his insight into body kinetics and treating patients with medical disorders using Yoga.

If anyone faces problems relating to Yoga exercises, the medical advice often given is to stop Yoga practice. This may, on occasion be justified, but if the physician has also ***practised*** Yoga, constructive advice may be forthcoming.

While there are many Yoga schools each laying claim to correct techniques and trying to integrate their approach into the mainstream, it is important to note that ultimately, it is not the school of Yoga that matters but ***what happens inside the human body while performing Asanas***.

Over 16 years of clinical experience, I have become familiar with the techniques of many Yoga schools

and have found that *medically*, (I have no personal interests or gratification with any method) the “BKS Iyengar” methods are highly precise and more appropriate and effective for therapeutic use. For example, the “Iyengar system” can be used to help a patient who has suffered cardiac failure practise Headstand with props (after a certain period of recovery). Such methodologies are not available with other schools of Yoga.

The human body is a precise machine that can tolerate only a certain method of Asana practice. In this book, I have included many ultrasonographic pictures to highlight visually what happens inside the body during Yoga practice. The scans have helped us to realize that only specific Yoga techniques are beneficial to the body.

My sincere thanks to Dr S Suresh of Mediscan Systems (Chennai, India), without whose help the scan would not have been possible. His keen interest in analyzing and documenting the effects of Yoga using Ultrasound was both fulfilling and energizing. Also to his team including Dr A Bharathi, Ms G Chandra and Dr R Madhavan who have contributed their expertise, time and resources to the sonological studies. To Dr P Srinivasan of Lister Laboratory for his timely help in blood chemistry studies on Yoga postures.

I would like to thank Ms Sabita Radhakrishna for her contribution to the section on Health and Yoga. My sincere appreciation to my student Ms Karen Mzabe who in spite of her busy schedule, painstakingly compiled questions and was instrumental in collecting many queries from different sources. Her dedication to the project was of immense help. Thanks to Ms. Noelle Perez - Christiaens for her collection of quotations of Sri BKS Iyengar in the book *Sparks of Divinity*.

Thanks are owed to Mr Raju Seshadrinathan of Nagaraj & Co, his team and in particular Mr B Subramanian for their wonderful co-operation in bringing out this book.

I would like to thank all my students who volunteered to be subjects for the Ultrasound scans without hesitation and with full commitment. Thanks goes to all the contributors both in India and abroad, who sent in questions that provided me the impetus to write the book.

A debt of gratitude to my mother and father, Ms Prabha Raman and GK Raman for their unstinting support, inspiration and encouragement they continue to provide me. It is truly a blessing and good fortune to have them as my parents.

Thanks to my sister and brother-in-law Dr Radhika Suresh and Dr NC Suresh, for their constant input and feedback with respect to the contents and help in designing the cover and my nephew Adithya Suresh, a doctor in training, for just being there.

To my son Sai Aditya who gave up countless weekends while he patiently waited for me to finish the book so that I could spend more time with him. My deepest appreciation goes to my wife, Radhika who helped me at every stage of the book.

I am eternally grateful to Bhagawan Sri Sathya Sai Baba for His blessings.

Dr Krishna Raman

November 2003

SECTION I

Yoga is the essence of life, it is not apart from it. Proper mind control is true Yoga. Any work done precisely is Yoga. The lifestyle of the ancients included all of the above. We have lost touch with our tradition. Yoga may be an Indian heritage but it belongs to the entire world and is beneficial to all. The most valuable part of this life science is the spiritual guideline elaborated by it. The spiritual values lay the foundation for the physical, moral, mental, emotional and physiological evolution of humankind.

Yoga philosophy- the eight limbs of Yoga

Q1

What role does attention play in spiritual transformation?

A1

Attention is the essence of spirituality! The flame of attention is one that transforms. It is unbiased observation of anything, be it your husband, wife or even a stone.

Bhagawan Sri Sathya Sai Baba says, "If you wear red glasses the world appears red, a plain glass gives pure vision". The right kind of perception inherently changes the thought process leading to the right action and eventually the right result irrespective of anything else. This is dharma, in action. We all have this faculty but we need to be aware of this and use it in our daily living. When we practice Asanas and Pranayama, we cultivate attention. The cells of the practitioner remain in that state for hours and habitual practice reinforces this. Nadi Shodhana Pranayama is valuable for this purpose. However, apart from Yoga, we must make a conscious effort to maintain attention at all times.

Temple going is not spirituality. Neither is worship, meditation, reading books, eating Prasad (sacred food), doing japa or Yoga Asanas. These are only actions, actions that make time sacred.

Bhagawan Sri Sathya Sai Baba

Q2

There are different disciplines within the practice of Yoga. Which is the most important for spiritual progress-ahimsa (non-violence), brahmacharya (physical and mental equanimity), or tapas (zeal)?

A2

Love is most important for progress. Do what one will, without this quality life is a barren land.

It does not matter if we do not practice Asanas. If we love one another, energy will flow and God takes care of our needs without our asking for it. With love, ahimsa and tapas flower. Bhagawan Sri Sathya Sai Baba says, "Start the day with love, fill the day with love, and end the day with love-this is the way to God".

Q3

What role does Grace play in spiritual development? Is not sincere effort enough to reach the goal?

A3

Grace is the only saving factor. Our efforts are necessary and this, combined with Grace, provides the energy and helps us achieve the goal.

Q4

None of the great teachers of the world-The Buddha, Sri Ramakrishna, Sri Vivekananda, Sri Aurobindo-insisted on Asana and Pranayama practice to attain divinity. Why is this so?

A4

If yama and niyama (moral precepts) are followed sincerely, especially Ishwara pranidhana (surrender to God), little else is needed. True surrender is a state of total faith in God that results in peace.

This does not mean that we need not practice Asanas. In order to keep the body as a fit instrument to serve God, Hatha Yoga is essential. However, we should offer the fruits of Yoga practice to God as it is He who looks after our lives. Without Divine Grace, we cannot approach the path of Yoga or self-realization. Individual effort should not cease, it is to be combined with patience. Sri Sai Baba of Shirdi (a great Indian saint) insisted on two qualities from devotees who came to him "Sraddha and Saburi" (faith and patience). Many of us lack this.

Following yama and niyama is, in medical terms, a method of stress relief. When we follow specific methods of living, health of body and mind result automatically. The outgoing mind is drawn inward. The organs of perception then lose contact with the body. Physiologically, this results in hibernation of the body and mind that keeps the person calm.

Q5

J Krishnamurti often said that no guru is necessary, does this mean we need not seek for teachers to help us along the spiritual path?

A5

He implied that the real teacher is within. Ramana Maharishi (a great Indian Sage) had a similar doctrine-the real Sadguru (guide) is within. God is the indweller of all and the inner teacher. We have to learn by ourselves, someone can hold a mirror, but we have to do the seeing. The horse can be taken to the water; it has to drink. God can change the very manner of existence but often He does not do it, as we will not mentally evolve and become mature. Hence, He allows us to learn from situations, but *He is with us at all times*.

Q6

What does surrender to God really mean? Is it not being lazy and avoidance of facing life's problems?

A6

Surrender means a state of quietness-a serene happy frame of mind that accepts *without resignation* all that happens as Prasad (a blessing). This state of equanimity is seldom disturbed by what happens and happiness always exists. This is not laziness. On the contrary, it requires great clarity of mind to be in this state. Efforts carry on without change. Surrendering is the best we can do for ourselves-recall the quote "Thy will be done". Many do not understand this and feel that they achieve

everything in life by themselves. Only when trouble or a calamity strikes us, we start questioning life. Everything changes subsequently.

Q7

If we are instruments of a Higher Power, how do we know when it is the Higher power acting and not our own ego?

A7

This requires clarity of thought that will arise only when we genuinely feel that we are an instrument of a Higher Power-until then everything is theory. There are times when we do not know if a particular decision is correct or not and it disturbs us. If we cannot decide, carry out the task by surrendering to God stating to Him that if it is right let it happen and if not, let it not succeed. Sage Patanjali has said that ego is one of the obstacles that prevent perception. When we eliminate ego, the feeling that we are an instrument of a Higher Power will arise. With the purging of ego, we will understand that we are instruments of the Higher Power.

Q8

Why is it so important to destroy the ego? Do we not need it to survive?

A8

We do. However, here is one perspective as an example. If one is egotistic, learning is difficult. If I assume that I already know, can I learn? The sense of the "I" at *inappropriate times* is to be removed. This does not mean that one is a doormat. At appropriate times, such "egoless" persons will insist upon the right action even though it may not appear to be in concurrence with that of others.

Q9

What is the difference between the terms discrimination, discernment and judgment as used in Yoga?

A9

I think we must not be confused with terms. I would prefer a single phrase-analyze and learn. Discrimination helps us to make a distinction between the right and wrong. Discernment follows. The root meaning of this word means to perceive clearly. With repeated practice, we understand the technique and mechanisms of the Asanas and Pranayama without doubt.

Judgment means to “form an opinion about”. Opinions in Yoga are not good for us! Facts are more important. What actually happens to the body inside when we practice the Asanas may be different from what we think is happening. We must be able to accept the situation. Never form an opinion unless we are ready to give it up. The best course is to observe what actually happens.

Q10

Are our actions implemented by the mind, the cells of the body or consciousness?

A10

When death occurs and consciousness separates from matter, that matter is lifeless. The brain controls the body and energy animates the entire body, pulsating with life. Hence, it is the consciousness that activates matter. Once matter is activated, the cells in our body give a feedback to the intelligence regarding the state of existence. Asanas and Pranayama help us to listen to the intelligence of the cells. Refinement of body and mind results by such practices. Asanas and Pranayama are the tools to maintain the health of the body so that the consciousness can turn towards God.

Q11

Why is posture considered important during meditation?

A11

Posture is important for any activity. During meditation, it is important to sit erect to allow

the blood to reach the brain easily. This prevents dullness in the mind, back and neck pain over prolonged periods of sitting.

Q12

While practicing meditation or Pranayama, is the position and “posture” (mudras) of the hands important?

A12

It is said that when the hands assume different positions, we accrue certain benefits. However, this is not essential. If the mind is silent and pure (we have to commit ourselves to this) **mudras are unnecessary**. These are games for children to play with, adult children! Apart from this, the need for the spine to be kept erect has already been mentioned.

Many of the marvellous yogis are like any one of us if we observe their behaviour on a personal level. Evolution is important, not gestures.

Q13

In learning about Yoga as a tool in spiritual transformation, what would be the most important books for a student to read?

A13

The message is the same in all books with the packaging being different. I would suggest that each one has to find out what suits their mentality. To begin with, ***Light on the Yoga Sutras of Patanjali*** (Iyengar, BKS, Harper Collins, 1993) and ***The Vision, and the Way of Vasistha***-a treatise on psycho-physio-spiritual issues (Indian Heritage Trust, 1993, Chennai, India) may be helpful.

Q14

What is “Pratyahara”?

A14

This is introversion of the senses. It happens to us in every day living in order to perform tasks effectively. When we observe a lovely sunset

there is total silence until we “return” to the present state. At such moments, the senses have become silent in order to help us enjoy the sun. Spontaneous withdrawal is more important than one that is forced.

Q15

Sri Ramana Maharishi said, “Hatha Yoga is good for purification of the mind”. What did he mean by this?

A15

It is a *discipline* to start with-but this is only a starting point. Right actions alone purify the consciousness and this in turns purifies the body. Practice and renunciation are equally necessary. Renunciation does not mean withdrawing from the world. Bhagawan Sri Sathya Sai Baba says, “Head in the forest, hands in society”. In order to remain in such a state, constant vigil is needed. The path of the Hatha yogi is tough. The aim is to remove defects in the matter (the body), in order that the mind can then seek higher realms of existence. This means that a steady pattern of living is necessary to facilitate daily Yoga (Asana) practice. These days, people rush to learn meditation without prior preparation of the body and mind to face such disciplines and this is not conducive to health.

Q16

What are the effects of Asanas on negative emotions like anger, hatred, etc.?

A16

Let us be clear on this. Attitudes have little to do with Asana practice. One can master the most difficult pose and still leave much to be attained with respect to social and interpersonal behaviour. There are those who never practice Yoga yet they are better people than the most devoted Yoga student.

It is important to understand that Yoga is not just Asana practice. We must make efforts to improve ourselves irrespective of Yoga practice. *This*

effort is meditation. The root meaning of the word meditation is to ponder-not sitting in a corner and gazing at a candle or focus on abstract emptiness as an end in itself.

We must reflect and rectify our mistakes. If anyone feels that Yoga has made a change in their lives, they have just become more aware of themselves. This awareness does not require Asana practice. An introspective quality of mind is required to achieve this.

We do have telling examples of sages like Viswamitra and Parasurama who had phenomenal temper. This does not mean to decry constructive anger that does not damage oneself. As long as anger does not retain a residue of the emotion inside, it does not harm us.

Yoga philosophy teaches us how not to carry this burden and build future karma. Pride is the main obstacle and if we overcome this, the mind becomes reflective. Meditation in Asana sets in and makes the practitioner realize the need to remain calm.

Q17

Do Asanas and breathing exercises play a role in spirituality?

A17

A spiritual person has equanimity under all circumstances. Is a person who does not practice Asanas less spiritual? Probably such people are better as their minds are not clouded by theories. For e.g. a villager in rural India is a better spiritual person as he has very few possessions and leads a simple life (psychologically). I know many who are “better people” without recourse to Yoga and spirituality. However, Asanas and Pranayama lay the foundation for a healthy body. Patanjali’s Yoga sutras guide the student from the basic moral commandments to the level of physiological health and then to psychological health and spiritual health. Most of the time, there is a dichotomy in Yoga practice. Personal evolution along with Asanas and Pranayama are

necessary. Mental restraint and personal dignity combined with Asana and Pranayama practice mean more than mere Asana practice.

Q18

What is the role of Asana and Pranayama in preventing, curing or managing diseases?

A18

According to the dictionary, there are several connotations to the word cure:

- 1) restore to health,
- 2) get rid of a disease,
- 3) preserve by salting.

A back ailment can be cured by habitual practice of Asanas and the body restored to health. However, in order to recurrence (as the body has a tendency to degenerate) “salting” is needed. ***Yoga is the salt that preserves our body.***

Is there any disease on earth that is totally curable? A patient who is cured of tuberculosis could be re-infected if the immunity dwindles. In this situation, we cannot say that even in the first instance cure was not provided. Weakening of the body's defence mechanisms caused the recurrence. Therefore, ***strengthening immunity by good diet, exercise and other factors*** assume importance.

To further explain, let us consider the effect of Yoga on back pain. After we achieve a very good level of flexibility, even if we do not practice Yoga, the ailment does not recur. However, other conditions like Vasomotor Rhinitis (a problem of persistent sneezing), non-specific fatigue, etc. require that Yoga be done on a habitual basis. We must be clear about the role of Yoga in our lives. Yoga can help develop an attitude that ***what cannot be cured has to be endured***. To endure, we primarily need God's Grace.

Q19

In terms of disease from a yogic point of view, would you say there are rajasic (aggressive), tamasic (inert) and even sattvic (pure) diseases? Could you give some examples?

A19

Diseases can be aggressive or slow. “Galloping” pneumonia is a rajasic ailment. It needs aggressive care or we can lose the patient. An example of a tamasic condition is excessive flatulence. This improves slowly and clinically we have time to try different medications and treatment options. Constipation is another tamasic condition. An example of a sattvic ailment is myopia (short-sightedness). We have to live with it but it does not disturb us. Current surgical methods available for this disorder do not tackle the root of the problem.

Q20

Can Yoga maintain health or do we need to include other forms of exercises like walking or Swimming?

A20

Asana and Pranayama are adequate to maintain health. The practitioner can combine different forms of exercises and this depends on the time available and the lifestyle of the individual. Yoga should be completed before any other kind of exercise. We must remember that in delving deep into one science, the other is relegated.

Q21

Can “true” yogis fall ill?

A21

Great yogis have fallen ill. The reason eludes us (not them). I would not debate on the cause but do remember what Lord Krishna has said in the ***Bhagawad Gita*** (the Hindu Holy Scripture)- “higher than the highest of yogis is he who surrenders to Me”. This is enough to make us understand that life has to be lived in an attitude of surrender. It is not a state of negativity. ***Psychologically***, such persons are not affected by the illness. This makes a major difference. According to Patanjali, if either abhyasa (practice) or vairagya (detachment from the fruits of action) are neglected, afflictions can result.

Illness is a part of karma, a key factor that only the Lord can cancel if we repent for our mistakes sincerely. This does not mean that God dishes out punishments. When we realize our mistakes and repent, God intervenes and helps us. Many Yoga practitioners are never aware of this. They feel that Yoga is the pinnacle of health. This is far from the truth. The Divine that looks after our health. We must offer our Yoga practices to the Lord.

Q22

Do Asana and Pranayama practice instill discipline in us?

A22

An innately disciplined person takes to Yoga. I know large number of persons who are innately disciplined without recourse to Yoga. If a person claims to have learnt discipline through Yoga, it is because an awakening has occurred. However, having taken to Yoga, yama and niyama provide the guidelines for a good life. It is up to the practitioner to follow it.

Q23

Why is being a vegetarian stressed so much for Asana and Pranayama practice? What is a proper diet for Yoga practitioners? Is there a relationship between the mind and food?

A23

There is no rule that we have to be a vegetarian to practice Asanas. Yoga practitioners can follow a “normal” daily diet so long as it is a healthy balanced meal. As we progress along the path of Yoga, we realize that killing is not ethical. Diet changes automatically.

I have never insisted on my patients or students changing their diet. However, medically, *it is advisable to have a vegetarian diet* for multi-factorial reasons. The diet for Yoga practitioners depends on multiple factors-the individual lifestyles, the geographical area, the work style etc. In general, a cool (not “cold”) and nourishing food pattern is encouraged-ghee, (clarified butter) buttermilk and yoghurt are included.

Asanas and Pranayama provide the automatic repulsive force to the body and mind, which rejects flesh-based diets, bringing in cellular quietness. Vegetarian food prepared in a simple manner does not irritate the system. The ancients have always stated, “We are what we eat”. Medicine is recognizing this fact and more. To give an example; research has shown that stress increases postprandial lipaemia¹. This is the surge of lipids in the body after a meal eaten under conditions of stress. Our ancients always stressed the need to eat in quietness-no research was necessary for them in this situation-intuitive faculties provided many guidelines which are being increasingly ratified today.

Products of stress include chemicals that harm our system as stress hormones are released which include Epinephrine, Nor-Epinephrine and Cortisol. If the mind is under stress, matter attains to that state i.e. it is ultimately transformed into the very products of stress. This includes a variety of physiological changes: hyperacidity, weakened immune system, blocked arteries, chaotic neuronal functioning, insomnia, irritable bowel function worsening of diabetes, elevated blood pressure, increased tendency to strokes etc.

Ultimately, matter (our body) suffers damage and collapses. If the mind is calm, wholesome and stable, matter remains stable. Hence, the ancients stressed the need for a good environment to influence the mind and body.

Modern man is continuously in a hurry. Hurry causes worry, which affects the physical health. The main causes of heart troubles are hurry, worry and curry (fatty foods). Sattvic (pure) food is not restricted to the food consumed by the mouth. It includes all the food that is consumed by the five sense organs namely the eyes, ears, nose, hands and mouth.

Bhagawan Sri Sathya Sai Baba

Q24

As students and teachers of Yoga, is it necessary for us to draw up our own ethical guidelines? Are not yama and niyama adequate to guide us?

A24

We do need to form our own guidelines based on where we live and with whom we interact apart from yama and niyama. Regardless of anyone around us, we need to be self-critical and rectify ourselves. We are not utilizing yama and niyama at all times. We need to be extremely vigilant in the path of Yoga.

Q25

How do Asana and Pranayama play a role in honesty?

A25

There are plenty of Yoga practitioners who are unscrupulous! They have not taken yama and niyama to heart before commencing Asana practice. Even if we imbibe one of the precepts, it will shower benefits on the practitioner.

Q26

Hatha Yoga is invaluable to help face life's problems. Please comment.

A26

A student of mine, a psychologist by training checked mental profiles of several Yoga teachers. Yoga had apparently made a major change in their ability to handle crises. I was unconvinced. She then interviewed them on a personal, deeper level and found again that many of them could not face crises. We are all human beings. Practicing Yoga postures gives confidence for health maintenance. Adopting "*yogic attitudes*" will help.

Q27

Does this mean that the mind is more important than the body?

A27

This does not mean that we can neglect Asana practice-a lopsided approach is not good. However, the first and foremost requirement is to cultivate the mind and learn to meet life. What is the point in living a long life and with no transformation? Even a short life filled with Divinity is more valuable.

Q28

With so much emphasis placed on the physical by Asana practice, is there not a danger of getting too wrapped up in the body and forgetting the true aim of Yoga?

A28

The aim of Yoga is "citta vrtti nirodaha"-restraining the fluctuations of consciousness to achieve a state of equanimity (Iyengar, op.cit., Samadhi pada I.2). Surrender is the easiest way and this is possible only by the Grace of God. The body needs looking after but we should not be obsessed with health of the body. Our personal evolution becomes retarded. Ashtanga Yoga (eight-fold path of Yoga) of Patanjali is geared towards this. With the practice of Asanas and Pranayama, the body and mind are made silent allowing the practitioner to settle easily into higher realms.

Q29

What is dynamism of the mind?

A29

Dynamism is mobility-the capacity to flow like a river without stagnating. A hyperactive mind can be chaotic and scattered and tires a person. Dynamic minds are quiet and turn active when necessary. Energy levels are greater in such persons.

Q30

What part does the mind play in the formation and manifestation of disease?

A30

Mind has an important role. For example, stress is known to weaken our immune system. We can gather energy forces if our mind is calm. A classic example is Asthma or Diabetes where stress makes such patients worse. Stress prevents insulin release in the diabetic, or, causes the bronchi to constrict rather than relax in an asthmatic. Energy controls matter and a process of reinforcement occurs which is health.

In the *Yoga Vasistha* (a Hindu treatise on Yoga philosophy and the mind and body), Vasistha, a great sage, tells Lord Rama (the king of Ayodhya and one of the ten incarnations of Lord Vishnu according to Hindu mythology) “Rama! What ever the mind is full of, the body along with that, and under the influence of that, attains to that nature as air within a fragrant substance attains to fragrance” (*The Vision and the Way of Vasistha*, Samvid, Indian Heritage Trust, 1993, Chennai, India, page 208, verse 708). For example, the body tissues of a smoker literally become carbon. Vasistha was not a scientist in the conventional sense yet has elucidated such concepts.

Q31

Is healing a purely physical process or does mind have a role to play?

A31

Positive thoughts (not merely psyching ourselves) help quick recuperation. In a healthy mind, the body feels the energy providing a sensation of alacrity and swiftness. Patanjali describes this as “Tivram” (intense, motivated). He says that those who are intense achieve the goal faster. The goal in consideration may also be recuperation from disease.

Q32

What does surrender have to do with healing?

A32

Surrender is the first and last step resulting in peace. Medically, cellular quietness is conducive to healing which then goes on at its pace. We are

in a timeless zone. God cares for everything without our asking for it. To be aware of this needs great composure. We must have faced problems in life. Such an exposure makes us look at life in a different way. Since surrender may not be possible for everyone, Patanjali has given Asanas and Pranayama so that along the yogic path Grace may be bestowed and awaken the practitioner who is consistent in yogic practices.

Q33

How important is chanting and kirtan (hymns) in spiritual transformation?

A33

Bhagawan Sri Sathya Sai Baba says that in the Kali Yuga (a specific era in Hindu mythology with decline in moral social and ethical values) chanting of God’s name will eventually transform us. He further clarifies that the real “kirtan” is the inner change and then it does not matter if you chant or not. The only step to realization is surrender. If this is not possible, many other aids have been prescribed.

Most of us “lip chant”. We are the same people—arrogant, envious, and violent. The priest who chants daily may be no closer to liberation than the rest of us. Swami Vivekananda has said that we are nearer to God by playing football rather than by the study of the Gita.

Q34

Can the use of mantras help in healing sickness in the body and mind?

A34

Mantras are specific sound vibrations that when uttered impinge on matter in the environment. Similar to the ultrasound vibrations that penetrate into our body tissues with possible specific effects, mantras are supposed to affect matter in its own manner. According to tradition, there are specific mantras for different ailments. For example, snakebite has a specific mantra and a scorpion bite a different one. The benefit lies in the correct pronunciation of the mantra. However, as a clinician I cannot comment on this.

Q35

How do we differentiate between a state of true meditation and concentration?

A35

Concentration is unifocal while meditation is multifocal awareness. It is not possible to know the true state, as the unknown (which is the transcendental) cannot be “known” to be achieved. This is a tough situation. The transcendental is beyond description and if you know it already, you are only reaching a state, which is from a recognition process and hence is a projection of thought that is self-created. The subtle is beyond thought and can only be experienced. *Intuitively*, one will feel the truth to be the actual but this cannot be known to be reached.

Q36

Should we meditate once or twice daily, and for how long?

A36

Meditation is a process of understanding our reactions and reflecting and uncovering the deeper layers of our being so the false falls away and purity remains. There is no achievement in this. With the removal of the dust, the mirror shines. The shine is inherent. Therefore, meditation is in reality a continuous process. People mistake this for concentration, sit quietly for long periods, and become empty in the mind. This is only a stagnant state. ***Meditation is the transformation of the person*** and if this has not happened, it is not meditation. Asanas and Pranayama help the practitioner to become silent (cellular quietness). Pranayama particularly helps quiet the senses. The effort should not stop here. A state of purity has to be attained.

Q37

What do you mean by purity?

A37

Bhagawan Sri Sathya Sai Baba reminds us often that purity is Trikarana Shuddhi (three fold purity)-integration of thought, word and deed.

This is most simple and direct for us to imbibe. When the mind is pure, the body becomes so or is consequently purified with Yoga practice and health follows. However, often we become our own lawyer and justify our actions.

Q38

How do we quiet the mind?

A38

There is no method. Have you not noticed that we are quiet when needed? This is an integral faculty. If you are not able to focus, this means that your mind is pre-occupied with other issues. Prioritization of thought is necessary. Asanas and Pranayama work by inducing calmness but unless we do sadhana (spiritual endeavour), quietness does not result. This is probably why the first verse of Patanjali is not about Asanas but mental code of conduct, which is always mercurial.

Q39

How can we understand the mercurial mind?

A39

The nature of the mind is to change constantly. Is the mind apart from “us”? We are the mind! If we understand the origin of thoughts, we can understand the mind. Pranayama is an aid to this situation by silencing the superficial mind. The deeper layers are then revealed to the practitioner in the depths of silence. Meditation is the only tool to help unravel the mind.

Q40

What is the inter-relationship between control of the mind and control of the breath?

A40

There is a chemical relationship. When we inhale deeply, the vagus nerve (an important cranial nerve sub serving dampening of body activity) is stimulated, sympathetic stress reduces and the pulse rate and blood pressure stabilize. The mind feels calm. This does not mean that to feel calm

everyone has to practice Pranayama. We may recall Kipling's poem "If".

If we can be unruffled at most times, then by using the breath, we ensure physiological health and the practitioner automatically reaches higher levels without relying on breath as a tool.

Q41

What do you consider the single most important cause for negligible progress in meditation and how can we overcome this?

A41

Lack of surrender is the reason. Quietness results if this quality exists. One does not become quiet in order to achieve something else, as this is noise in the mind again. One becomes quiet-period. What happens next is to be experienced.

A polluted place promotes polluted thoughts; a solitary place promotes pure thoughts.

Bhagawan Sri Sathya Sai Baba

Q42

Sometimes the mind is so agitated or preoccupied with worries or some unpleasant or disturbing event that we find it hard to meditate. We cannot seem to touch calmness and retreat from whatever seems pressing. What should we do?

A42

As mentioned above, meditation is to *be* with a problem, accept it (not resignation), and delve into it. The solution will then be forthcoming. We try to solve the problem from an egotistic viewpoint. Humility brings an action on the problem that is quite different. What we need to keep in front of our mind is "Thy will be done". This is the path of peace.

Q43

Can we nullify karma?

A43

God alone can cancel karma. True repentance brings such Grace flooding forth from Him, which cannot be under emphasized. We need to

make sure that our heart is filled with simplicity. ***To get to practice Yoga is an act of Grace, which may nullify many diseases.***

Q44

You often mention that medical knowledge of the body is necessary to treat patients when using Yoga as a main tool. Then how has Sri BKS Iyengar has refined this subject to such a level though he is not a doctor?

A44

Sri Iyengar is an exceptional genius. As a physician, I have ratified many clinical points that he often mentions. The scans (explaining the inner changes during Asana practice) at the end of the book ratify his concepts. I analyzed and confirmed (with ultrasound) using correct and incorrect Yoga techniques every minute change that was mentioned by Sri Iyengar years ago. One cannot put him in the dock here, as he is a unique being in this universe. He has experimented on himself before treating patients. Not many have the courage to do so. The props are his innovation and this has revolutionized Yoga therapy.

Q45

Very often Yoga teachers assume that by attending classes on anatomy and physiology they understand the body well. Is this attitude correct?

A45

I beg to differ. If this were so easy, we do not need to study for five years in medical school. We must dissect the body and "hands on" experience is necessary to understand the body. Studying the textbooks is dead knowledge. To give an example: listening to lectures on law and trying to handle real life situations is preposterous. The *only* exception is Sri Iyengar who is highly intuitive and accurate.

Q46

What does renunciation imply for those with families and jobs, leading a "normal" life in the real world?

A46

True renunciation is surrender and offering the fruits of work to God. It does not matter whether we are single or married with a family or involved in other duties. In fact, doing our duty in whatever role that we are given without seeking the reward is renunciation. We can find renunciation in anything. Ultimately, this quality permeates all that we do. The correct attitude is to

- 1) ask the Divine force to be with us when we wake up in the morning,
- 2) pray for guidance in all that we do (as we do not know if our decisions are always right),
- 3) at the end of the day, surrender to the Divine force.

This way we carry no residue of each day and each morrow is fresh, new. *A true Yoga practitioner tries to develop an attitude of humility.*

Q47

How can persons with a hectic, productive life style find time to practice Yoga?

A47

It is just that we have not prioritized health. As a student (medical college days) I would read for hours on end and my break would be to practice Yoga in the evening before dinner. I would retire early, wake up early, and continue studying. It is just that we need to *organize* our daily lives with the right importance given to different areas of living.

People with hectic lifestyles will face a rise in health care costs if they neglect health. A survey showed that many women in the United Kingdom cited lack of time for exercise and some had no motivation to exercise². Subsequent regret will be in vain. Optimum health will result in maximum output. Eventually everyone will have to include exercise in his or her daily schedule. There is no excuse or escape.

If we do not mind swallowing pills all the time, the question does not arise. Only those who have tasted the sensitivity of health through Yoga will realize the value of healthy living. To ensure this, parents will have to set an example. The child will automatically *breathe* the life style of the parents. Often many parents neglect their health. They also fail to guide children about healthy diet patterns. An article in the British Medical Journal showed that central waist circumference in girls in the United Kingdom has increased over the last 10-20 years, which is not healthy in terms of future morbidity and mortality³. This could be prevented if children had proper guidance in childhood.

Q48

What about a working mother who plays multiple roles?

A48

We need to ask a basic question to ourselves. What are we looking for in life? What do we want to do with ourselves? If we do not ask this early enough, life will make us ask this at some point in time. There are women whose earnings are necessary to supplement the family income. Life may not be a bed of roses.

Even so, if she follows the yogic guidelines, at some point in life, she will take to Asana practice. We should make constant efforts in this direction. When we try to do the correct thing in life, other forces will help. This has to be experienced.

Q49

How can the geriatric ensure a healthy lifestyle for them if they have never had a disciplined schedule of incorporating exercise into their daily life?

A49

Firstly, healthy living is not a rigid routine. If you are tired on a particular day, forcing yourself to exercise is not intelligence. At the same time, we must be conscious of many factors, which

influence us in daily life that prevent us from maintaining a disciplined life. It may be more difficult for, over years, we get used to a routine. However, as I have repeatedly mentioned, we must make a beginning somewhere.

The body may be stiffer due to aging and the mind inelastic due to the presence of accumulated mental residues. We can get over this if we learn to live like a willow tree that bends rather than an oak, which may get broken with strong winds.

The props available with the “Iyengar system” give confidence to the geriatric and help them approach Yoga in a simplified manner. This will boost their self-image and definitely encourage healthy attitudes. They do not have to practice difficult postures. It is sufficient to start with elementary Asanas and Pranayama and as health improves, they can practice intensely.

Q50

Can Asana and Pranayama practice help children who throw temper tantrums?

A50

This reflects poor upbringing (apart from pubertal changes). Parents of such children often tend to behave in such a manner. The child needs a basic change in inter-personal behavior. The parents also need counselling. Yoga is a science of life, which can teach the child how to live. Again, the parents must persevere and provide the right inputs to the child. Asanas can help soothe the child and is certainly valuable. Bhagawan Sri Sathya Sai Baba often says “Love the children, but give them stern correction if they do anything wrong”.

Q51

Children are influenced by so many factors. The media is undoubtedly a major input (for the good or bad). Violence amongst children is on the rise. How do we combat this? What can Yoga do in this situation?

A51

Bhagawan Sri Sathya Sai Baba mentions that Sathya (truth), Dharma (righteousness), Shanti (peace) and Prema (love) are very important. Teach these values to children. This is not moral science but a necessity and today there is a crying need for such values. Many a time, adults fail to correct children when they commit a mistake. Bhagawan Sri Sathya Sai Baba often says, “Tell me your friends and I will tell you who you are”. Misguided children need correction, support and care.

Yoga is a wonderful starting point to add a value-based education to the existing system. However, it is often viewed as an atypical subject. In fact, make the child aware of the need to practice Asanas daily, introduce Yoga philosophy gradually and this will change matters markedly. Adults should change, then children will follow suit.

Q52

You often mention that sports persons will benefit by Yoga. There is hardly any time for them to practice Yoga. Competition is intense in the sports arena today. Burnouts are frequent. How can one make a change?

A52

Many athletes have realized the value of Yoga. Yet, better awareness is necessary. Lecture demonstrations should educate them of the value of Yoga. The coaches should be educated about *Yoga philosophy*, as this will prevent burnouts and help face failures. The athlete then learns to live in harmony with the inner self.

Q53

Do your patients follow the regimen you prescribe for them?

A53

In my fourteen years of clinical practice, I have found that the majority of patients (80%) tend to neglect their tailor made Yoga program after

they recover from the ailment. Once the condition relapses, they consult me again.

Many patients take to Yoga as another modality of treatment. They seldom realize the need for a life style change. Even the “intelligent” persons often fail to do so. ***Yoga is not just a mode of treatment. It is a preventive system and is a way of life.*** Sri BKS Iyengar often says, “When the body wants to do the Asana and you do not want to do, it is irreligious work”.

Our actions must be saturated with the fragrance of love and sacredness and must be good and pure. This is the true Yoga of Action as laid down in the *Gita*.

Bhagawan Sri Sathya Sai Baba

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SECTION II

Health is a God given priceless gift. We need to protect it all the time not to achieve worldly goals alone, but to serve the Divine. The protection starts from the gross body which is the envelope of the indwelling Divine. Hatha Yoga is the ancient science given both for the body and mind to evolve. Evolution will continue and life has to flow like a healthy river with Yoga being a main part of it.

Health and Yoga

Q1

How would you define the term “health”?

A1

Health is a state of perfect physio-psychological balance and harmony between body, mind and soul. The physiological balance is the inner state when all the systems function harmoniously so that the body is resistant to disease. The psychological balance is the harmony between the mind and body so that the mind remains strong at all times not affecting the body. However, health is not a static state; it is dynamic. Hence, we cannot limit health to a definition.

Health has three qualities to it-Sattva (purity), Rajas (aggressiveness) and Tamas (inertia). By the practice of Yoga (Yama, Niyama, Asana and Pranayama, Pratyahara, Dharana and Dhyana and Samadhi), the body and mind, get cleansed of the aggressive and inert qualities.

The secret of perfect health lies in keeping the mind always cheerful! Never worried, never hurried, and never borne down by any fear, thought or anxiety.

Bhagawan Sri Sathya Sai Baba

Health is not a facility; it is a perfect balance between the body, mind and soul. To obtain and enjoy health, we need to know the nerves.

BKS Iyengar

Q2

How do we “sense” health? Is it feeling wellness?

A2

It is not enough to sense “wellness” to feel healthy. You have to exercise to know if you are healthy. Then, every morning you will get up feeling light and vibrant in both body and mind.

At the end of your exercise program if you feel energetic, exhilarated and if that feeling persists for twenty-four hours, then you are healthy.

However, there is no permanence about health. You need to be vigilant, every second, every minute, and every day, throughout the year. You have to listen to your body in utter quietness and you will discover your state of health-good or bad. Your body will send out signals, which you have to learn to recognize, and deal with accordingly. Even the slightest sign of ill health needs to be addressed. Sharpen mental sensitivity as, only a receptive person can enjoy health.

Q3

With this extreme preoccupation of health and disease, is there a danger of becoming a hypochondriac?

A3

Such an awareness does not make one a hypochondriac, (on the contrary lack of proper awareness does). ***Do not look for disease; look for health!*** It is only awareness that will make you mature enough to judge how the symptoms need to be tackled. When you have the sense of well-being, a wonderful energy surges through your entire body and mind and you feel “on top of the world”. Absence of health is a state of dullness and lethargy.

For most people, health is a satellite, and all other occupations are the nucleus. However, ***health should be the focal point around which all other activities revolve.*** Health routines need to be implemented everyday without compromise, which in itself, is a good prescription for health. Without health, you cannot give your best in anything in life.

Patanjali, the father of Yoga and author of the immortal work the Yoga Sutras, in his very first verse spoke of the need for a proper foundation for a healthy life. The verse is “Atha Yoga

Anusasanam”-now, the discipline of Yoga is explained (Iyengar, op.cit., Samadhi Pada, I.1). Anusasanam also means code of conduct. Note that he did not commence his verses with the topic of liberation.

When disease occurs, nature takes its own time for healing. We have lost patience and self-confidence, as we do not lead an ethical life in the health arena. When self-confidence increases, healing is accelerated. Lack of self-confidence makes for a hypochondriac.

Q4

What are the specific methods to health? Can exercises be used for therapy and if so, why is it not afforded the importance it has in the West? Can exercises be beneficial for treatment of medical ailments?

A4

There is no “method” to health. According to Yoga, the three main pillars of health include mind, diet and exercise. Yoga classifies diseases as those arising due to self-abuse, those due to genetic influences, and those due to imbalance in the elements in our body. Care of these three pillars will result in health. We may not be able to counter the effects of genetic disorders fully but at least we can make an effort to maintain health.

Regarding the different kinds of exercises that are used as therapy, the benefit varies depending on the system used. For e.g. if Swimming is used as a therapy for back ailments, the benefit obtained will be marginal for some and good for others. Overall, none will get the benefit that Yoga can provide in such a situation.

Unless physicians are trained in the art of using exercise for therapy, they will feel reticent. At the most, patients are advised to walk. This is not so beneficial in comparison to other exercises. Conditioning is another aspect. Physicians tend to feel that it is Western Medicine that can help for many ailments. This of course is a short-sighted view and we need to educate ourselves on different issues.

Various exercises may be used as therapy. For instance, Swimming is beneficial for weak lungs and can improve the cardiorespiratory status. Weight Training is beneficial for controlling blood pressure even in an established hypertensive, with or without medication. Habitual work-outs in a gym can stave off cardiorespiratory disorders. Yoga ultimately towers above all this for specific reasons. I recommend that the reader refer to the book *A Matter of Health* to understand the salient differences between Yoga and other systems of exercise.

Currently research has gone far ahead in proving the benefits of habitual physical activity.

I have listed a large but by no means a comprehensive list of a suggestive pro-active role of habitual aerobic activity in prevention, occurrence and treatment of health ailments below:

- Could reduce the incidence of CA breast¹
- Reduces the incidence of colon cancer²
- May reduce the incidence of post menopausal uterine CA³
- May reduce the need for gall-stone surgery⁴
- Helps select heart failure patients⁵
- Benefits most pregnant women⁶
- Lowers BP, better insulin sensitivity, lowers clot formation and lipids⁷
- Reduces the incidence of chromosomally normal miscarriage⁸
- Prevents glucose intolerance⁹
- Prevents HT, and is very useful for Arthritis¹⁰
- Very beneficial for COPD¹¹ (chronic obstructive pulmonary disease)
- A corner stone for prevention of IHD¹² (ischemic heart disease)^a, exercise reduces platelet adhesiveness^b, and increases HDL^c
- For menopausal women¹³ exercise helps with the following:
 - Vasomotor symptoms (symptoms like hot flushes, sudden sweats etc.)^a
 - Bone loss^b

- The heart^c
- Uro-genital atrophy^d
- Weight gain^e
- Muscle weakness^f
- Exercise has fibrinolytic activity¹⁴ (facilitates the anti-clotting mechanism in the body)
- Considering the immune system exercise has potential strengthening effects:
 - Raised IG levels¹⁵
 - Raised NK cells, Cytotoxic cells, due to action of adrenaline¹⁶
 - Raised CD4 and CD8 counts indicate activated T cells¹⁷
 - Reduces the incidence of all forms of cancers¹⁸
 - Beneficial for HIV patients¹⁹
 - Exercise has antioxidant activity in muscles²⁰
- Exercise is beneficial for Parkinson's disease²¹
- Reduces the incidence of stroke²²
- Exercise can be done at any time of the day²³
- There is no age limit for exercise²⁴

The yogis of yore had mentioned age being no bar to exercising intuitively. There is a quotation in the *Hatha Yoga Pradipika*²⁵, (a classic Yoga text) that says that anyone can begin to practice Yoga so that, they become healthier to practice Yoga better. It is a reinforcing effect.

Q5

What kind of exercise regimen is ideal for health and how is it beneficial? Are exercise and diet inter-linked?

A5

Aerobic exercise benefits the various body systems²⁶. It regularizes blood pressure, prevents heart attacks and strokes, builds up the blood flow, preventing blockages and improving the cardiovascular system.

Exercise builds up the vital capacity of the lungs. The endocrine system is revitalized, as it optimizes and maintains the secretion of the glandular organs. It benefits the musculo-skeletal system strengthening the bones and muscles. It tones up the reproductive system. For further reference, the reader is advised to refer to *A Matter of Health*.

Exercise and diet complement each other, as both are building blocks of the body. Exercise breaks down the dietary carbohydrates, proteins and fats. It enhances the delivery of the in-drawn energy from the food into the cells, and is the factor that circulates the energy. Right diet is the input. ***Exercise is the utilization and maintenance expert.*** Exercise enhances postprandial utilization of lipids²⁷.

Exercise influences the output of energy. It is like the battery of a car-when you engage the self-ignition; it powers the engine that charges the battery again. The ignition in our body is the attempt of the Asana and the charge of the battery refers to the physiological property of the postures.

Exercise rightly done does tremendous good for the body else it reverses all positive changes mentioned. Different exercises cater to the various needs of people -Jogging, Aerobics, stretch exercises, Yoga, and Swimming to name a few.

Work-outs in a gym are ideal to burn calories and reduce fat. However to maintain health, a gym routine is not necessary if we practice Yoga. It is often said that walking is one of the ideal forms of exercise and easy for most people. It is beneficial only if you walk briskly at an even pace. Often it becomes a leisurely amble where your pace is altered ever so often when you meet acquaintances. I would say that a treadmill routine where you regulate your pace, and have an uninterrupted work-out is valuable (subject to medical conditions). Of course, you will miss seeing the sky and birds!

Swimming is beneficial as both sides of the body are symmetrically used. Jogging is a good

vigorous exercise, provided you are accustomed to it, and you know how to jog without hurting your back and knees and there are no specific medical contraindications. Yoga can help the runner prevent Jogging induced hazards. Ultimately, a consistent Yoga routine is advisable for certain specific reasons.

Yoga towers above all forms of exercise despite their relative merits. Yoga begins with a certain amount of energy substrate (the amount of energy at the start of exercise) and builds up the vigour of the body further, while other systems exhaust the baseline energy substrate and then energize the system. The latter is not a “healthy” method. This is not to mean that we should not run or swim. Those may be necessary to keep the body dynamic, but Yoga is a refined form of exercise that is superior. It has its own dynamic methods.

Our body is full of noise-not of the physical kind, but a cellular drone. Yoga quiets the body. Other systems of exercise irritate the cells and increase the noise adding to the wear and tear in the body. Yoga on the other hand provides immense calmness that helps the body recuperate from the rigor of daily living. Yoga is a conscious sleep to the cells while all other forms of exercise are “cellular noise”. The details are summarized below:

The Cardiovascular system

1. Cardiac nerves feel rested.
2. Heart rate is not “irritated” in yogic practice.
3. Cardiac nerves are consciously stimulated.
4. Asanas can massage the heart.
5. Blood pressure is regulated and even if it rises during practice, it is far lower than during aerobic exercises.
6. There are no adaptive changes in the cardiac muscles as in athletes.
7. There is conscious shunting of blood flow in Asana practice.
8. Quality of flow is soft, wafting or forceful as desired.
9. This force is unique, not a pounding and pulsating action.
10. Many cardiac ailments can be treated by Yoga-it is safer, direct in its approach and less irritative than other systems.
11. Backward bending Asanas are highly beneficial to improve coronary circulation and the cardiac pump.

Circulation

1. There is no change in orthostatic tolerance in Yoga.
2. Circulation occurs without strain and without exhaustion.
3. Circulation is along anatomical lines and by massage.
4. Flow patterns can be changed in any direction by changing Asana shape.
5. The velocity of flow can be changed voluntarily.
6. There are no adaptive changes in blood vessels.
7. Arteries and veins remain soft and elastic.
8. The body can be massaged in one area, while in another, fluid dynamics are undisturbed.

The Respiratory system

1. Breathlessness does not occur while practicing Yoga.
2. Asanas have a massaging action on the thoracic cage and lungs.
3. Elasticity of cells is maintained.
4. All parts of the lung are benefited by Asanas.
5. Yoga stabilizes sympathetic and parasympathetic nerves, ensuring optimum performance of airways.
6. There is greater intake of oxygen causing more storage and enhanced blood flow; hence, ventilation and perfusion are continually maintained.
7. Lung cells (alveoli) are not ‘flogged’.

8. Elasticity of ribs, intercostal muscles and diaphragm are maintained.
9. Backward bending Asanas are special, giving 'aerobic-like' effects.
10. Lungs become strong, less affected by vicissitudes of climate, altitude and infections.
3. Invigoration of the neural connections of the endocrine system is felt.
4. Inverted Asanas may have a special effect on pituitary, thyroid and parathyroid.
5. Backward bending Asanas may have direct effects on ovarian and pituitary functions simultaneously.

The Gastro-intestinal system

1. Massaging is a predominant action on the abdominal organs.
2. Depending on the Asana, effects on each organ vary at any single moment.
3. Rinsing, flushing, soaking, squeezing, drying of the cells are the various mechanisms of Asanas.
4. Digestive secretions can be increased or decreased as desired.
5. While working on abdominal organs, Asanas simultaneously work on the endocrine glands.
6. Effect on organs is easily corroborated by ultrasound.
6. Seated forward bends charge the adrenals and the mind.
7. The actions of Asanas are regulatory and massaging and optimize cellular functions.

The Nervous system

1. Yoga is the only non-stressful, optimum method of exercise.
2. There is an increase of vagal tone.
3. The adrenal glands and sympathetic nervous system are optimally linked leading to invigoration rather than depletion of hormones.
4. Yoga refreshes, while other systems exhaust. Other systems of exercise initially stress the body, though the final feeling is one of well being.
5. The consistency of the nerves is soft and supple, preserving healthy electrical transmission.
6. Yoga achieves voluntary control of the autonomous system. Other systems achieve only involuntary control.

The Renal system

1. There are no fluid and electrolyte disturbances, unlike sporting events.
2. There is no additional load on excretory organs. Protein loss does not occur with Yoga practice.
3. Kidney functions are regulated due to direct organ massage and alteration in renal flow.
4. Muscular functions of bladder are well maintained.
5. Backward bending Asanas squeeze the kidneys improving tissue health.

The Locomotor system

1. Yoga does not use a pounding action.
2. There is no wear and tear even with chronic usage.
3. Joints, ligaments and muscles remain soft and supple.
4. Range of joint movement is greater in Yoga than in any other system.
5. Chemical fatigue of the muscles is less with practice of Yoga.

The Endocrine system

1. There is no depletion of hormones as in endurance exercises-there is no disturbance in baseline values and post-exercise values.
2. The body systems are yet energized.

6. Adaptive changes like hypertrophy, excess glycogen storage, rise in muscle enzymes etc. do not occur in Yoga.
7. Bones remain sturdy in old age due to the calculated aligned load during practice of Asanas especially balancing postures.

Q6

Can we practice Asanas when we are exhausted?

A6

Yoga is such a superior system that you emerge refreshed from exhaustion. Yoga recharges your batteries and acts as *a voltage stabilizer*. Of course, there is a time when the body needs rest and we cannot practice Yoga. It is natural to feel so.

There are various forms of relaxation exercises like Supta Virasana on a pillow, half-Halasana on a stool, Viparita Karani on the pillow etc. The benefits of these Asanas are elaborated in *A Matter of Health*.

Q7

Can we then adopt Yoga as singular form of exercise for health? Yoga schools talk about individualized routines for those persons who are well past their youth.

A7

Yoga can be a sole form of exercise for health, if done intensively for one and a half hours daily. Since many do not have this kind of time or patience, they tend to prefer other forms of exercise. This is the reason that in my clinical practice, sometimes, I recommend Yoga in combination with other forms of exercise for such people (but practice Yoga before other forms of exercise).

Yoga has to be tailor made for individuals initially; eventually all can reach the same level of fitness. This is physiologically possible. Children in a class are of different calibres, yet a generalized teaching system is used. Specific problems regarding each child can be dealt with.

Similarly, a standard routine of Yoga can be adopted and modifications made to suit situations.

As a physician incorporating Yoga, I assess the cardiorespiratory status and different body parameters of the person, make a baseline health check up and then prescribe specific Asanas to be followed until the person is on par with a peak fitness level and can withstand intense sessions.

Studies have shown that even at the age of eighty-five or ninety, individuals can be trained to a level of physical fitness as that of a young person. This is essentially practice and careful understanding of the subject. The human body can achieve much; we must know the intricate details and methods of how to do so.

In the *Hatha Yoga Pradipika* it has been clearly stated, that whether one is young or old, infirm or sick, all can begin practicing Yoga, so that they can become fit to practice Yoga better! If you carefully note, Yoga is introduced to enable the person to achieve better levels of the same (the ice has to be broken for improvement in health).

The geriatric can learn many Asanas including the Headstand without problems. This will enable them to have a better quality of life. Headstand can prevent organic senile changes in the brain as the rich blood supply to the organ is maintained throughout life.

I insist on the geriatric learning Headstand (in a graded way) unlike a Yoga teacher who once said, "Why bother about teaching Headstand to a geriatric, let them think of God at that old age". This is escapism, an insult to Yoga, the body and mind and the person concerned. Everyone has a right to a healthy life. A sudden stroke could cause brain damage. To think of God, you need a healthy brain!

I strongly feel that every physician should have a personal exercise routine in order to counsel patients (many physicians do not; we have double standards, and do many things we advise a patient not to do).

Q8

What time is ideal for exercise?

A8

It is best to exercise at the *same time every day* on an empty stomach, preferably early in the morning or in the evenings, and ensure a disciplined routine. This would mean a gap of half an hour following consumption of a liquid, an hour after a “light” meal or three hours after a “heavy” meal. The essence is that the stomach should be kept empty for exercise.

Q9

What is the commitment needed to achieve health? Do we have it? What is the reason for increased health care costs in spite of good medical progress? Who is responsible for the chaos?

A9

The commitment is to set right the pillars of health. Many of us do not have the zeal to achieve this end. Majority of human beings do not have a commitment to health unless a crisis occurs. Health was not a preoccupation in the olden days as man led an ethical life in all aspects. With neglect in value systems, health has deteriorated in spite of advancement in medical care. **WE** are responsible for the health situation today. Often, money and time-consuming research is not needed to establish guidelines for health. *Simple diet and right exercise* will go a long way to provide benefits.

Q10

Do you think it is easy to follow the many dictums of health as you say? If we cannot exercise daily, what is the minimum needed for health?

A10

The choice is there for an intelligent person to decide between health and illness. We spend time for everything but neglect our health. We protect

our material possessions yet never bother to protect the God given body and mind. This is strange.

We should exercise every day. If we cannot achieve this (and I do not think this is not possible), at least we should try to make up whenever possible. The minimum time required for any kind of exercise to maintain health is half an hour daily. An hour is beneficial and two hours is ideal. Current studies show that a prolonged exercise routine is beneficial in contrast to earlier research. This does not apply to Yoga always. For e.g. a fifteen-minute regimen of Dog pose, Headstand and Shoulderstand provides tremendous benefits.

Q11

Extreme (sometimes unavoidable) stress is detrimental to health. How do we affect stress management? Since we cannot take health for granted, what can we do to remain healthy for most part of our life?

A11

This is vast a topic. You could read the Yoga sutras or *The Vision and the way of Vasistha*²⁸. This will help you get a correct perspective of life. Follow a disciplined routine as far as possible. Sleep at the appropriate time-around 9.30 p.m. Get into the habit of waking at 5 a.m. It is not the number of hours of sleep that is beneficial but the time at which we sleep, as we should not alter the biorhythm in the body.

Try to eat at the same time every day. Inculcate this regimen into your life. You will find your entire attitude changes. It will give you some calmness, especially if you practice Yoga, Pranayama and meditation in addition. At the end of it, surrender to the Higher power. Without this surrender, Yoga has no value even to the best of Yoga practitioners.

Do not take the body for granted. Health journals and magazines or your physician creates awareness. The more sensitive you are, the easier it is to perceive bodily dysfunction. We need to

understand health and the corresponding negating factor-disease. The two states coexist. A limitation of today is a disease of tomorrow.

The key words to health, (diet and exercise) are like two wings of a bird that carry you through life. They are Abhyasa (practice) and Vairagya (renunciation, a sense of detachment from the fruits of labour) according to yogic concepts. Bhagawan Sri Sathya Sai Baba says, "The man who eats thrice a day is a Rogi (a sick person), the man who eats twice a day is a Bhogi (a sensualist), and the man who eats once a day is a Yogi".

Minimize the use of junk food. We can never be sure of the kind of cooking medium used in hotels, and the quality of ingredients used. Most snacks are junk food. Coffee, tea, and pickles become junk food if we *abuse them*. We gorge these foods, and become excellent candidates for heart disease.

Try to snack in moderation. The very innocuous looking biscuits have hydrogenated fat though non-hydrogenated biscuits are increasingly available. Pizzas contribute to a high incidence of heart ailments! It should be termed as a "slice of heart disease"! If we exercise intensely we could "burn" this fat content.

Potato fries are another health hazard, even if "safe" oils are used. Safe oils are mono (preferable) and polyunsaturated oils used in balance. The coconut kernel is fibre and its fatty acids are short and medium chain that is hypo-cholesterolemic.

Moderation is beneficial so long as you expend the calories with adequate exercise. Our body can convert any food category into fat. "Zero fat" labels on foodstuffs must not mislead us. We must understand the idiosyncrasies of our body and eat accordingly.

Psycho-neuro immunology is the study of mind and its influences on infection. Studies have proven that asthmatic or bronchitic attacks can occur periodically under stress. Mind is metaphysical. Treat the mind first and the body

to an extent, will set itself right easily! A life with proper stress management can thus be achieved.

Q12

Is health in a person's genes?

A12

Genes do throw certain patterns providing a baseline at birth, but they only play a certain part. Indian philosophy also has a similar concept-karma (action and reaction, what we sow we reap). I will not elaborate on this here, as it is not the focus of the book. If we abuse our body, irrespective of the genes, we tend to suffer. Unhealthy parents could produce off springs with poor health status. Hence, yogis reiterated the need to maintain an orderly life to ensure health from one generation to the next.

With a poor genetic background, achieving good health becomes more of a challenge. Nevertheless, an effort must be made to have a quality life. A healthy gene, in addition to exercise and proper diet, helps us reach the pinnacle of health. Environment is a vital factor that influences good health. We influence our environment, which, in turn influences us. Diet is also part of our environment.

Certain diseases are psychosomatic e.g. Asthma. Others that have physical symptoms need to be treated accordingly. For e.g. when factual symptoms of headache, giddiness, palpitation, nausea, manifest and we diagnose it is a stress related menopausal condition, the patient may be puzzled. How do we categorize these symptoms and understand if they in the psyche or soma?

No disease is entirely physical or psychological. The mind affects the body and vice versa. It is up to us to optimize the reaction. Largely, if the senses are controlled, the effects of the disease are controlled and the patient recovers faster. Yoga can be an effective tool and a launch pad to enhance health with the capital that we are endowed by birth.

Many of us have an innate skill to differentiate between body and mind. If this seems impossible, consult a professional sensitive enough to analyze and offer a solution. Amazingly, a child at times understands complex matters easily! If the child is taught to be aware of the body and mind and its interplay, a sensitive faculty develops that becomes fine-tuned, as the child grows older.

Stress affects matter. For example, an overworked executive will suffer high blood pressure due to excessive hours of work. This is due to the constant chemical discharge needed to sustain bodily activity. The heat in the body rises just as a car is overheated with excessive usage.

However, we must differentiate between positive and negative stress. Exercise is a positive stress that develops a feeling of lightness and exhilaration in the body and mind. Any stress that weakens us is of a negative quality.

Q13

Does this mean that even if you stay awake late into the night, reading or watching TV or writing for relaxation, your blood pressure could rise?

A13

It definitely will over a period. Sleep rejuvenates the whole body. This is why nature has designed a pattern. We must also know how to sleep. Not pop into the different dimension of sleep all at once, (close the book and television and promptly shut our mind) as we do. Consciously keep the body and mind quiet. Lie down in Savasana first, relax the body and senses, go through the day's events, put yourself in order and then sleep comes with a refreshing quality that you must experience.

Biologically, retiring at 9.00-9.30 p.m. and waking up at 5 a.m. is ideal. An excuse often given is "I can work only at night" (we can condition the body in any manner). However, this is incorrect. The body and mind will obey for a few years and then protest! This protest is

disease. Something is always happening every second, minute and day. Many fail to understand this sensitive issue, as they do not suffer ailments at that point. Studies have shown that in elderly hypertensives there is a morning surge in pressure that can be detrimental²⁹. This is probably why our ancients advised us to start the day with meditation and Pranayama as these mitigate or remove stress on the sympathetic nervous system.

The key for health is controlling the senses that get easily dissipated in a frantic lifestyle. Yoga advocates Pranayama (breath control), Pratyahara (sense withdrawal) and Dhyana (meditation) to neutralize this. It refreshes the overused body and mind. In this quietness, we can understand many complexities of the mind and the body. When we do not attempt to reach this state, we miss an entire dimension.

Q14

Pain is a part of many diseases. Why is it that the threshold of pain is highly variable? Is this a psychological factor?

A14

This is partly inbuilt and partly acquired. Those who are "tough" recover faster from an illness. Even if the illness is protracted, they are not deeply affected. The inbuilt factor lies in the genes, and the acquired factor is the sociocultural milieu. The way we live- peer pressure, interpersonal relationships, reactions to day-to-day living etc. influence pain threshold. A patient of mine, very docile by nature was constantly exposed to challenges of adverse situations. He adapted remarkably and emerged a stronger person. The mind plays a very important role in attitude.

Nature causes us to adapt. We can make a conscious effort to be strong though it is not easy. Teach children to live like the "willow tree" that bends rather than like an "oak tree" that breaks in a storm because of resistance. It is all in the mind!

A patient of mine was diagnosed to have depression due to low serotonin levels (a neurotransmitter in the brain, which helps transmission of chemical signals). On the contrary, owing to his depression, a chemical imbalance arose. His academic credits were unsatisfactory which would restrict his entry into colleges. This naturally, caused a good deal of consternation and later, depression.

The patient was advised antidepressants but in vain. Subsequently, as the exam scores improved, his depression vanished! Cause and effect must be very carefully positioned in relation to each other.

This is a situation where the mind is affected producing a certain effect in the body. Mind is energy, and energy controls matter-not vice versa. Current Western concepts tend to put the cart before the horse.

Eastern thought has always been different. In the *Yoga Vasistha*, Sage Vasistha says, “When the mind is afflicted, the body completely follows the disturbance. Due to the disturbance, the vital airs (energies) flow, abandoning evenness” (Samvid, op.cit., page 210, verse 716).

This quote makes us realize that we can tune our body and mind towards health.

Q15

Can you explain the role of drugs in maintaining good health?

A15

Drugs cannot maintain health. They can eliminate disease! Every drug has a special role to play in disease care, has a special benefit and each its own side effects, whether it is Western Medicine, Homeopathy or Ayurveda. The physician must recognize the inherent pros and cons and be judicious in the selection and prescription of a drug. Even a seemingly innocuous drug like paracetamol can be harmful to some. Ibuprofen if frequently taken for pain may be very harmful to some though an equal number may face no side effects.

Q16

You are talking about cross-purposes. Drugs might heal and at the same time, they could be damaging.

A16

Again, please remember that **drugs do not heal**. They support the body systems. **Nature does the healing**. For e.g. an antibiotic kills the bacteria-the body does its repair process to complete the cure. If the body is weak, drugging cannot help. A simple bruise might heal in a few days for some and in a month for others. This is **individuality in healing**. The body cannot be put in a straight jacket for healing purposes.

Undoubtedly, most of man’s creations are artificial and damaging with inherent side effects that we are unaware. In the end, this inherent side effect destroys man. Whatever is available in nature is never deleterious.

I believe in individualizing drug prescriptions using them only when necessary. Not everyone can tolerate all the drugs. Drugs, which are prepared according to Homeopathic and Ayurveda logistics, are safe and the side effects, if any, are so minimal that they are manageable. We need not be a fanatic and avoid Western Medicine but minimize its usage. In the end, our body suffers less damage. **For acute care, Western Medicine is often indispensable**. However, for chronic ailments it may be detrimental though at times unavoidable.

A patient of mine consulted me for an acute backache, and I referred her to a homoeopath for pain reduction before introducing Yoga, as she could not tolerate analgesics. She was impatient for relief, and could not wait for Homeopathy to act (which is a wrong concept).

I prescribed a “mild” allopathic drug, yet the reaction was alarming. Her urine output reduced, her body swelled and she experienced severe pain in the urethra. The drug had to be discontinued immediately. We must remember that there is no completely “safe” allopathic drug.

It is a relative situation-*a “safe” drug for one is “unsafe” to another* even though research shows that “a” particular drug is proven very “safe”.

At present though drugs have multiplied and hospitals have been established in every nook and corner, ill health is also wide spread. This situation is attributable to the spread of deleterious food habits and pastimes.

Bhagawan Sri Sathya Sai Baba

Q17

At some point, intake of drugs is unavoidable for body malfunction that may recur periodically. How do we tackle these situations?

A17

I would suggest that if the situation permits, try alternatives like Homeopathy or Ayurveda first. If these do not help, conventional medication is available. Yoga can certainly be used wherever possible.

Q18

There are arguments that Homeopathy is not a scientific method of treatment. Why do patients discontinue homeopathic treatment when they feel worse at the start of treatment?

A18

A conventionally trained physician may not be knowledgeable in Homeopathy and hence should refrain from analyzing it. *Conventional parameters for analyzing alternative sciences are inappropriate as these systems work differently.* Though there are studies demonstrating the efficacy of Homeopathy or the lack of it, in practice, matters are singular.

We must study each alternative science, and then set specific parameters for analysis of the same. This is obvious to say the least. It is partly a fear of the unknown, which would dissipate if we made a study of it, discuss with experienced homeopaths and observe cases, which have benefited from this branch of medicine. The patient should differentiate a good homeopath

from a quack. Homeopathy is unique in that the treatment is highly individualized.

Homeopathic remedies could aggravate a condition, and this reaction is usually manageable. Aggravation could be followed by amelioration. The philosophy of Homeopathy is different from Western pharmacology. The experienced homeopath can experiment with the choice of drugs and dosage. Aggravation could be an indication that the medicine is working, or due to a higher potency in the dosage.

If the reaction is severe, then the homeopath reduces the dosage, spaces it out, changes the medication entirely to suit the patient, or gives different pills in combination.

The patient should be educated on these concepts prior to treatment but homeopaths sometimes act as dispensers of arcane medicines that make patients lose confidence in the physician as well as the system.

Q19

What is your order of preference, where a drug is concerned?

A19

This depends on the situation. In an emergency, Allopathic drugs are preferred as they are quick in action and indispensable. Next in order would be Homeopathy, then Ayurveda. If these fail, revert to Allopathic drugs for the shortest period of usage if possible.

Q20

Is not advertising drugs an infringement of medical ethics?

A20

Legally this is permissible. Medical journals carry such advertisements. Ethics are important though many may not follow this. The law of the world is very lax. There are blatant advertisements like one that offered the “safest” nonsteroidal drug for severe Arthritis.

The label on every drug should carry the side effects in bold print. Doctors should take time to advise their patients on proper drug usage and its reactions. Few doctors seem to have the time nor interest to talk to their patients. Patients feel guilty of asking questions as, often, an aura of impatience pervades the room. They should also suggest alternative systems. ***When we use a drug, we are absorbing a chemical into the system.***

Q21

Can drugs be sold off the counter? Banned drugs are still available in many countries.

A21

Most drugs should be sold only through a prescription. Multinational companies should refrain from producing harmful drugs. They should also opt for better-designed scientific studies. Another concern is that the reports of many studies are not made public unless a calamity occurs. Falsification of research is on the rise. In some countries, banned drugs are sold because of a patient driven demand. If doctors advise patients specifically not to use such drugs, they will automatically disappear from the shelves. Drug companies perpetuate a concept.

Q22

What is this concept?

A22

It is often said that Homeopathy and Ayurveda are dangerous because they contain heavy metals or cortisone, which is not the full story. There is a specific method of preparation, which renders them safe to use. Western pharmacopoeia has drugs that contain gold used in its gross form for treatment of Rheumatoid arthritis. The side effects of cancer chemotherapy are terrible yet no one creates a furore. Cortisone injections are administered to many patients with end stage illnesses. How can we condemn the other systems? Drug companies should search for safe alternatives wherever possible.

Q23

An antihistamine injection administered to a patient for an allergy developed into a huge injection abscess, which needed an incision and drainage. The surgeon was appalled that an injection could be given so. If there had been a delay, the infection would have affected the sciatic nerve (an important nerve in the leg) and caused a paralysis! Could you comment on this?

A23

Such a “paralysis” is rare and unfortunate. Doctors and nurses do care for the patients. However, they should look on them as people with emotions and feelings instead of economic propositions. For example, (owing to pressure of work perhaps), many doctors fail to instruct the patient that iron should be strictly taken on an empty stomach or anti-tuberculosis medicines should be taken before breakfast.

Love is an important factor when dealing with patients. Two wonderful hospitals are the Sri Sathya Sai Institute of Higher Medical Sciences in Puttaparthi, Andhra Pradesh, India and a second Sri Sathya Sai Institute in Bangalore, Karnataka, India where super speciality care is free to everyone and love is the main motto. This has not been, and cannot be replicated anywhere in the world.

Q24

Do drug companies try to influence doctors with incentives? Do you feel obliged to prescribe these drugs? Doctors sometimes favour a particular laboratory for clinical tests-is this justified?

A24

Medical representatives do approach me. Drugs are not to be prescribed as a routine. In my personal practice, they consult me for their health problems that Western Medicine could not treat. What a paradox!

I do use drugs of high quality with justification.

I make sure that the representative is aware of this. The issue of incentives offered to a physician is worldwide. A colleague of mine in the USA had been offered a vacation to Hawaii. Strings are attached and the pressure on doctors to use the particular drug is more than subtle. Companies vie with each other in a spirit of competition that is often unethical. This can be rectified only if we set our own house in order.

Economic incentive is not the only reason why physicians prefer a particular laboratory. The physician may be familiar with the lab and its idiosyncrasies and hence certain about its accuracy of results. All facets of life are becoming commercialized and it has unfortunately happened to the medical profession too. The only way to avoid this is to be honest without compromise. Bhagawan Sri Sathya Sai Baba often says, "Money comes and goes, but morality comes and grows".

Q25

Vitamin abuse is a raging topic, as excess would harm the body. Are vitamin supplements essential for children?

A25

The body utilizes required resources and most of the vitamins ingested are excreted in the urine the next day. Calcium is recommended for women especially after menopause along with vitamin E.

There are those who take large doses of vitamins, each of them manufactured by different drug companies. They are unaware of the different trade names and mislead into thinking that each is different! A single dose supplies the needed benefit. Children definitely need vitamin supplements until puberty. If the adolescent focuses on a balanced diet and habitual exercise, vitamins can be discontinued and resumed after forty. During pregnancy, supplements are essential.

Q26

Does Spirulina have any side effect and do Yoga practitioners need this?

A26

Spirulina is a blue-green alga found in alkaline waters, which is biologically rich in antioxidants, protein, beta-carotene essential fatty acids and chlorophyll that you do not need any other supplement. There is no harm in using it. However, some of my patients could not tolerate it due to laboured breathing as a side effect. This does not mean that asthmatics are barred from using it. Yoga practitioners can certainly derive the benefit of this in our polluted world.

Q27

Is the use of Evening Primrose oil as a gynaecological prescription for women justified?

A27

This is a natural substance filled with linoleic acid, which is an essential fatty acid. Essential fatty acids are needed for many metabolic reactions in the body and are only found in the diet. They are not synthesized in the body. This oil promotes healthy blood flow, retaining moisture content of the skin, and can work as a neuro transmitter in the brain. However, an oil is not a substitute for exercise.

Q28

What are the rights of a patient? Many doctors listen briefly, sometimes even impatiently and prescribe investigations. We get the feeling they are playing God, none understands the anxiety of the patient. We sometimes avoid visiting a doctor!

A28

A patient has a right to be educated about the malfunction and symptoms resulting thereof and the rationale of the drug prescription. No doubt, doctors are very busy, and it is obvious by the crowds in the outpatient rooms. A doctor may not be able to devote time like the GP of yesteryears who also played family friend, philosopher and guide.

The physician should be aware of the reason for consultation and should discuss the necessity of

the treatment regimen. Tests should be prescribed only if necessary. Reassurance goes a long way in healing, and it is incorrect to convey unnecessary fears and suspicions before a diagnosis can be established. Many doctors do not seem to have compassion for the patient. A *healthy dialogue between the patient and the doctor* is essential and beneficial.

Q29

Do patients have the right to maintain their medical records?

A29

Unlike in the West (copies are readily available to patients) many hospitals in India do not hand over the records to the patient, for reasons best known to them. Part of this is a defensive situation. It would be ideal to have a doctor in every family, who can function as a trouble shooter in case of medical problems, realistically this does not happen. Friends in the medical community (doctors and nurses) are often wonderful resources when needed.

Q30

Some doctors exploit patients. Diagnostic tools may be invaluable for the march of science and technology. The unsuspecting patient pays even when it is unnecessary. Invasive tests may be detrimental to health. How do we know when they are necessary?

A30

Investigative machinery is beneficial but they are expensive and not duty free, as many of them are imported in some countries. Ultimately, the end user pays for the overheads. The greater the number of investigations done, the larger is the profit for the investor!

Consult a doctor who is ethical, who will not mislead you and is committed to the profession. For major invasive investigative procedures, a second opinion may be sought. There could be a ban on doctors being shareholders in health institutions so that the question of profits may not arise. The patient should be informed of the

risks involved, and the family briefed. This does not mean that we should be paranoid in warning the patients of the risks.

Q31

Health insurance procedures seem tedious. The ailment one suffers from is often “debatable”. For instance if a person is diagnosed to have mitral valve prolapse which is not a serious preexisting ailment, and is hospitalized for a bout of palpitation (pending further investigation), insurance companies could sometimes classify the situation as a “pre-existing” ailment and reimbursement would be difficult.

A31

Quite right, it is a tricky affair. An independent panel could make the verdict in such situations. Reimbursement should be given not only for hospitalization but for outpatient procedures as well. I still face such problems with my patients. When health is a business proposition problems will arise.

Q32

Are not freedom and rights of a patient curtailed in India?

A32

A patient in India has freedom of a different kind. In the West for example, normally you do not have the freedom of consulting a doctor of your choice (unless you are prepared to pay for it); your primary physician and the insurance company make the choice for you. In India, the patient can choose any physician (as insurance companies do not influence this largely) and major investigations are completed faster than in many countries. India is one of the few countries where access to a physician or surgeon is easy. The patients pay the fee directly to the physician claiming reimbursement. The waiting period to consult specialists is very short compared to advanced countries. The other side of this freedom is that chemists often end up prescribing drugs and patients can buy essential medicines often without a prescription. This is highly irrational and dangerous.

Q33

In the United States for example, one can sue a doctor for malpractice, carelessness, and just about anything!

A33

You have to be extremely careful as a medical practitioner, as the suing amounts are phenomenal and your license can be revoked. This is due to lack of communication between the patients and doctor-***both abuse their freedom of action***. Public accountability in India is often relegated unlike Western countries.

Q34

While some of the hospitals in India boast of the finest equipment and excellent team of doctors, few can afford the rates. Does this mean that the economical weaker sections of society are deprived of good medical care?

A34

Some doctors and institutions that I am aware of reserve a percentage of investigative procedures using expensive equipment for people who cannot afford it. Ensuring that this free percentage is utilized properly is essential. It is essential to secure health insurance early in life. More importantly, we need to give health a priority, and do everything to ensure a healthy lifestyle.

Everyone should educate themselves about common illnesses. Finally, we have to bow to the inevitable karma that precedes us.

Q35

Until recently, a physician would not charge a colleague and dependent a consultation fee, but now this is not observed. Please comment.

A35

Many doctors still follow such practices. However, we must understand that people may not want to feel obligated.

Q36

What are your views on euthanasia?

A36

This is very sensitive subject. Firstly as a human being and then a doctor, I would never be able to end a life because the patient or the relatives request for it; this is God's work. Medical science may progress to such an extent that it may be able to restore most comatose patients to normalcy. The one major facet lacking in medicine is the inclusion of spirituality that would enable the doctor to understand that there is another dimension of life influencing health. We doctors often tend to feel that we have the final word on health care. This is incorrect.

Q37

What is preventive health care and how is it addressed today? What do the ancients say about this-especially Sage Patanjali and Sage Vasistha?

A37

As the word implies, preventative care is to stall events and prevent health problems or at least minimize the effects of disease. Patanjali has mentioned in his Yoga sutras that disease arises and regresses in four stages-dormant, attenuated, interrupted and fully active. He has given a very important sutra (a terse verse) for health which is a preventative formula, "Heyam dukham anagatam", heyam =that which is to be avoided, rejected, dukham=sorrow or affliction, anagatam=hidden, (Iyengar, op.cit., Sadhana Pada, II.16).

The essence of this is-we do not know what diseases are in store for us in the future, so let us protect our body, mind, nerves and other parts at the earliest so that we may not become a victim of future problems. At least, the diseases may not have that intensity to weaken us too much. This is the essence of preventative care, which is in the forefront today in the West, ***but our ancients in India have a right to lay claim to this as the progenitors of such an approach.***

Sage Vasistha has said that most diseases arise in the mind due to improper code of conduct-not a moral code alone also that of health too.

He says “when desires are springing up excessively, the stupidity in the mind is not conquered, by taking bad food, by occupying bad places, by working at improper times, by the arising of evil actions, by the bad consequences of association with evil persons and by the generation of bad emotions, when the vital energy is reduced to an adverse state due to depletion or excessive fullness in the continuous channels of nadis (arteries, veins, nerves) and the body is (consequently) weakened, physical disease, the cause of indisposition arises in the body due to (such) defects”, (Samvid, op.cit., page 210, verse 712-715).

The mind is not given the importance it needs, though, the awareness of this is better than before. There is no substitute to right living. One must be a “lotus-eater” and live in the world, yet be as detached as possible.

Q38

Is there really an elixir of life?

A38

If man had an elixir for immortality or a healthy life, he would become lazy. It is not possible to swallow a pill and push your system into active functioning. Such an elixir of life is a myth and fantasy. Perhaps the sages of yore possessed an elixir but they were highly self-disciplined and lived in a very different environment.

The “elixir” of life is constituted by mind, exercise and diet that cannot be emphasized enough. Nature intended that the body machinery be used through life. Usage comes only through exercise. If not used, it will rust and ultimately disintegrate. Health has to be earned the hard way and cannot be bought from a pharmacy. The old adage that you have to “sweat” to keep good health is correct will remain so. However, we have a tendency to procrastinate.

Exercise is essential and the benefits of exercise and its use as a tool of therapy have been scientifically proved. The ancient yogis and the Western school of thought both accent this. ***Yoga is the elixir*** that needs to be utilized effectively. The cells of the body are pacified. Yoga is the only science that teaches us to introvert in both body and mind, and emerge refreshed.

To sum up, we can have the benefit of health only through a disciplined code of conduct throughout life using the three limbs of mind, exercise and diet. Refrain from consuming drugs unless necessary. Refrain from surgery if alternatives are available. Consult specialists trained in Western Medicine and in at least one alternative science. Finally and undoubtedly, surrender to the Higher power. These are sure steps to good health.

Body is the temple of God. Keep it clean, fresh, and fragrant through developing compassion and love.

Bhagawan Sri Sathya Sai Baba

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SECTION III

“Yoga is the rhythm of the body, the melody of the mind, the harmony of the soul, creating the symphony of life”.

BKS Iyengar

Issues on Yoga and Medicine

Our life can be compared to a business enterprise. The body's normal temperature is 98.4 degrees Fahrenheit. If the temperature goes up to even 99 degrees, it is a symptom of disease. Our blood pressure is 120/80 and if it becomes more or less it is considered as disease. Even our eyeball can see light only within a particular range. Any deviation from this range will result in damage to the retina. Similarly, our ears can hear sound within a given range, beyond that limit the eardrum will be damaged. Thus, our body is called a limited company. Hence, we should observe their limits while making use of the body.

Bhagawan Sri Sathya Sai Baba

General Queries on Asanas-their theory and practice:

(The word Yoga often used refers to Asanas and Pranayama unless otherwise clarified. Standing poses refer to those Asanas done in a standing manner. Inversions mean topsy-turvy poses, forward bends are poses wherein the spine is stretched forward seated or standing, twists imply that the body is rotated on the vertical axis in a standing or seated manner, back bends imply that the spine is stretched backward, and balancing poses imply that the body is balanced on one leg or two arms. "Active" poses are those practised without any support, independently, which require strength and is "healthily" strenuous. "Passive" poses are those that are practiced with props or with someone's assistance. The concepts of active and passive poses are available only in the BKS Iyengar system of Yoga).

Q1

Being a medical professional, have you found that medical and Hatha yogic science are similar, complimentary or do they completely differ? Does it cause conflicts in you?

A1

There are similarities and dissimilarities. I treat the patient based on the clinical condition. I never feel that either Western Medicine or Hatha Yoga can solve all medical disorders and hence there is no conflict. I try to be mentally receptive so that I can adapt and solve medical problems.

Q2

Does medical science approve the practice of Hatha Yoga? Can we train the body to attain such postures or should we adhere to the customary kinds of exercise and diet control?

A2

Biologically and according to evolution, the body is built to attain such postures. There is a precise method with specific benefits that accrue thereof. Yoga is an organic exercise that utilizes the special principle of internal massage. This benefit cannot be obtained with other exercises. Practice Yoga to achieve this internal massage. Our *intelligence is like a gyroscope* that helps us execute Asanas properly. The body is a house of movement and rhythm. If we follow the biomechanics, *there will be no hazard* for the practitioner.

Q3

What is the minimum (and maximum) time for retaining a pose?

A3

In general, we can *retain the poses as long as we feel a sensation of exhilaration and lightness*. This means that the muscular grip on the Asana is healthy and strong though this does not mean that we push ourselves to a point of fatigue. When we tire, we should stop. Medically, practice standing poses for a minute except for Dog pose, which may be held for at least four to five minutes. Inversions can be held safely for 5 minutes (there are restrictions for some) and

forward bends can be held for 5 minutes at a time if possible.

Twists can be held for a minute on each side and seated forward bends should be done for a minimum of three to four minutes each. Balancing poses can be held for less than a minute. The above guidelines will vary according to the practitioner's capacity. Back bends can be practiced for at least for 1-2 minutes. Practice Urdhva Mukha Svanasana and Viparita Dandasana for three to four minutes either continuously or with breaks. Kapotasana can be retained for a similar period and the more advanced variations held for a minimum period of a minute and can be repeated a couple of times.

Q4

What would you consider a good Asana practice sequence on a weekly basis?

A4

If we have two and a half hours to spare for a single session of Yoga daily, it would be ideal. If not practice Yoga twice a day, split all the sequences into morning and evening schedules. Yoga never increases the wear and tear of the body unless done incorrectly.

By practicing only two or three Asanas every day, we would never master the poses or derive complete benefits.

Practice **all standing poses** and a few seated forward bends and twisting poses along with inversions on day one. The **backward bending Asanas** on day two, pre-eminence of **inversions and forward bending poses** with twisting poses on the third day, followed by back bends again the next day, **balancing poses with Viparita Chakrasana** combined on day four, pre-eminence of **twisting poses** and forward bending Asanas on day five with inversions, and so on. Everyone has to find a sequence to suit his or her life style. We can practice Handstand, Elbow balance, Headstand, Shoulderstand and Pranayama on a daily basis to keep the body strong.

Q5

While performing Asanas, is the attempt at the final pose or alignment important? In continuation of this query, is stability or accuracy of alignment important?

A5

Accuracy of alignment provides stability! Understanding the “stable” pose awakens the intelligence of the practitioner for refinement in practice. **Perfect alignment is always important** though a pose may be just ten percent of the final. Stability of a pose occurs with repeated practice.

In a clinical situation, the patient can compromise (temporarily). In some instances, the patient may necessarily do the “wrong” to achieve the right pose later. The intelligence of the practitioner is sharpened by repeated practice and this in turn refines a pose.

Q6

Does an innately flexible person suffer more injuries while attempting to practice Asanas?

A6

This depends on the degree of elasticity beyond the normal level. Injuries can be prevented if the practitioner understands how to use the innate flexibility carefully. The chance of overstraining the perineal muscles arises in seated forward bends, particularly in Upavistha Konasana. The practitioner must be careful to consciously tighten the groin muscles (to an extent) while bending forward in the pose. The same method applies to standing poses or back bends.

Q7

Is it correct to assume that the dictum “no pain, no gain” applies to Yoga also? Is pain during practice of Yoga postures a good sign? Should we stop Yoga if we feel pain?

A7

Pain during any exercise has a cause. Beginners could suffer pain due to stiff muscles especially

if they have been sedentary and this will disappear. This is known as delayed onset muscle soreness (DOMS). *This is natural*. An incorrect technique causes pain. While practicing advanced postures, knowledge and experience are required to identify mistakes. The “optimum pain” or “healthy pain” principle applies here. Advanced postures will produce a “pain” even for habitual practitioners who attempt the difficult poses for the first time. This will subside in due course.

Pain is a teacher. It indicates that something could have gone wrong. We must learn to listen and understand it rather than move away from it. One never need be afraid, as the human body can adapt. There is nothing mystical about the occurrence of pain while exercising. Analysis will help find the cause.

The earlier we identify the mistakes, the easier is it to rectify them. Mistakes that have taken root will take a longer time to be rectified. Pain during or after we practice Yoga can affect one or both sides of the body. Patanjali has said “Vitarka badhane pratipaksa bhavanam” (Iyengar, op.cit., Sadhana Pada, II.33), vitarka = doubt or uncertainty, badhane = obstacle, pain, pratipaksa = opposite side, contrary, bhavanam = feeling-intelligent analysis will reveal the cause of the pain. We can correct the situation by applying the correct technique to the problematic side. If we practice the stretches properly, pain will not occur.

The whole body has to act. To extend the part you must extend the whole. When you have learnt to stretch completely, you have learnt to relax completely.

BKS Iyengar

Q8

Some teachers force the students to perform the postures despite pain to the point that the student often has an emotional crisis. Is such a method correct?

A8

This is a reprehensible approach. On the contrary, the student must be helped physiologically and psychologically to improve. The instructor must be able to descend to the level of the student and teach Yoga. Teachers sitting on high pedestals often provoke a dislike for Yoga in the beginner or moderately mature practitioner.

Q9

Often a Yoga practitioner tends to attempt all the poses even while suffering from a particular problem. Is this the correct approach to Yoga?

A9

Attend to any existing problem before attempting all poses. For example if the student has a groin injury and standing poses cause pain, that pain has to be eliminated in all the standing poses before attempting forward bending Asanas, back bends and twisting poses. If we neglect this principle, the pain will become chronic. However, we can perform inversions.

Q10

Correct practice of Asanas balances the three doshas (the three humours in the body according to Ayurveda). Does practicing Pranayama “balance” our “inner” body? Is the inner body the same as the Pranamaya kosha?

A10

The “inner body” is the electrical system and the Pranamaya kosha. Pranayama directly influences the electrical system of the body while Asanas work by removing free radicals (accumulated cellular toxins) improving circulation, massaging the organs etc. Inherently, Pranayama could balance the inner body, as there are different varieties like Surya Bhedana, Chandra Bhedana and Sitali. However, we must not neglect Asana practice.

Q11

If Asanas are for the Annamaya kosha (Anna = food, kosha= sheath) and Pranayama for the Pranamaya kosha, can you give some indication as to which yogic practices have an effect on the other koshas Manonmaya (mental) kosha, Vijnanamaya (knowledge) kosha and Anandamaya (bliss) kosha?

A11

Pratyahara (introspection of senses) and dharana (concentration) benefits the Manonmaya kosha. dhyana (meditation) benefits the Vijnanamaya kosha while, the **culmination of meditation** benefits the Anandamaya kosha. Practice is refined with intelligence. Thus, the intellectual sheath is strengthened by Asana practice. Pranayama is not for the Pranamaya kosha alone. The clarity of thought that flows after Pranayama practice indicates that it affects the mental and higher planes.

We must understand here that in the “Iyengar” style of Asana practice, qualities of introspection, concentration and meditation are emphasized. Hence, these are not separate states to be achieved. To explain further, when we attempt Trikonasana, the mind has to be introverted and analytical-this is pratyahara. The muscles, joints and nerves have to be positioned perfectly in the Asana. Concentration is needed to achieve this. When the Asana is performed effortlessly, the person is part of the Asana and feels the expanse in it. This is a meditative quality in practice.

Q12

What is the best approach to learning Yoga? There are so many different teachers and schools available. Are not all Hatha Yoga schools similar? Yoga has a prefix to it, which is burgeoning these days.

A12

Every school is different. So how do we know which is the correct one? Considering the human body, only certain rules can work. Relief for

certain problems can be obtained from some methods, but when we consider serious, mainstream, hard-core medical disorders like prolapsed disc with nerve root compression, Cardiomyopathy, Glaucoma, ruptured Achilles’ tendon and cruciate ligaments etc. in my clinical experience, **“Iyengar Yoga” is one of the best.** Of this I have no doubt what so ever. I have examined patients treated for such ailments by various schools and have **not found significant clinical improvement.** This is my objective opinion as a physician without any conflicting interests.

Whatever method is used, we need to see if **the relevant clinical parameters are improving and** whether the body internally is being compressed or massaged in the **optimum manner.** For example if Setu Bandha Sarvangasana is done according to any conceived geometry, one can observe the heart struggling to beat (by an echo study). A correct alignment changes the pump parameters (for pump parameter readings on this Asana, please refer to **A Matter of Health** in the section on effects of Asanas). We need to see and know what is happening inside the body and optimize this. This requires knowledge of the body physiology as well.

God has provided Yoga to be practised in a certain manner to secure certain benefits. If your quest is for fast, endurance or power movements incorporated into Yoga then such hybrid systems will secure for you not the pure benefits of Yoga but something of an amalgam. You need to define an end-point for yourself-pure Yoga physiology or effects of amalgamated systems. The aim of Yoga is to quiet the body and pacify the nerves-not making this system a fast, pulse pounding, physical exercise, which unfortunately happened now.

Q13

How does Yoga score over Aerobics, dance, work-outs, Swimming, Jogging, walking and other forms of accepted exercise? Can Yoga co-exist with other forms of exercise?

A13

This is detailed in *A Matter of Health*. To reiterate, Yoga is cellular silence while other exercises are cellular noise. Yoga helps one recuperate from fatigue while other systems cannot achieve this. Yoga increases the battery charge in our body while other systems drain it. We can combine other exercises with Yoga. However, practice Yoga first, or muscle fatigue and cramps can occur. If time permits, practice Yoga and the other exercises separately.

Q14

Can Yoga prevent aging or is it a tall claim?

A14

God is the only entity who can remain young mentally and physically. Aging is mental, physical and physiological. If we mentally stagnate, aging has begun. If the body movements are shaky with trepidation, physical aging has affected the person. Negative thoughts are also part of the aging process. It is not adequate to motivate ourselves positively, when we ***are*** positive, no psyching is necessary.

Aging can be healthier with an exercise regimen like Yoga, which prevents accumulation of stress metabolites and always keeps the physiology supple. Inversions are particularly valuable in this aspect but if overdone, the opposite effect will occur.

Medically, ***Yoga maintains the body parameters to a ripe old age*** (as the nature of yogic exercise is unlike other systems), which is anti-aging. The energy levels of the practitioner never decline even at the age of 80 years and above. Sri BKS Iyengar is a case in point and the dynamism in his body is obvious. We can age gracefully even though aging cannot be prevented. Refer to the chapter on Aging and Yoga in *A Matter of Health*.

Q15

Does practice of Yoga prevent obese children from gaining weight?

A15

Children cannot lose weight with Yoga as with aerobic activity. Yet they can maintain the body weight that they have, at the start of Yoga practice. All Asanas are beneficial for calorie loss but intense practice is required. An obese child may not turn out to be slim with Yoga. Diet control is very crucial.

Q16

Are there any side effects from “too much of Yoga” or exercise?

A16

Any exercise indulged in excess has a side effect, which is the “***overtraining syndrome***”. Yoga is no exception to this situation. Some of the symptoms of excessive exercise or too much Yoga practice are fatigue, loss of sleep, irritability, and increase in blood pressure, cellular dehydration and premature aging. For example, if you practice Headstand for three hours as is advised a school of Yoga, the brain and circulatory system will be damaged.

Q17

Would you say that Yoga is a spiritual exercise that arises from the physical? If so, what is the attitude of people from other faiths? Should it not transcend all barriers?

A17

These are very good questions. It is a spiritual exercise starting from the body and ending with the soul. According to Hindu philosophy, the body is the vehicle of the soul. The body is kept in excellent condition to enable us to reach the Divine by turning to spiritual paths. However, few realize this. Yoga is not to be adopted as a need or necessity, but something that is to be part of our daily life. I have treated people of different faiths and have faced no problem at all. Yoga is not a religion, ***it is life*** and all can embrace it. It does go beyond all barriers.

Q18

Teaching Yoga appears to have become a lucrative business. What should an individual consider in trying to find the right teacher?

A18

With the popularity of Yoga spreading throughout the world, there is also the innate danger of people attempting to teach Yoga without actually being fully trained to use it as therapeutic tool. Verify the credentials of the teacher before signing up for classes. However, if you are a patient and therapeutic Yoga is your need, you will benefit in learning it from a medical practitioner who is trained to understand the physiology of the human body and can thus be watchful of the effects of Yoga if performed incorrectly.

Hatha Yoga is not a money spinning business in the East as much as it is in the West. Consult professionals in the field to get correct guidance for health problems. Many teachers spread incorrect concepts. Sadly, ego has engulfed many teachers who fail to rectify their teachings.

Q19

Can Yoga coexist with other treatment modalities? Why is there this sudden popularity of Yoga amongst doctors?

A19

Yoga has not become popular overnight. This has been primarily patient driven in their quest for relief from ailments and their desire to avoid prolonged medication or the harmful effects of surgery. It can easily coexist with any system as a supplement or complement. It can be a stand-alone tool for preventative or curative health also. In order to enlighten patients on alternative or complimentary systems, doctors have to educate themselves. Increasingly, medical education is recognizing the benefits of treatment that is integrative and non-invasive in nature.

Sri BKS Iyengar has been responsible for Yoga being a medical tool by the unique introduction of

props. Until then, Yoga was only a palliative or an accessory to treatment. With his innovative approach, it can be a primary modality of treatment.

Q20

How do we safeguard the health of the future generation? How can we influence them to take the right action?

A20

Anyone who learns Yoga should pass on this wealth to the children in the family. Yoga can be started at the age of five along with guidelines for disciplined living (without regimentation) to set the child's life in order. Children need guidance up to a certain age and the phrase "catch them young" is appropriate. Parents need to set an example by practicing Yoga. If Yoga can be incorporated into our lives, perhaps as a family activity, children will soon consider it a part of their lives also and begin developing healthy habits. Bhagawan Sri Sathya Sai Baba often says, "There are no bad children, only bad parents". How true!

Q21

Can we rely on Yoga to treat (non-psychosomatic) health disorders without recourse to medication or surgery?

A21

Yoga can work independently but must be commenced as early as possible (this situation unfortunately is utopian). Yoga can arrest the progression of the disease if it cannot reverse it. The advice depends on the disease and the individual patient. The same disorder in two patients may require different approaches. Not all patients with high blood pressure require medication. Others may require a combination of medication and Yoga.

Surgery may be necessary in a patient with coronary blockage while only Yoga may suffice in another and the third patient may require combination therapy.

Q22

How will I know when I have really mastered any given Asana?

A22

If the relevant points for the Asana are observed with ease during the recommended duration of that pose, then you have mastered that Asana. The relevant points of perfection need to be achieved without a sense of duality. To explain in simple terms, if the Asana is difficult, the body and mind do not feel harmonious. For example, sitting in a chair does not make us feel any different, as it is a natural pose. Attempting Headstand for the first time makes us feel nervous and there is a sense of trepidation. Absence of this trepidation is ***lack of duality*** in a pose. Then, whether we are seated in a chair or standing upside down makes no difference. Both feel natural.

Q23

I have often heard that Yoga practitioners should eat ghee (clarified butter). Is this correct and will it improve Yoga practice?

A23

The individual response of the liver in converting this into LDL cholesterol needs to be considered. Melt the ghee and consume it immediately in small amounts. Ghee is part of the daily Indian cuisine. According to Ayurvedic logic, it cools the system. Ghee does help in lubrication of joints and muscles and is beneficial to the practice of Yoga. ***Ghee is not the cause of high cholesterol but the lack of physical activity that accompanies it.*** Our ancestors had enough physical activity and never suffered coronary diseases the way it is rampant today (though increasing stress and pollution influence this situation).

Q24

Sometimes we get breathless during or after a Yoga session. Is this situation tenable?

A24

It is not improper to get breathless while exercising or afterward. It happens to beginners and Asanas like Dog pose and Uttanasana restore normalcy. A slight stimulation of the system does no harm. However, as the poses become easy, breathlessness stops and lightness is felt in the lungs after every Asana. Everyone can and should achieve this level of fitness. Asana practice provokes deep breathing. In some Asanas thoracic breathing predominates, in others it is abdominal. This prepares us for practice of Pranayama.

If the brain acts as a main source of action, then breathlessness predominates. If intelligence were to act, restfulness will result. This is applicable especially while practicing Pranayama.

Q25

If I have a problem in the groin during Yoga practice, should I just focus all my efforts on that problem or work on other parts of my body as well?

A25

It is important to abolish this problem by specific Asanas and then proceed to general practice, else the pain will never stop. Standing poses are invaluable to rectify this disorder. Twisting poses have to be done gently to relieve the pain.

Q26

Metaphysically, during Asana practice, does the mind take precedence and then the Asana, or vice versa?

A26

We cannot define where the body ends and the mind begins, as they are equally important. In a certain sense, the mind takes priority to determine the nature of practice. It is up to us to determine the quality of Asana practice. Hatha Vidya (Ha and Tha represent the positive and negative energy, Vidya = knowledge) is conquest of will; it is the art of using our will power to

master the Asanas. Hatha Vidya is also the art of using the needle of consciousness to penetrate the body and lift us to healthier levels of existence. This enables refreshing Asana practice reinforcing the mind to perform better the next time.

Q27

What role does the mind play in the practice of Asanas and Pranayama and with respect to Yoga in general? Does the mind help us master the poses?

A27

Bhagawan Sri Sathya Sai Baba often says *Yogah citta vrtti nirodaha*-the aim of Yoga is the restraint of the fluctuations of consciousness (citta = mind stuff, vrtti = fluctuations, nirodaha = restraint).

The mind is responsible for the good and bad in life. A correct decision reaps benefits. Patanjali has said “*atha yoganusasanam*” (Iyengar, *Samadhi Pada I.1*), *atha* = now, *Anusasanam* = conduct-now, the discipline of Yoga is explained. A code of conduct is primarily responsible for the fruits of action.

Motivated persons master Asanas faster though there may be a danger of pushing themselves recklessly. Conversely, we have lethargic persons who take a long time to achieve their goals. Apart from Divine Grace, (the key factor), our own actions are necessary. Yoga practice is not for a select few. With time, everyone can master most of the poses and secure health benefits.

Regarding practice of Asanas, surrender to God and self-confidence will help us achieve the goal of mastering the subject to a reasonable extent.

Bhagawan Sri Sathya Sai Baba says, “Self confidence leads to self realization”. Without this, we can achieve little. Asana practice requires a certain toughness of mind. In this context, excelling at any physical challenge requires toughness of the psyche. Every exercise is task specific. For example, a mountain climber may still find it difficult to master Asanas and Pranayama.

Unquestionably, a Yoga practitioner, due to the orientation given by Yoga philosophy has maturity in mind and can master many physical challenges. Swami Vivekananda said “Arise, awake, stop not till the goal is reached”. This is not just motivation, but consciously, relentlessly, pursuing the path to reach the goal.

To give an example, in order to master *Paschimottanasana* (a seated forward bend), initially, one must bear the pain in the hamstring muscles. To master back bends, one must be able to bear the pain in the lumbar region. Does Yoga motivate one or does a motivated person master Yoga? I feel it is the latter. By performing the Asanas and Pranayama properly, we feel the benefits, ***which in turn reinforce*** us to stick to the path. However, a Yoga practitioner who merely masters Asanas without attending to mental evolution has achieved little.

We may master Asanas and Pranayama but not be able to face situations in life. Life is not important, living properly is valuable. Bhagawan Sri Sathya Sai Baba constantly says that all education is of no value unless we are able to face life with its adversities. It has been seen that many Yoga practitioners behave like “any other person” when faced with problematic situations in life though Yoga philosophy is supposed to have made them more stress resistant.

Each Asana has a different effect on the mind and brain. When we practice forward bending Asanas, calmness results. Back bends have a similar effect but are full of vibrancy. However, this is not the only part of the story. If we are to achieve the effect of a back bend, we must be aggressive to render the pose well as these poses need tenacity.

A basic level of motivation is necessary for a depressed person to begin performing Asanas with or without props. Therefore, the mind is the first factor under consideration. The decision to do, to break the ice somewhere is the essence of Yoga. For a person who has not experienced the benefits of Yoga, there are no previous influences of yogic practices to motivate them to practice.

Hence, a conscious attempt at decision-making is important.

Yoga is the art of using the mind, intelligence (or whatever one may call it), to practice Asanas for physiological health and mental vibrancy. Yoga is also the art of using the philosophical guidelines for mental evolution. Both are equally important. Do we begin with the body or the mind? Matter is formed from energy; and energy animates matter.

If Asanas and Pranayama were enough for mental evolution, Sage Patanjali would not have mentioned the last four steps in his treatise namely pratyahara, dharana, dhyana and samadhi (introspectiveness, concentration, meditation and an ultimate state of undisturbed equanimity). The Supreme can transform the mind of the practitioner without the need for recourse to Yoga philosophy or Asana practice.

Happiness or worry is based on our feelings. If you consider the body to be a cause for worry, it will be so. On the other hand, if you consider it as sacred, it will be a source of happiness for you. Arogya (health) and Ananda (happiness) go hand in hand. A sense of elation and exultation keeps the body free from disease.

Bhagawan Sri Sathya Sai Baba

Q28

Is it advisable to practice Yoga irrespective of illnesses or physical malfunction? Will consistent and determined practice cure the ailment?

A28

This depends on the situation. For example if we have continuous nausea and vomiting, there will be no energy even for passive Yoga poses. If we still try, this becomes *Yoga fundamentalism*. We must understand when not to practice Yoga.

Give the body rest, which is very valuable. Imagine a situation if one is in the ICU and Yoga practice is attempted! This is blind application

of Yoga and a confused understanding of the human body. If we have to forgo Yoga practice for some time, the body will not degenerate! Moreover, practitioners should understand that it is the *Divine that gives the benefits of Yoga*, not just the individual effort. The Grace of God will maintain the body and mind even in the period that one is not able to practice Yoga.

Q29

Do we need to heat the room to help Asana practice? Is this really a healthy and necessary manner of practice?

A29

Medically, this is a *misconception*. Yoga reduces sympathetic stress on the body. *Practising in a heated room increases the strain on the sympathetic nervous system*. The harmful effects of such practices will be felt only after years of practice.

Such practices are claimed to release toxic metabolites from the body but this is not a safe method. In addition, toxin elimination is not the only aim of Yoga. Yoga done in this manner will eventually make the practitioner look haggard.

Imagine runners, tennis players, and other athletes trying to match the interior to the exterior in different parts of the world at different times of the year and different times of the day! They would never succeed in training routines. The human body has its own methods of adjustment to the environment and as exercise begins to last longer, the body automatically warms up.

Yoga is slow, there is a sequence to practice, the body is gradually brought to the maximum level of performance, and hence heating the room is not necessary. This is a great damage to the yogic science. There is no harm in maintaining the room temperature to a moderate level of comfort in winter but *to depend on climate control for Yoga to be practiced is incorrect*. We would never master any pose if we depend on the weather! The very idea of correct Yoga practice is to bring warm blood to dull areas. Mastery of

Yoga lies in the effort and correct technique and not in the atmospheric influences. If it were so, then aspiring yogis in the Himalayas would have never become “yogis”!

Q30

Sometimes our body and mind feel sluggish in the early mornings (5 a.m.). Is it correct to practice Headstand for five to ten minutes before meditation and chanting (twenty-five minutes) then Pranayama (twenty-twenty five minutes)? Should we avoid any specific variety of Pranayama practice after Headstand?

A30

The Asana sequence is incorrect. Firstly, you should not just practice Headstand without any Asana following this. The nostrils are not sharp after Headstand unless you practice variations. Hence, Shoulderstand is important. Practice Pranayama after Shoulderstand.

It is better to complete meditation and chanting before the practice of Asanas. If you feel dull on waking, practice jumping sequences of Asanas to invigorate the system. The easier routine would be to retire early the previous night (9 p.m.-9.30 p.m.) to prevent dullness the next morning. It is not the number of hours we sleep though that refreshes us; it is when we sleep that matters. The biorhythm in the body (body-clock) should not be disturbed. The body is never the same each day. Hence, we need to act according to that situation and a mechanical practice of Asanas will not be beneficial. Uttanasana done with the head lifted up and the spine intensely stretched in a concave manner will awaken the sleepy person.

Q31

Should we take a warm shower before or after Asana practice?

A31

To maintain the body muscles in a steady manner while practicing Asanas after a shower is very tiresome because of the temperature changes

induced. Finish the shower (warm or cold) 10-15 minutes after Yoga or else muscle cramps could occur. Muscles can fatigue easily with heat.

Q32

In India, it seems a common practice to include an “oil bath” (not an oil massage) in a weekly routine. Is there a scientific basis to this?

A32

There is scientific validity. Even though many conventionally trained physicians may not agree with this ancient practice, according to Ayurveda, the warm sesame oil applied to the skin seeps and opens the pores and excess heat from the body is dissipated. The body also feels relaxed. The benefits do not accrue if the oil is not warmed. Moreover, this massages the muscles and abolishes fatigue. Circulation of body fluids is enhanced. This is invaluable for tropical climates. According to Ayurveda to make the body cool, heat in the body has to be countered with “heat”.

When one is thirsty, cold water actually accentuates thirst. Water at room temperature relieves the same. This is one rationale for the use of mud pots in India to store water. The pores in the mud pot aerate the water making it cool but not cold.

Q33

Is there a relationship between the practice of Yoga and the use of the “oil bath”?

A33

Yoga practice can generate an increase in the core body temperature. Habitual oil bath may neutralize this. Warm Sesame oil lubricates the muscles and joints. Complete the warm bath with a cold shower to cool the system. Practicing Savasana for five to ten minutes under a fan to further cool the body is beneficial and necessary. This will avoid fatigue in the latter part of the day. For persons living in colder areas, the use of a fan may be required depending on the bodily reactions of the individual.

Q34

What kind of Yoga practice is advisable on the day of an oil bath?

A34

A strenuous Yoga session is not conducive; particularly strenuous back bend practice. Pranayama can be practiced that morning.

Q35

Is the use of the Sauna or Jacuzzi beneficial? How do we alter practice of Yoga on such days?

A35

Mere use of hot water is insufficient. The use of any soothing oil (preferably Sesame) is advantageous. The rules of Yoga practice following an oil bath are applicable here.

Q36

It is recommended that we finish Asana practice by 7.30 p.m. in the evening, in order to rest the body. If we are unable to practice Pranayama early in the morning or before lunch, can we do so before dinner?

A36

Pranayama can be practiced around 7.30 p.m. One could even practice Pranayama at 9 p.m. but the kind of practice varies from that done early morning. Early morning practice will involve deep and strong inhalation and exhalation with or without breath retention. Late evening practice involves short inhalations and deep exhalations that help sleep. Medically, an early dinner is recommended (7.00-7.30 p.m.) and hence we should practice Pranayama before this.

Q37

Is it correct to practice Asanas on a bare floor? Can Asanas be done in a closed room especially with carpets lining the floor?

A37

Standing poses, seated forward bends and back bends can be done on a non-skid mat. If the feet do not slip, standing poses and forward bends

can be practiced on the bare floor. Every person's skin is different and the texture of the floor may vary. A wooden floor suits many people. Head and Shoulderstand require blankets as do the balancing poses.

It is possible that after a strenuous Yoga session, one can suffer a cramp in the body muscles in Savasana, as the floor may be cooler. All this depends on the sensitivity of the skin. If the entire back does not touch the floor, the chance of a "catch" is less.

Regarding the practice of Yoga in a carpeted room, a main concern is the irritation to the nasal tract by the carpet dander. This assumes importance especially during practice of inversions and seated forward bends. Hence, it is healthier to practice Asanas in a clean open room sans carpets. In cold regions, make sure that at some time during the day, the windows are opened for short periods (unless it is snowing), to allow fresh air to enter.

Q38

Should we practice Asanas dynamically or in a static manner?

A38

What is dynamism? Is it mere physical movement or vibrancy in stillness? This has to be understood. Yoga can be practiced both ways depending on the kind of Asana. Do not practice Headstand and Shoulderstand repetitively in a consecutive manner.

If you retain the pose for a few seconds and repeat it this is dynamism in execution. On the other hand, if the retention time is half a minute or more, and you repeat it, this is not dynamic. Internally, ***all Asanas are dynamic*** as the cells have to be kept alert all the time. Mechanical repetition results in dullness in the system.

Children can practice all standing poses; forward and back bends dynamically to prevent their body from being overstretched while adults should practice these in a static manner. There are some poses in a certain combination that

adults can do in a dynamic fashion for example, Dog pose followed by Urdhva Mukha, back to Dog pose and into Uttanasana in a sequence.

Balancing poses can be done dynamically. Jumping from Dog pose to Bakasana is yogic aerobic activity and fun too. One cannot afford to neglect this aspect. Over the years, practitioners of Yoga tend to become serious without a quality of alacrity.

According to Sri Aurobindo, the power of Yoga lies in its stillness. Medically, static exercises have a different effect on body haemodynamics. If one practices Tadasana on the footrest, the peak systolic velocity in the popliteal artery increases to twice the basal value. However, this varies with every Asana with a unique pattern for each pose. When Asanas are done dynamically, the physiological changes could parallel the usual moderate intensity aerobic work-outs. Even with the dynamic Yoga work-outs, the pulse rate never reaches the level of high intensity aerobic activity. A good example is Viparita Chakrasana wherein the pulse rate can reach a maximum of 120. Yoga never advocates extremes of practice.

Q39

Is it possible to avoid injuries in Yoga practice?

A39

Yoga is not risky business! Injuries occur if we do not follow the rules of the game. Though standing and walking are simple tasks for the human body, at times we do slip and fall. Do we then avoid standing or walking? Minor problems may occur with any physical activity, but this is part of a learning process.

With correct methods practice and understanding, we can achieve a zero level injury with any sport or physical exercise including Yoga. The kind of injury that occurs with Yoga is not comparable to sporting activities like Pole Vault, Shot-Put throw, Javelin, Boxing etc. Any Yoga induced “injury” will heal faster as it is not a jerky system of exercise. The practitioner must be diligent, committed and intelligent to achieve this.

Q40

Why is it so important to maintain equal intercostal spacing in lateral bends and twisting poses?

A40

Spacing is necessary for all Asanas else the organs will be pressurized and frequent catches may occur. I have explained this in the latter part of this book with the ultrasound scans. The effect is easily observable on the Gall Bladder. The correct practice of twisting poses aligns the Gall Bladder properly during Asana practice.

Q41

Alignment being a key factor in Yoga, is it then prudent to avoid practicing Asanas? We might preclude injuries to ourselves.

A41

This is a most basic query. May I counter this by stating that we could trip and fall when walking, or tear muscles when Jogging-the list can go on. We must understand that everything has a method and Yoga is no exception. If we observe the correct method, there is no cause for concern. The geometric nature of the Asanas requires careful understanding of the movements while practicing them. Intricate adjustments in Yoga postures are taught when the practitioner is mature enough to understand the subject.

Q42

Do Asanas have only positive effects on the body? Are there any negative side effects of which we should be aware?

A42

At the outset why consider Asanas? Sitting erect for hours at a stretch reduces the blood flow in the gluteal area, however the body is built to adapt to this situation. We are never aware of the effects of habitual actions of the human body. Asanas do have “positive” and “negative” effects. We need to balance this by a proper sequence in practice. The intensity of such effects is more prominent with age. To give an example,

in Headstand the trade-off is that there is a preponderance of blood flow to the head at the cost of the lower extremities (though the blood flow in the main popliteal artery increases) but this is beneficial as the venous drainage improves in the legs at the same time. While practicing Urdhva Dhanurasana, the heart is squeezed for a period making it “ischemic” and this is countered by the principle of reactive hyperaemia (the blood flow increases in an area that has previously been ischemic due to mechanical pressure).

Any exercise can be both beneficial and “harmful” to the body. During a marathon, the blood is shunted from non-essential areas to the vital parts of the body. As the organ suffers a temporary “loss” owing to the shunting of flow, this is not “beneficial”. However, this is the body’s internal adjustment to exercise. We need to understand the need for precise practice, as Yoga is unique. When seated forward bends are practiced in excess, mental quietness, a beneficial property of these poses will be replaced by dullness. If back bends are overdone, mental irritability will increase. Moderation and balance in Asana practice is the key to health.

Q43

What is the possible order of Asana practice? There are different schools of thought on this.

A43

We can use several sequences. This depends on several factors such as time availability, age, current and previous health status. It also depends on what we focus on.

If we need to master the standing poses, the sequence is different. When we need to master backward bending poses, the order varies. **Headstand always precedes Shoulderstand** for specific reasons (there are exceptions). Seated forward bends, standing and back bends can be done in between Headstand and Shoulderstand. Practice twisting postures before or after inversions.

It is important to note whether a convex Asana follows a concave pose. This could cause strain. If we practice Ustrasana followed by Paschimottanasana, we may strain the lower back. However, if we practice Marichyasana III first, Paschimottanasana is easier to practice as the spine is of a convex shape in both. Dog pose is neither a forward nor a back bend. It can be introduced into many sequences. There are many such permutations and we need to be clear with the concept on pose and counter pose in Yoga practice. This I have detailed in ***A Matter of Health***.

We must also be aware of the mechanics of Asanas. There are many misconceptions in the biomechanics of Asana practice. For e.g. there is a widespread concept that while ***in Headstand the weight of the body falls on the head***. This is a fallacy. Most of the weight falls on the forearms and the trapezius muscles. Like wise when we practice Shoulderstand, the weight is not on the neck alone but on the shoulders too, particularly on the trapezius muscles.

Q44

Is Yoga useful for rehabilitation of smokers and alcoholics?

A44

As a clinician, I feel that if the mind is defocused, and then energy restored to the organs, de-addiction is easier. Yoga is a way of defocusing and concentrating the energy in a different area. The chemical change brought by habitual Yoga practice may make a difference to the addict. If the addict cannot practice Yoga for any reason, we can secure the desired result by a change in the environment (association memories play a role). This was the method prescribed by the sages-change of habitat and association with the good and wise (satsang).

Q45

Is there an age restriction to the practice of Asanas? Is there a hazard especially for Asanas like head and Shoulderstand?

A45

Medically, there is no danger of any sort. Do understand the following points:

- 1) A first time medical screening is necessary and structuring the Asana practice for the person is essential.
- 2) Instructions on the intensity of effort made to master the Asanas are highly individualized. This is very important.
- 3) The above depends on the mental make up, age and the body habitus of the person concerned.
- 4) The *Hatha Yoga Pradipika* has clearly stated that there is no age bar to practicing Yoga so that the practitioner becomes fitter to practice Yoga.

Regarding Headstand and Shoulderstand there is no danger to the practitioner if the right preparatory Asanas are done prior to practice. I have provided Doppler scans in this book (and in *A Matter of Health*) to highlight that in a normal person, *the velocity of blood flow in the cerebral and retinal arteries does not* increase in Headstand or Shoulderstand. Hence, anyone can learn inversions with proper preparation and sequencing. Many other Asanas should be learnt prior to attempting inversions.

The beneficial poses are Uttanasana, Dog pose, and cross-legged forward bend and supported seated forward bends. These are necessary to prepare the body for inversions in the geriatric age group.

To clarify, if a person in the age group of 75-80 wishes to learn Headstand I would ensure that the muscles of the upper body are strong. Next, I would determine the mental make up to assess the possible effort-output to succeed in the performance of the Asana. Then I would screen the vascular “tree” in the whole body for atherosclerosis and rule out Glaucoma and high blood pressure. A methodical medically based approach easily prevents potential problems.

Q46

Is it incorrect for a Yoga practitioner to be overweight? Is it adequate if they are internally fit?

A46

Medically, there is an optimum weight in proportion to height and sex of the person. The BMI (body mass index) should not exceed a certain level. Fitness includes this facet that many overlook. Being overweight makes it difficult to perform Asanas. Effort must be made to prevent weight gain bearing in mind that *Yoga cannot help in weight reduction* beyond a point. Overweight individuals may have excess fat inside the body (deposited on the organs) and this is unhealthy. Yoga can prevent this accumulation and is thus extremely beneficial for obese persons.

Many Yoga practitioners condemn aerobic exercises. These are valuable to lose weight, albeit with “healthy” side effects. Yoga always stresses on *internal fitness along with the external*. Being slim is “external fitness”.

Bodily health is essential until the Atma (Self) is realized. Although the body is transient, it should be properly cared for because the body enshrines the Divine Atma.

Bhagawan Sri Sathya Sai Baba

Q47

Is Yoga beneficial for dehydration?

A47

I presume that this is physiological and not a pathological state of dehydration. In pathological states, fluid is lost due to repeated vomiting, diarrhoea, and through other avenues. These require appropriate and immediate medical attention.

Passive postures with props, seated forward bends with support, Viparita Karani and half Halasana are beneficial if one feels “dehydrated” after travel in a desert or a hot country. However, *fluid replenishment* is essential and without this, no Asana will help.

Q48

Does Yoga practice change with altitude?

A48

The frigid temperatures on high altitudes require practice of Handstand and Elbow balance followed by dynamic sequences of standing poses. Inversions are invaluable. On the plains, even in winter, the strain is lessened due to the greenhouse effect of population and buildings. Conversely, with elevation in temperature, seated forward bends followed by inversions with the bandage are necessary both at high altitudes and at sea level.

Q49

Is it correct if the tongue rests naturally on the roof of the palate while practicing Asanas?

A49

I would recommend that the tongue be consciously placed on the floor of the mouth during Asana and Pranayama practice. If this golden rule is broken, systemic blood pressure could rise and the practitioner will be unaware of this.

Q50

Can we practice Yoga during pyrexia (fever)?

A50

The best approach is to rest and treat the cause of fever. Unless one knows how to practice, it is better avoided. The body needs rest at times. Some Asanas could be practiced passively but this is flogging the body. Savasana is of great value at this point.

Q51

Why do some people heal rapidly while others with the same illness and basic health profile heal slowly or not heal at all?

A51

This is difficult to explain. It is the working of the life force inside, and to an extent, our attitudes too. The energy that animates all beings is responsible for this. According to Hindu philosophy and Yoga metaphysics, illness and recovery at different times is also part of karma.

Q52

It is often said that Yoga is a highly “geometric” science-could you clarify? Is there an ideal geometry for the postures that everyone should achieve or does it depend on the individual?

A52

Each Asana is an icon. The different shapes of the Asanas need to be achieved with precision. We should not distort the shape of any Asana. This will reflect as an asymmetric pressure on the inner organs, which can be confirmed by ultrasound. To give an example-bodies of different shapes and sizes can achieve the same end pose with a proportion relative to their height and girth while practicing Trikonasana.

In Kapotasana, we must stretch the lumbar and dorsal spine. The maximum stretch for any person depends on the height and proportions of the leg length to the spine. All individuals can attain the points needed for an Asana, which include a parallel orientation of the spine, relaxed groins, maximum stretch. *Sri Iyengar says “The length of the mind should parallel the frame of the body in the attempted Asana”*. To put it in a simple manner, feel the “inner” expanse of an Asana to a maximum extent.

Q53

Can we regard Yoga as a natural “anti-inflammatory” agent as it reduces pain in various situations?

A53

Yoga is a wonderful “anti-inflammatory agent”. It works unlike NSAIDS (nonsteroidal anti-inflammatory drugs) and promotes warm, fresh blood flow into the painful areas reducing the congestion and edema without the attending side effects. Nevertheless, Yoga cannot be used for acute disabling pain (there are exceptions) when a muscle relaxant may be essential. The method of practice varies according to the medical condition and the habitus of the patient.

Q54

Is it correct to experience numbness in parts of the body during Yoga practice?

A54

This is incorrect. It means that one has over done the posture (with prolonged timing) or contracted the nerves and blood vessels due to wrong alignment. We must remember the need for geometry in Yoga. This is yama and niyama in Asana practice.

Q55

At what age can a child begin practice of Hatha Yoga?

A55

Children can attempt learning Yoga at the age of five. However, they should never retain the pose for a prolonged period (as adults do), for the cartilaginous junctions at the ends of growing bones can be damaged. Around or after puberty, they can work harder to master the postures. Children should practice most Yoga postures in a dynamic manner (except inversions). Pranayama should be started only around or after puberty, else the facial tissues will age prematurely.

Q56

Could you clarify on what constitute “neutral poses” in Yoga?

A56

These are neither back nor forward bends. A good example is Dog pose. Headstand is neutral as it is a “reverse Tadasana”. Neutral poses are transitional Asanas to be used to progress from one category to another that is dissimilar. Neutral poses are the *real* “counter poses” and are like the neutral gear of an automobile, which cannot be dispensed with. Neutral poses help the body recover from the strain of other poses.

Q57

Is it necessary that the last Asana in a sequence should be close to our activity that follows the practice session?

A57

Not necessarily-it could be the opposite. If one were to be sitting for a long time post Yoga, the seated postures if done last are likely to restrict the circulation further. On the other hand, if we conclude with a standing pose, the circulation is likely to be better post Yoga.

Do understand that a set of poses will help the succeeding pose to be performed better. Standing poses help the performance of seated poses as the hip and leg muscles are well stretched. For example, Virasana is easier after standing poses as the quadriceps and hamstrings are well elasticized.

Q58

Why should Asana practice emphasize the spinal area?

A58

The spine is the “feeder” of nervous and circulatory energy to the body. Hence, proper alignment of the spine in postures is very important. We have to exercise all parts of the body consciously in different Asanas. There is no choice! The very speciality of Yoga is that different parts of the body are toned simultaneously.

Q59

Can we use props for a prolonged period during Yoga practice? Does this not become a sort of crutch in the end?

A59

Many healthy individuals tend to stick to props as a routine. Props teach alignment; but having learnt, we must quickly discard them. This period varies for each person. Patients too, should move away from props as early as possible (if the medical condition permits). We can experiment with props to discover newer techniques for patients and to improve techniques for routine practice (to get a correct perspective), but not get dependent on them. We will not achieve the optimum effects of a pose if we use props continually (in general).

Q60

Why do patients practice passive Yoga postures?

A60

Passive movements are easier, safer, provide quicker relief and the tendency to commit mistakes are less. Passive movements also give confidence to the patient to practice Yoga. However, we can use active movements depending on the condition and teach the patient normal methods as early as possible.

Q61

What special effect do resting poses (held for prolonged periods with support) have in treating stress? Would not a good Ashtanga sequence (active and dynamic) help?

A61

Stress is both physical and psychological. Asanas with the aid of props will benefit physical stress (fatigue). The psyche can be handled by learning to make an *attitudinal shift*. Half Halasana on a prop with the bandage is invaluable for relieving mental strain after a demanding day.

If you are tired, obviously, dynamic poses are difficult. Resting poses recuperate the nervous system faster than active poses. Alternatively, sleep if you are tired. *Take a break from the routine, laze around, life is not a rigid path! Neither is Yoga an inflexible, to-be-done routine.*

Q62

Should Asana practice follow Pranayama or vice versa?

A62

There is no rigid rule. Ideally, practice Pranayama in the early morning but if your life style precludes this, practice at any time provided the stomach is empty. If a mild Asana sequence is structured, practice Pranayama after a break. If Asana practice is strenuous, then it is better that Pranayama precedes it. Individuals have to alter Yoga to suit their lifestyle.

Q63

A leading Yoga journal published an extensive article on Asana practice for every decade of life (Yoga for people in their 20's, 30's, 40's, and 50's and beyond). If we maintain good health throughout, do we need a different practice sequence for every decade of life?

A63

If we follow this concept, we would lose the mastery of many Asanas as age advances! According to medical logic, we do not need to follow such a teaching. Yoga practice keeps improving according to the capacity at the start. *Yoga is the only exercise whose performance can improve with age*-the rest dwindle. Sri BKS Iyengar is a classic example who has been constantly improving his practice though he is 85 years of age.

Hence, there is no need for changing the practice according to the age but there is a need for structuring a practice sequence for the person *initially*.

Q64

We hear so much about the benefits of antioxidants these days. Can Yoga offer anything in this area?

A64

Yoga is the finest "antioxidant" but oral supplementation may be necessary for all of us due to the pollution of the environment. Yoga being a system of auto massage, removes cellular toxins efficiently without side effects. All Asanas are important for this purpose.

Q65

There are many methods of Asana practice with a new prefix added to the word Yoga. Are these acceptable or are they individual modifications and fancies?

A65

One has to see if the teaching *benefits the body and its ailments*. If not, the method is incorrect.

It is rather shallow thinking to add such new terms to Yoga, which helps market the subject or makes us feel that we have justified the prefix in any way. ***Yoga is Yoga.*** One must do one's duty sincerely and the subject will reach everywhere.

Q66

Is it not necessary to introduce Yoga to children in schools; we know that this exists but talking to the children makes a difference.

A66

It is high time that Yoga is introduced in Western schools. This will provide tremendous benefits both in the psychological and physiological spheres. This will help reduce juvenile violence in schools. Time permitting, I meet children and motivate them to practice Yoga. We discuss the importance of quietness in the classroom. Mere Yoga practice is not enough. Value based interactions are needed. ***Unless parents cooperate, we cannot modify poor behaviour.***

Issues on Pranayama:

If the chest is the mother and the air is the child, at inhalation, the mother lets her child come to her, and at exhalation, she lets him go without following him but still protecting him.

BKS Iyengar

Q67

Is the practice of Pranayama necessary?

A67

Pranayama makes the lungs ventilate effectively. Asanas cannot substitute the benefits provided by Pranayama on the lungs. The alveoli (lung cells) are relaxed by pranayamic work-outs. The energy from the atmosphere is circulated in the body as Pranayama silences the nerves. A minimum practice session of 15 minutes a day is necessary. The effect of Pranayama on the mind is different from that of Asanas. The mind moves to every corner in Asana practice, while during Pranayama practice, it remains "single pointed" in refining

the ingoing and outgoing breath. We can easily make out the difference. However, we must not rely solely on Pranayama to make us calm and silent. That is only an aid. All efforts are in vain unless we understand our mind. Pranayama is a physiological tool to a person who can remain silent when the situation demands (there are many who can do so without recourse to Yoga).

Q68

Should we practice Pranayama four times a day as prescribed in the yogic texts?

A68

This may be ideal but impractical. How many of us will have time to do so? As already stated, a minimum of fifteen minutes is medically valuable and this can be extended to an hour. However, this depends on the Asana sequence that follows and the time available.

Q69

What are the contraindications for Pranayamic practice?

A69

Pranayama is not to be practiced under the following conditions (to name a few) such as fever, fatigue, extreme anaemia, post aerobic sessions, dehydration, indigestion, post prandially, diaphragmatic problems, and post surgically (for a period). Most of all, the mind has to be calm for Pranayama to be performed. Such a practice reinforces quietness. This may seem like the chicken and egg story.

We need to delve deep within to understand the real value of Pranayama. Please remember that Pranayama improperly done can cause dyspnoea (breathlessness) on exertion or rest, muscle pain in the chest area, strain the chambers of the heart and reduce pump efficiency, provoke nervous irritability and so on. These then become contraindications for practice!

Q70

Is there a specific sequence for Pranayama practice as with Asanas?

A70

Generally, start Pranayama practice with Ujjayi. Any other type of Pranayama can follow this on a particular day. If the practitioner is capable and the body is responsive, the practice can begin with any type of Pranayama. Master simpler Pranayamic practices like Ujjayi and Sitali before attempting Nadi Shodhana Pranayama. Regarding attempting retention of breath, (Kumbhaka), first master retention after inhalation before attempting it after exhalation. Practice Uddiyana Bandha separately. Then introduce it in Pranayama practice. Achieve Mula Bandha after inhalation retention before attempting Uddiyana Bandha with external retention.

Q71

Is it advisable for beginners to learn Pranayama supine (on bolsters)? What are the Pranayamic techniques that should not be done supine? Apart from Kumbhaka and Bandhas, which breathing technique should we master first and which ones are the most difficult?

A71

Beginners can practice Pranayama in the supine posture. With maturity in practice, they can do it seated. All pranayamic techniques except Nadi Shodhana, Sitali Pranayama and Bandhas can be practiced in the supine posture.

The simplest form is Ujjayi followed by Viloma and Anuloma Pranayama. Nadi Shodhana varieties come next. The most difficult to master is the uneven variety of breathing ratio namely Visama (uneven) Vṛtti (fluctuations, movements) Pranayama where the inhalation, exhalation and retention timings are of different ratios.

Q72

Which type of Pranayama is beneficial for health?

A72

Sama (even) Vṛtti varieties are safer and are extremely beneficial for health.

Q73

In daily practice, should meditation follow Pranayama, or vice versa?

A73

If you are oriented towards silence easily, start with meditation. The early morning period is traditionally considered as auspicious. Bhagawan Sri Sathya Sai Baba says that prayers or mantras chanted in the early morning (between 3.30 a.m. to 5 a.m. or before sunrise), will provide spiritual benefits and those done after sunrise will provide worldly benefits.

As I have mentioned before, learning to silence the mind (not forcing it) is a constant process and once this is easy meditation is a stand-alone tool. Anyone can achieve this. We should constantly think of the Supreme power, realize its omnipresence and silence will dawn automatically. Pranayama is a valuable tool to help silence the mind for those who cannot do this. However, we must try to remain in that silence for the whole day and merge in that silence automatically even without Pranayama (later).

Q74

Why is resting in Savasana mandatory after Pranayama, but not after Asana practice?

A74

Pranayama is so restful to the nervous system unlike Asanas. During Pranayama, the electrical activity of the nervous system is so soothed, and return to activity should be gentle. Hence, Savasana is mandatory to prevent a sudden change in activity. Savasana is necessary after Asana practice too, not as an escape from the fatigue of practice, but to silence the cells and for recovery from the strain of the exercise.

Asanas are physical and physiological, and we can manage without rest. This is why we can use a certain degree of force while practicing Asanas, but we should *minimise usage of force in Pranayama as we are dealing with the electrical system of the body.*

Q75

Can we practice Pranayama on the bare floor?

A75

If we are able to practice Pranayama on any surface, it shows mastery over minor irritants like temperature sensitivity of the skin to the floor. This may be a minor matter, but assumes great importance while practicing Pranayama as the mind is easily distracted by such stimuli.

Q76

Some schools instruct students to keep the chin parallel to the floor while practicing Pranayama while others advise lowering the chin to the chest. Which is correct?

A76

It is incorrect to keep the chin erect. Blood pressure fluctuations occur and in the long term, this causes nervous irritation and elevated pressure. There are volume changes in the heart while practicing Pranayama and this can be irritable to the vascular system.

Q77

Why do we emphasize the alignment of the head and neck alignment in Pranayama?

A77

The deep inhalation and exhalation causes pressure changes in the intra-cranial structures and the eyes will feel strained if the technique is improper. The volumetric changes in the heart with deep inhalation and exhalation can produce secondary nervous and circulatory reflexes, which need to be restrained. Hence, the head should be kept facing down during practice of Pranayama. The chin should rest on the sternal notch (the hollow between the collarbones).

Q78

Should the abdomen or chest inflate (during inhalation) while practicing Pranayama?

A78

Obviously, the chest has to inflate. Air should

enter the thoracic not the abdominal cavity. Atmospheric pressure influences these two cavities. Any change in these physiological processes will cause problems.

To clarify further, if the abdomen expands during inhalation, the ribs will promptly shrink and the strain will be perceived on the cardiac area. Schools of Yoga that use such a method are medically incorrect.

Q79

Can Pranayamic breathing be performed during Asana practice? Does medical science approve of this technique?

A79

As Asanas are of varied geometry, such a technique will bring forth ill effects. The thorax must expand and the lungs will follow suit. The muscular strain of Asanas precludes pranayamic breathing except when we practice Asanas on props. ***The depth of pranayamic techniques can never be achieved in Asanas.*** One needs to be conscious of this factor especially while practicing forward bending and twisting Asanas.

Q80

What are “dead spaces” in the lungs and what is the relationship between this and the practice of Pranayama?

A80

There are two kinds of “dead spaces”—physiological and anatomical. The former are those areas that have blood flowing through the tissues without oxygenation and the latter is the respiratory tree exclusive of the alveoli.

Pranayama optimizes the use of oxygen. The air is pushed into the physiological dead space and is well utilized. Hence, Pranayama lessens the physiological dead space. The anatomical dead space is used with greater efficacy (by virtue of the deep inhalation and exhalation) and the lining of these areas is well exercised by these breathing exercises.

Q81

Some schools of Yoga teach Pranayama within the first few days (for either a student or patient) but in the “Iyengar” school, this takes much longer-why?

A81

It depends on the health status. If the intercostal muscles and the spine are sufficiently toned, and the mind is receptive, the student can be taught breathing earlier. Before this elasticity is achieved, it is medically harmful to practice Pranayama though this rule is on occasion circumvented in clinical practice. I have explained the medical logic in detail in *A Matter of Health*. If the lungs cannot expand well in Asanas, we must not attempt Pranayama. Recall that Patanjali has clearly stated that Pranayama is to be attempted only after sufficient mastery of Asanas is achieved.

Q82

Why do Yoga teachers insist on only nasal breathing and not a combination of breathing through the nose and the mouth like that used in many sports?

A82

The nose filters bacteria and debris in the inhaled air. The sinuses have a function of humidification. The mouth is not meant for these functions! Hence, nasal breathing is safer. Moreover, the strain on the heart is greater with mouth breathing owing to the physical load it causes due to the volume of air inhaled (an exception is Sitali Pranayama). Nasal breathing prolongs the time for exhalation and inhalation helping better inflow of O_2 to the tissues and proper emptying of CO_2 . *Nasal breathing quiets the mind.*

Q83

Some schools of Yoga advice complete release of the pressure on the nasal passages during inhalation and exhalation in Pranayama. Other schools advice students to keep the nasal passages partially closed during inhalation and exhalation. Which method is correct?

A83

Initially, keep it almost fully open. Later, close it partially for optimum cardio-respiratory fitness.

Q84

If one of the main objectives of Yoga is balance (to achieve union), why do we start practice of Nadi Shodhana with one nostril and then reverse the direction on the next day's practice? Should we not practice the reverse in order on the same day to balance our nervous system as well as our consciousness (for example, practice Chandra Bhedana followed by Surya Bhedana Pranayama on the same day)?

A84

Starting Pranayama is difficult, as the nostrils need to get used to the stimulus of the touch of the fingers. It may be that on a particular day, one nostril may not be fully open. Initiate practice on any side-it does not matter if it is the right or left.

If we start on the right, the next day we reverse this direction to make sure that each day we use both the sides of the brain during Pranayama practice.

We do ensure that we use both the sides-only on different days. Do not practice Surya and Chandra Bhedana on the same day, as the cerebro-cortical effects would be contradictory to each other. The body cannot withstand the strain of one-sided breathing for a prolonged period and then the reversal.

Q85

If one does Viloma Pranayama on inhalation and exhalation, should the number of pauses be the same in both stages? Is there an ideal number and length of pauses?

A85

Initially, practitioners have to find their own level. With improved skill, the number of pauses should be the same on both inhalation and exhalation. If dissimilar, cardiovascular strain will unduly increase. Generally, you will notice

that if inhalation is easy, the pauses will be easier with inhalation and the reverse with exhalation. Adjust the length of each pause carefully. The longer the pause, the greater the “strain” on the system and the resultant cardio-respiratory toning is better.

Q86

Is it advisable to count during inhalation, retention and exhalation in Pranayama?

A86

Counting could disturb the mind and the rhythm of the breath. We start becoming tense in order to achieve timing! On the other hand we need a focal point to assess the duration of the in and out-breath. The best option would be to practice very early in the morning when we can listen to the ticking of the wall clock (select a good “silent” one!) and use this as a metronome.

Q87

Should one “produce” sounds while practicing Pranayama?

A87

The sound should be audible to one’s ear only and it is produced for two reasons. The first is to make sure that the physical rhythm is maintained and sound is an excellent guide. The second is to focus the mind.

Q88

During Pranayama, when should we swallow the accumulated saliva?

A88

Salivation will not occur if the mind is well focused. With a simple deep inhalation and exhalation, it does not matter when we swallow the saliva. On occasion during pranayamic practice, we take a deep breath as a part of a recovery cycle. At this point, swallow the saliva at the end of the deep refreshing inhalation that naturally occurs.

If retention of breath is practiced after inhalation or exhalation, (without Mula or Uddiyana Bandha), it is easier to swallow after exhalation retention (though it is better avoided).

If done with Bandhas, the strain is intense. With Uddiyana done after exhalation, the powerful pull of the abdomen makes it very difficult to perform a swallowing act. It is also difficult after Mula Bandha to swallow saliva. The ideal solution is to break the practice for a few seconds, swallow the saliva and then continue Pranayama.

Q89

Is it correct to feel breathless during or after a Pranayama session?

A89

This happens to beginners. Savasana restores normalcy. A slight strain on the system is not harmful. However, as the practice becomes easy, breathlessness stops and lightness is felt in the lungs after every session. Everyone can and must achieve this level of fitness.

Q90

I practice Pranayama and yet I am breathless while climbing stairs or walking long distances. Please clarify.

A90

There is a definite lacuna in such a Yoga practice. Make sure that the breathing is comfortable and easy during Pranayama and Asana practice. If unconscious retention of breath occurs, correct this immediately. Breathlessness will result during daily activities if we practice retention with effort. Pranayama done properly will prevent this problem but when done with strain can create breathlessness. Hence, find out where the mistake lies in Yoga practice. **Many exercises are task specific.** A person competent at Pranayama cannot run like a sprinter and vice versa.

Q91

Does Pranayama abolish halitosis (poor oral odour) and snoring?

A91

We need to determine the cause of halitosis and treat it. Sinus ailments, infections, dental and other problems have to be ruled out. If we find

no cause, a good diet and Pranayama done systematically can abolish halitosis. The need for oral hygiene is obvious to say the least.

Snoring may be due to narrowed nostrils, nasal allergy, dental disorders, deflected nasal septum etc. Pranayama is invaluable after anatomical abnormalities in the oropharynx have been eliminated and corrected.

Mental stress can result in snoring. Poor posture in sleep can obstruct the oral cavity and cause snoring. Again, we have to treat the cause. Ujjayi Pranayama will help abolish snoring. At night, eat moderately and retire early. Sarvangasana and half Halasana done at bedtime are very beneficial.

Q92

Some schools advise pranayamic type of breathing in Asanas for hypertensives. How should we use the breath in Asana practice?

A92

Hypertensives should not attempt deep breathing while practicing Asanas. This will raise the blood pressure.

We move into most standing poses, inversions, forward and back bends, with an exhalation and we release the pose with an inhalation. While maintaining the pose, breathe normally. Practice deep breathing when the pose is mastered. However, do this without losing the grip of the muscles otherwise the tension of the Asana will be lost.

Remember that the entire body is not passive in all Asanas-certain parts are dynamic with the right tension, others relaxed. Balancing the tension in the pose is performing an Asana well. This is samatwam (equipoise) in Yoga practice.

Q93

Can hypertensives practice Visama Vrtti Pranayama?

A93

Sama Vrtti variety is safer for all of us. Patients should not attempt Visama Vrtti Pranayama as the blood pressure could increase.

Q94

Should a vocalist practice Pranayama before or after any singing session?

A94

Pranayama should be completed first as the lungs will be toned well to enable singing. The lungs also cope with the strain of the song and its pitches. Pranayama calms the mind preventing any mental stress. Singing sessions preceding Pranayama will cause breathlessness during Pranayamic practice.

Q95

Does the rule mentioned above apply to those using wind instruments that require air to be blown in?

A95

Pranayama practice preceding the use of wind instruments is highly beneficial and in the long term curtails cardio-respiratory strain caused by habitual usage of the instrument. Ujjayi and Nadi Shodhana Pranayama are beneficial.

Q96

With high levels of pollution in the environment, does the practice of Pranayama do more harm than good?

A96

We have to make an effort in spite of adverse forces. This does not mean of course, that we should try to battle for the lungs living in a perpetually smoke filled area. If Pranayama cannot protect us completely, it can reduce the intensity of future ailments. We cannot expect it to provide benefits in the face of overwhelming odds. The best course is to practice breathing in the early hours of the morning before the level of suspended particles in the air increases.

Q97

Is it advisable to practice Pranayama in a closed climate controlled room-especially in the tropical areas?

A97

Pranayama practice requires fresh air. If the weather is hot, we can use the air-conditioner for a short period before switching it off and opening the windows to allow fresh air. This is one reason why Yoga texts advise us to practice Pranayama in the early morning to beat the rise in temperature.

Q98

Is it prudent to practice Pranayama in carpeted rooms with the windows open?

A98

We should not practice Pranayama in carpeted rooms. Even in a ventilated room, the fibre from the carpet will find its way to the nasal area and cause allergies.

Q99

If we live in a cold city (for e.g. Buffalo, New York), how can we secure fresh air at a comfortable temperature for Pranayama practice as the climate is cold and the windows need to remain shut for most of the year?

A99

Sit near an open window and practice Pranayama unless it is snowing. We must be well clothed to counter cold drafts. The will power of the Yoga practitioner must be able to overcome such problems up to a point. Sit near the deck or French window of the house and partially open the mesh and glass door to allow fresh air. During the day, if the temperature rises, ventilate the rooms to some extent. The room can be re-warmed later. Whenever possible we must seize the opportunity to practice. Give health priority over any other issue.

During the practice of Pranayama in cold climates inhalation must be slow and gentle to allow the nasal passages to get used to the chill temperature else they will become dry and irritable. Initially the lungs will find the cold air difficult to adjust to; with practice, it becomes easier.

Q100

Why does nausea occasionally occur during Pranayama practice?

A100

This may be due to sluggish digestion or strain on the liver due to improper technique. There could be other reasons though, like practicing Pranayama on a partially empty stomach. Heavy diet consumed on the previous day could hamper the technique and effects of Pranayama.

Q101

On cessation of smoking, can Pranayama help the patient regain healthy lung tissue and pulmonary capacity?

A101

This depends on the individual body reaction. There can be no generalization. The rate at which our body regenerates varies. Beyond a point (which is difficult to specify), regeneration does not occur. We must practice all Asanas to secure benefits. Passive postures followed by active methods are beneficial.

Q102

Can habitual practice of Kapalabhati Pranayama help an ex-chronic smoker to cleanse the lungs and recover lung capacity?

A102

This type of Pranayama is inappropriate for current or ex-smokers at the outset. All Asanas and other types of Pranayama should be mastered first. Smokers have a poor vital capacity and need to be treated carefully. Inversions with deep breathing help improper drainage of phlegm. Back bends should be prescribed (active or passive) depending on the needs of the patient before Pranayama is introduced. The diaphragm should be made elastic before any breathing exercise is taught.

Q103

Yoga texts mention that Pranayama cleanses the nadis (nerves, arteries and veins and other subtle

pathways in the body). How do these channels become “impure”?

A103

We have lost the “Anusasanam” (code of conduct) of life. The “impurity” of the nadis is multifactorial in origin—smoking, alcohol, excessive or lack of sleep, jet lag, anxiety states, fever, metabolic disorders like diabetes, surgical stress and so on. Pranayama is not the initial solution! The cause has to be treated. This is very important. Sri BKS Iyengar often says, “It is not enough to touch Yoga to be fine”. Hard work is necessary. Asanas themselves purify the nadis and the “Iyengar method” is extremely precise for such situations. Though the *Hatha Yoga Pradipika* mentions the use of kriyas or cleansing techniques, Asanas and Pranayama are effective in most situations. The text clearly recommends the use of kriyas only if Asana practice fails. In my clinical experience, this rarely happens.

Commence with Asana practice and then proceed to healthy Pranayama practice. Time is a factor to cleanse the channels in the body—arteries, veins and nerves (nadis).

Q104

Can Pranayama incorrectly practiced affect the arterial system? Could it cause “paralysis” of the lungs?

A104

The arteries can become “irritable” and the sympathetic stress could increase. This will result in reduced blood flow to the area concerned. The lungs could become weak and its vital capacity can dwindle. “Paralysis” cannot occur (which by medical parlance is total cessation of function).

Q105

What are the symptoms of such irritability?

A105

If the vascular system is affected, tiredness, headaches, and listlessness result. Periodic breathlessness is another symptom with the respiratory system.

Q106

Does Pranayama practice change the functional parameters of the vagus nerve (a nerve emanating from the brain) and allow a greater intake of oxygen?

A106

Greater intake is a misnomer. *Optimization* is a preferred word. The lung has a fixed capacity for all. The vagus nerve function is not “changed”. In fact, the “automaticity” of the vagus is consciously overcome and the lungs are trained to breathe slower. The shallow intake of “every-day breathing” is replaced by deeper, more thorough Pranayamic breathing, which reduces the dead space in the lungs (the space that does not normally participate in respiration).

Q107

Some students complain of sleepiness when they attempt Pranayama (be it beginners or not). Can you clarify?

A107

Either they have not slept well the previous night or mentally they are restless persons. The latter cause is more common as the nervous system is weak. Repeated practice will abolish such symptoms.

Q108

Can people who suffer from stress-related insomnia practice retention of breath (Kumbhaka)?

A108

Correct practice of Kumbhaka soothes the mind. However, initially, it depends on the mental make-up and instructions are individualized. Breath retention techniques are not taught to beginners. However, for patients we can make an exception. Slow inhalation and prolonged exhalation will benefit this condition (before retention is attempted).

Q109

After Pranayama practice followed by a 15-minute rest in Savasana, can we practice all Asanas (or are there some that we should not perform)?

A109

In the morning, generally, we can practice all Asanas after pranayama. After a long day's work, we may be tired and the sequence may need a change.

On Bandhas:

Q110

Is it necessary to stretch the neck upward and forward before we perform Jalandhara Bandha?

A110

Ultimately, the length of the neck is the same even if we attempt such an awkward technique. The forces that act on the cervical column would tend to become listhetic (a tendency to forward slip of the spine) and this is incorrect. It is adequate if the spine lifts to meet the "dropped" chin.

Q111

What is the difference between Ashwini Mudra (contraction of the anus) and Mula Bandha?

A111

They are very different. In the former, only the anal sphincters are contracted and in the latter, the sphincters are relaxed while the abdominal wall with the organs are pulled upwards and backwards.

Q112

When should Uddiyana Bandha be performed during Pranayama and why?

A112

The method is to practice it after exhalation as the lungs are empty and the abdominal wall can be pulled backwards and upwards to the maximum. During inhalation, it is anatomically

not possible to do this! If attempted, it will cause nervous irritability and raised blood pressure.

Q113

While performing Jalandhara Bandha during practice of Nadi Shodhana Pranayama, should we also practice Uddiyana and Mula Bandha?

A113

Introduce Bandhas in all Pranayama practices, after achieving the capacity of breath retention (retention after inhalation and exhalation).

Q114

Should we practice Mula Bandha during Kumbhaka or just after inhalation is completed?

A114

Attempt it after total completion of inhalation *when breath retention is practiced* else tension will result on the head and cardiac area.

Q115

Is it advisable for women to practice Nauli?

A115

The internal anatomy (apart from the reproductive organs) is identical for men and women! Hence, medically there is no contraindication. However, if women tend to constrict the perineal floor, this should be carefully avoided.

Q116

Are Uddiyana, Mula, Jalandhara Bandha contraindicated for people suffering from extreme mental and physical stress?

A116

The first two of the above are not advisable initially. Relaxing passive postures are more important. However, Jalandhara Bandha is very useful in Pranayama to relieve tension. I would first eliminate the cause of stress and then advice appropriate Yoga practice.

Q117

Can incorrect Uddiyana or Nauli practice cause involuntary discharge of semen?

A117

Incorrect technique of Uddiyana and Nauli can weaken the pelvic muscles but not to an extent that there is involuntary loss of semen. Asanas have to be learnt prior to attempting such Bandhas.

Q118

Some teachers advise the use of Bandhas in Asanas such as Maha Mudra. In which Asana should we use Bandhas (Mula Bandha, Uddiyana Bandha, and Jalandhara Bandha)?

A118

Shoulderstand is the perfect preparatory posture to learn Jalandhara Bandha. Uddiyana should be practiced separately or with Pranayama. The complete Bandha will not be possible as the shape of each Asana restricts free control-the quality will be different from the “normal” Uddiyana. Practice of Uddiyana in Asanas could cause a rise in blood pressure.

Q119

Some opine that Mula Bandha should be done in all back bends. Is this concept correct?

A119

This is medically incorrect. When a healthy person performs back bends, there is much tension on the head and there is a healthy rise in blood pressure. Any additional rise due to the Bandha is most harmful. A healthy person will not feel ill effects immediately as the problems develop insidiously (which clinical examination would reveal).

Q120

Do we combine Asana practice with the practice of Pranayama and Bandhas in one session, or are all these separate practices? Can we perform a Bandha in Paschimottanasana with Ujjayi breathing?

A120

It is better that Pranayama is a separate practice that includes Bandhas. We should not attempt a Bandha in Paschimottanasana, as this will cause a sprain in the back. “Ujjayi” pattern of breathing can however be maintained.

Q121

Should people suffering from tension related backache, (or backache from other causes) or headache avoid practicing Uddiyana Bandha?

A121

There are a host of situations which preclude the practice of this Bandha-low back pain, high blood pressure, COPD (chronic obstructive pulmonary disease), low blood pressure, Sinusitis, Migraine and chronic headache, Glaucoma, general poor physical fitness to name a few. However, this is not a permanent restriction. Once the condition improves, Bandhas can be learnt. We must remember that a proportion of patients with headaches derive benefit from Uddiyana Bandha. The Bandhas *bolster* the nerves.

Q122

Is the execution of Mula Bandha different for women and men? Some teachers opine that women should contract the vaginal muscles and not the anal sphincter and men should contract the central part of the perineum. Please clarify.

A122

We cannot contract the anal sphincters without the perineal muscles being forced to work. Hence, in Mula Bandha the entire perineum should contract. Secondly, we cannot contract the central part of the perineum selectively. A predominance of contraction is possible. There is little difference between men and women in the usage of relevant muscle groups.

Q123

Is there a difference between Prana and Kundalini?

A123

In practical terms, there is little difference. Prana is the life force and according to Sri BKS Iyengar, auto-energizing in nature. Patanjali has never used the word Kundalini but he has implied that this is present. Books are often quoted like a parrot without understanding and questioning. This does not apply to all situations. We must not be caught in jargons else, we are lost.

On Breathing in Asanas:

Q124

During Asana practice, should we be receptive for a feedback from the breath or the muscles and joints?

A124

Both are essential. Primarily, the geometry of the Asana is important and the skeleton of the Asana (correct shape) should be so achieved that distortion of the inner organs does not occur. Many schools of Yoga do not follow this. Within the maximum perfection in the execution of the Asana, we must make sure that breathing is smooth and uninterrupted.

Having adjusted the body properly, it is in continuance of the pose that the practitioner should “listen” to different parts of the body, (the muscles, nerves, tendons, blood flow etc.) to make sure that the optimum reaction from the tissues is obtained for corrective action. This is known as *reflective yogic practice*. The skin is the most sensitive organ. Any slight change in tension will reflect as a discomfort in that area especially if the fat padding is less owing to body anatomy. In denser areas of the body, we should feel “deeper” for “body messages”.

Q125

Should we restrain the breath while practicing Asanas?

A125

This is incorrect and raises the blood pressure. It can cause headache, palpitation, and giddiness. A few schools of Yoga follow this approach, which

is medically incorrect. If the intra-abdominal tension increases as happens with breath holding in Asanas, the aorta suffers elevated pressure and this is not desirable. We can practice suspending the breath in Maha Mudra and in Setu Bandha Sarvangasana on the prop.

Q126

Can the breath be a tool for elongating the muscles? Do we need specific postures to achieve this?

A126

The main technique is to consciously relax the relevant part and move forward voluntarily. The breath is only a secondary aid used to make this voluntary movement safer. If we want to improve in Paschimottanasana, and have extended quite a bit into the Asana, take a deep breath, move further on an exhalation without tightening the body. This conscious non-tightening action is easier on exhalation. Sometimes, even with the breath exhaled we can make a mistake and tighten the wrong area. Hence, the conscious act of relaxing the relevant areas is important.

On Standing poses:

Q127

Students sometimes complain of headache after a class of predominantly standing poses. Is this complaint plausible?

A127

This is because of restraining the breath during practice of Asanas. In addition, the head and neck areas tend to tighten up involuntarily. Headaches cease when we avoid this. It is advisable to do Uttanasana, Dog pose or Virasana with the head on the floor (in front) at the end of the class to remove any strain. Nevertheless, do not make this a habit for it will mask mistakes in the standing poses.

Q128

Neck pain seems a common feature during or after practice of standing poses for both beginners and advanced students. Experienced teachers are unable to help. Please comment.

A128

This is incorrect and due to tight facio-cranial muscle. Keep the trapezius muscle soft while rotating the head and shoulders. The shoulder blades must be “kept” flat in the relevant poses.

Q129

Should we expand the chest wall in all standing poses?

A129

Sonographic studies have shown that cardio-thoracic functions are adversely affected if the chest is not optimally expanded in standing poses. This prematurely weakens the pumping action of the heart and lungs.

Q130

Is it necessary to relax the groin in standing postures?

A130

Tension in the groin muscles can cause pain. The “depth” of the groin area should increase in most of the standing poses and this has to be learnt.

Q131

I feel excruciating pain (sacral area) when I tighten the rear buttock muscles in standing poses. I had previously strained the sacral muscles due to incorrect practice of back bends. Even though I no longer have pain in the sacrum does this mean I should not contract the gluteus in these Asanas?

A131

The mistake lies in the incorrect angle of the standing poses that needs to be rectified. The muscular alignment of the body is incorrect. The para-spinal and sacro-iliac muscles do not run parallel in the postures, as they should be. If the sacro-iliac muscles are affected, practice all other poses carefully.

The sacro-iliac muscles are short in length and difficult to stretch. If they are in spasm while in

Utthita Trikonasana, adopt a 45-degree angle for the pose which will abolish or lessen the pain even if we tighten the gluteus. Align the gluteus of the *front leg* to a flat angle and pull it downward during the pose-we have to learn this adjustment.

Q132

Can we damage the hamstring muscles if the legs are intensely stretched in standing poses?

A132

This will not occur if we adjust the quadriceps proportionately. Those who have hyper-extended knees have to learn the correct method of stretching. Yoga is a steady-state stretch unlike other systems and hence such injuries are very uncommon.

Q133

Is it necessary to lock the knees (when the legs are straight) in all standing all poses?

A133

In standing poses, the knees are subject to a lot of strain in the posterior (backward) direction. The quadriceps muscles have to brace the joint and protect it from hyperextension. Moreover, Doppler studies have shown that the hemodynamics in the legs are unhealthy if they are kept inactive. This also hampers the fluid and lymphatic flow in the lower limbs. Locked knees provide for a healthy spinal stretch. The legs are the foundation for standing poses. Locking the knees also tones up the bones of the legs.

Q134

If we dislocate the kneecap while attempting standing poses, what is the cause?

A134

An X-ray of the knee will help to determine the shape of the condyles (the enlarged lower ends of the thigh and upper ends of the leg bones) of the femur and tibia. Certain shapes predispose to easy dislocation. With a background of this congenital

anomaly, dislocation occurs with improper practice. Correct **medial alignment** (towards the centre of the body) of the knees while practicing any pose can prevent this problem.

Q135

In Tadasana, should the student centre the weight first on the arches of the feet or the heels?

A135

The weight of the body from the top of the skull first reaches the heel bone and then toes. This is a medical fact. Hence, the correct teaching in Tadasana is to guide the student to attend to the alignment of the heel first and then stretch the arches accordingly.

Q136

In Dog pose, should the head remain aligned with the spine or drop towards the floor?

A136

The back of the cervical spine and head should be in line with the rest of the spine. The chin should not touch the chest though the head can drop to the floor. Maintain “Tadasana alignment” throughout the pose.

Q137

Sometimes the hands tend to go numb in standing poses. Please comment.

A137

If the hands are inactive, they will become numb. Proper extension of the muscles prevents this. For e.g. in Trikonasana the energy has to extend from the fingers of the arm on the ground to the arm which is stretched straight upwards. Keep the skin parallel to the flesh to prevent hardening of the nerves.

Q138

Should the forearm and upper arm turn outward while practicing Dog pose?

A138

The elbows should face each other. Outward rotation of the forearms and shoulder will cause

instability of the shoulder joint over a period. Care should be taken to avoid hyperextension of the elbows.

Q139

Is it correct to turn the palms outwards while in Dog pose?

A139

This is indicated for specific ailments and situations only.

Q140

In the above pose, can we place the thumb and index finger together?

A140

This incorrect adjustment will cause a bunching up of the inter-digital muscles and pain in the long term.

Q141

In Dog Pose, is it necessary to attend to the spinal stretch or get the heels down on the floor?

A141

It is more important to make the lumbar spine concave (which is harder with the heels flat on the ground). Eventually master the pose with the heels on the floor.

Q142

In spite of best efforts, many practitioners have a convex lumbar spine in Dog pose. Is this geometry permissible?

A142

In order to achieve a concavity on the lumbar area, we must first bend the legs; craft a concave spine, then re-stretch the legs. Over a period, this will help the spine to elongate. The stretch of the hamstring muscles should be felt from the upper part of the thigh area.

Q143

While practicing Utthita Trikonasana, is it necessary to maintain the front leg in the X-axis of the body in preference to the adjustment of the rear leg?

A143

The groin of the rear leg must never protrude forward. The front leg thigh would be slightly out of the axis but this is permissible. Stamp the inner heel of the front leg hard to make the leg straight and elasticize the back of that knee.

Q144

Many Yoga schools do not teach Utthita Trikonasana with the lower hand on the floor. Does this influence the benefits of the pose in any way?

A144

It is difficult to align the spine for beginners and hence this method may benefit them. If we place the hands on the shin, the spine and shoulder blades can be aligned better. This helps enhanced intra-cardiac massage. However, with the hands of the floor, we have to work harder to adjust the hips, groin muscles and the shoulder blade area and ultimately align the spine. Both methods are acceptable. Ultimately, learn to place the hand on the floor and work the muscles of the dorsal spine to the maximum.

Q145

Some schools teach placing both the feet parallel to each other in Utthita and Parivrtta Trikonasana. Is this preferred rather than rotating one foot outwards?

A145

This is medically a gross error. The spine tends to go out of alignment and this will eventually cause hip and spinal problems. The rotation of one leg outward is essential and provides space for the pelvic bone so that the trochanter is not pressed. The spine can consequently bend sideward or rotate for the Parivrtta variations.

Q146

In practicing Parsvottanasana, is there a specific distance that we should maintain between the feet? Can we just take “one or two steps” forward as is taught in some schools of Yoga?

A146

We should not take a step forward as in walking! We calculate the distance depending on the height of the person, the relative proportion of the legs to the spine and the stiffness of the hamstrings and the spinal muscles. At times, the tall and short person will have to maintain a similar span.

Q147

Should we practice Uttanasana with bent or straight legs?

A147

We must practice Uttanasana with straight legs. If the legs are bent, the intensity of the spinal stretch is lost though it may be easier to elongate the spine. The back will not be strained if the breathing is normal and the floating ribs and paraspinal muscles are extended in a parallel manner even though the legs are kept straight.

During the practice of Yoga, if we optimize the quality of tension on the hamstrings, tears will not occur. ***The circulation in a bent leg is reduced which is not desirable.*** It is escapism to think that those who cannot do the pose can keep the legs bent. There are preparatory poses that help even a stiff novice to achieve the final pose. Some schools of Yoga advise students to bend the legs while practicing this pose presuming that they still benefit.

There is also a subconscious fear, as they fear that the hamstring muscles can be strained if the legs are kept straight. We must know how to treat a hamstring muscle strain rather than avoid correct methods of practice. The older the person, the stiffer the hamstring muscles (in general). Hence the importance of preparatory poses should not be missed.

Q148

Should we tighten the rear buttock muscle in standing poses like Trikonasana, Parsvakonasana and the Parivrtta (rotational) variations? What is the correct way of practicing, and why?

A148

It is very important to understand the functions of the muscles before practicing Yoga. The three glutei are the extensors of the back and abductors of the hip and they work differently in every pose. It is very necessary to tighten the rear gluteus in standing poses wherever possible or else one will suffer back pain, months or years later. Moreover, when we stretch the back in one direction and the legs in another, the body needs a brace to work in opposite directions. Yoga practitioners who suffer back pain will feel better *instantaneously* if they use the gluteus properly.

Q149

Is it necessary to practice Virabhadrasana I by joining the hands? What is the effect on the shoulder blades?

A149

The effects on the body vary with the position of the hands. The strain on the heart is less if they are placed apart. When kept together, the intra-cardiac massage is effective. The neck muscles should never be strained while this is attempted.

Apart from this, if the hands are kept together, the shoulder blades are made sharper, the back of the heart is well massaged and the latissimus muscles are well stretched. The sides of the lung are well stretched and compressed. The desired physiological effect can be attained with the suitable technique.

The vagus nerve tends to be compressed by beginners if they attempt to bring the hands together. This hampers circulation in the head and body. Hence, careful training is needed to place the palms together especially for patients.

Q150

Why are certain standing poses like Virabhadrasana I & Utthita Parsvakonasana contraindicated for students suffering from high blood pressure? What happens to the heart in these poses?

A150

This is not an absolute contraindication. Practice these as supported Asanas after the initial poses have been learnt. With advancement in practice, they can be included. Patients might strain the heart due to the geometry of the pose and the blood pressure might rise. Nothing deleterious happens to the heart in these poses except that, by virtue of their shape, they pose a strain which patients may not be able to cope with initially.

In the institute at Pune, Sri BKS Iyengar helps cardiac patients practice these Asanas, but only after a specific period. The resting of the chest on a wall or pillar is a valuable way to learn the pose. The common mistake made is to create undue tension on the diaphragm by subconscious breath retention and this is harmful to patients. In order to relax the diaphragm, keep the arms apart and supported at the periphery. If we transfer the weight of the body to the prop, breathing becomes easier.

Q151

I sometimes get dizzy and light-headed coming out of Ardha Chandrasana. Could you explain?

A151

This is perfectly normal for many in the beginning. Cerebral perfusion does not fully compensate for the erect pose. This can happen in other poses too. Cerebral perfusion has to be maintained from pose to pose-supine to sitting, prone to supine-else the brain would suffer. This lack of adjustment to change in posture may be a mite more prominent in some. It can occasionally occur as a normal phenomenon in healthy individuals when we arise from bed after a period of prolonged rest. We can abolish this problem by the practice of Asanas.

Breathing needs to be coordinated in Asana practice. A beginner tends to hold the breath; hence the pose is a muscular entity rather than organic (healthy, optimum interrelationship to the inner organs), and this causes giddiness. Asanas should not be done using physical force (the brain), but using intelligence with *delicate* and precise adjustment.

Rhythm should be observed in Yoga.

BKS Iyengar

Q152

Could we practice Parighasana along with standing poses?

A152

This Asana is a combination of a lateral bend and rotation and is similar to Parivrtta Janu Sirsasana. This can be included after Utthita Trikonasana.

On Forward bending poses:

Q153

Seated forward bends are supposed to relieve headaches, yet I feel heaviness in the head after a session of such poses-why?

A153

The causes could be multifold-tight breathing, guarding the abdominal muscles, tight neck muscles, pushing the tongue on the roof of the mouth, tense eyebrows etc. All these areas have to be consciously relaxed.

Q154

Why does neck pain occur with the practice of standing or seated forward bends?

A154

This will not happen if the trapezius and cervical muscles are relaxed. The vagus nerve in the neck should not shorten. If we stretch the neck forward more than the dorsal spine, headaches will occur. The dorsal spine should precede the descent of the neck, the lumbar area should precede the dorsal area and the sacroiliac muscles must move forward prior to the lumbar area.

Q155

How could we prevent low back pain in these poses?

A155

Stretch the spine from the sacro-iliac muscles and release the glutei from the floor. Make sure that hamstrings are elasticized before attempting

the pose. Breathing has to be passive and the lumbar spine well lifted up in a concave manner. Curb impatience to achieve the final pose.

Q156

Is it necessary to maintain a well-stretched spine in these poses?

A156

Ultrasound studies reveal that cardiac pumping is adversely affected if the spine is hunched while performing seated forward bends. Breathing will be heavy and headaches occur later. A “light” spine produces a cool sensation on the face.

Q157

Though there is no pain during standing or seated forward bends, sometimes we feel heavy in the spine later in the day. Why is this so?

A157

There are several causes for this. The list includes improper breathing, heavy diaphragm, semi-active muscles, tightening of the *deeper layers* of the abdominal muscles, and a collapsed “final” pose where there is a tendency for the muscles to move back and upward rather than down and forward. Any one of these can cause heaviness.

Q158

Are seated forward bends more risky than standing forward bends for people with back problems?

A158

Risky is an inappropriate word. Tough may be a better-suited word. Both seated and standing forward bends require flexibility in the hamstring and spinal muscles. However, while standing there is a “free fall” due to gravitational action and we can easily rotate the pelvis forward. In the seated posture, gravitational action is eliminated. This is the key reason for its “toughness”.

Q159

Many students find seated forward bends difficult because of tight hamstring and stiff hip rotator muscles. What are the best poses to stretch the hip rotators prior to these Asanas?

A159

It is not the rotator but the hip flexor muscles too; which is why we practice seated forward bends after the standing poses. The latter make the hip flexors (muscles that bend the spine forward) and adductors (inner thigh muscles that bring the leg towards the centre of the body) very flexible. Subsequently, supine hamstring stretches like Supta Padangusthasana upwards and sideward are invaluable. Baddha Konasana is beneficial. All the muscles that control hip adduction and flexion are toned in standing poses (the psoas, the adductors, the piriformis, the obturator muscles and the glutei). Hence, there is no problem if preparation is adequate. The teacher must also be able to identify whether the spinal muscles are stiffer than the hip flexors.

Q160

Please highlight the action of the groin muscle in all forward bends.

A160

The groin muscles have to roll inwards. This softens the sacro-iliac muscles and helps improve the flow in the pelvic area on completion of the pose. We must increase the “depth” of the groin area while performing these poses. Concurrently, the lumbar spine becomes more concave.

Q161

Some students feel pain just below the kneecap of the extended leg(s) with forward bends like Janu Sirsasana and Paschimottanasana. How can we prevent this?

A161

This means that the legs are placed in a crooked manner while in the pose. If they turn the shin straight and lock the knee, the pain would stop. The pain is due to improper muscular forces acting on the tissues and at the insertion of the quadriceps tendon. The tissue area around the quadriceps tendon and the medial ligament should increase in depth while executing the pose. We must lengthen the muscles of the groin that makes the shins “longer” preventing pain.

Q162

Could you comment on the need for straight legs in seated forward bends?

A162

It might be easier to move the spine when the legs are bent, but we cannot retain the quality of dynamism on the spinal muscles. The effects of an altered circulation in the legs when well stretched in all forward bends are highlighted with Doppler studies in this book in the last chapter.

Q163

Why is it important to practice Maha Mudra, a Mudra, in the middle of Asana practice? It seems very similar to Janu Sirsasana- is it necessary to practice both?

A163

Maha Mudra is not a forward bend. We align the spine like Tadasana. Moreover, we drop the head down and the breathing pattern is unlike Janu Sirsasana. Hence, both the poses are necessary. In Janu Sirsasana the spine is pulled forward tremendously from the sacro-iliac joints and the shape is convex unlike the former. The physiological effects are very different in both.

Q164

Should we always practice Maha Mudra before seated forward bends?

A164

This is unnecessary if the muscles are properly elasticized by standing poses. In Maha Mudra, the hamstrings are well stretched and this helps pelvic rotation in seated forward bends. The dorsal spine is also well exercised and this helps one stretch better.

Q165

Is it correct that all forward bends should be “Maha Mudra” forward bends, i.e. keeping the spine straight while moving forward, not rounding the back? Why is this so important and what will happen if the back is rounded?

A165

We must remember that it is not possible to keep a Maha Mudra spine *throughout* the pose. Close to the final part of the pose, the spine becomes convex. We can attempt to keep it straight. All *forward bends are convex poses*.

However, if the back has a rounded shape (more than a certain degree), a catch will result and the discs are subject to an uneven pull. If the sternum does not collapse, the pose is correct though we should not forget the spinal lift. The cardiac chambers tend to dilate if the spine is rounded. Hence, proper spinal alignment is important.

Q166

Are there specific medical benefits gained by the practice of Maha Mudra?

A166

The mind feels calm and the face cool. The spinal muscles are elasticized and digestion made intense. The spinal discs and the heart are toned. The practice of an incomplete Uddiyana Bandha in this pose stimulates appetite and energy levels increase.

Q167

Often we notice a Scoliosis (an S-shaped crookedness) in the spine while in Janu Sirsasana. Should the spine be aligned straight?

A167

The spine cannot be completely straight as a *physiological scoliosis is intentional in the pose*. This is to ensure that the spinal muscles are twisted and stretched forward simultaneously. This is one of the finest Asanas to relieve spinal pain after the preliminary poses have been mastered. The scoliosis should be minimal and the paraspinal muscles stretched in a parallel manner to prevent the “side effects” of the scoliosis that is intentionally produced.

On Twisting poses:

Q168

Headache and chest pain seem to occur while (or sometimes) after attempting twisting postures. Please clarify.

A168

Restraining the breath and tightening the neck muscles can cause headaches. Incorrect lift of the intercostal muscles (usually insufficient lift) is the cause of the pain with restrained breathing aggravating the chest pain.

Q169

Is it correct to feel nauseated during or after twisting poses?

A169

Retention of breath and tightening the body while attempting the posture is the cause. This is injurious if allowed to persist. Practicing prematurely after a meal may be another cause. Unrestrained breathing prevents abdominal complaints in the Asana.

Q170

Are twisting postures beneficial to relax the spine after a back bend session? Are some of the twisting poses contraindicated after back bends?

A170

An easy method to relieve lumbar pain after back bends is to practice Bharadvajasana on a chair, followed by Dog pose with the heels raised and then Uttanasana crosswise. Twisting postures on the floor can be practiced after this. Avoid the “convex” variety of Marichyasana III unless half Halasana is practiced prior to this. Half Halasana with the legs apart (if needed) is a good pose for relief from pain after intense back bend practice.

Q171

Is it correct that practicing twisting poses before Sirsasana is not advisable because the spinal muscles become “unstable”?

A171

Twisting Asanas can definitely be included before Headstand. This includes Parivrtta Trikonasana and Parivrtta Parsvakonasana. Actually, it is easier to practice Headstand after

twisting postures as the spine is flexible and the relevant muscles can perform a better Headstand and influence leg stability. Using the same logic, any twisting posture can be practiced after Headstand, as they are easy to do so due to the inversion draining the venous blood in the legs and spine making the legs lighter and the spine more supple.

Q172

Can the standing lateral poses precede the standing forward bends? Can Sirsasana, Dog pose and the standing Parivrtta (rotational) variations follow this in order?

A172

Standing lateral bends can precede standing forward bends and Parivrtta variations can definitely be practiced after standing forward bends, as the spine will be supple. We must remember that any rotational pose has a movement of flexion (forward bending) in it. *Instability of the spine will never result if the central and lateral (outer) spinal muscles remain parallel in the twists while performing them.* Headstand and Dog pose can follow this sequence.

Q173

Can we practice all the twisting poses after Sirsasana and Sarvangasana?

A173

There need be no doubt about this. As Shoulderstand is a convex pose, convex twists like Marichyasana III should follow Shoulderstand. Alternatively, Bharadvajasana II can be done even though it is a concave posture (the placement of the leg in Padmasana helps the spine stretch well preventing any strain).

Q174

Groin pain after twisting poses seems common. Please comment.

A174

Improper groin alignment will cause pain. Keep the groin muscles soft and turned inwards. The

depth of the groin should increase and the outer part of the groin should descend down to the floor. Then pain will not occur.

Q175

Twisting poses are supposed to be beneficial for back problems, yet some fail to get relief, please comment.

A175

Improper preparation to achieve the pose, tight groin muscles, compressed spinal muscles, and faulty alignment of the leg are common mistakes. *Master standing spinal rotations before attempting seated rotational postures.*

On Inverted poses:

Q176

Some opine that habitual practice of Headstand results in baldness particularly in the area of the head that bears the weight-please comment.

A176

This may happen only if the pressure is exclusively on the skull. The weight in Headstand is on the shoulders and forearms. Adjust the hair on the skull properly before lifting the legs off the ground.

Q177

Is it acceptable to feel lethargic in the mind and body after inverted poses?

A177

This is incorrect. There could be several reasons for this-improper sequence, prolonged timing and laboured breathing in the pose, tensing the cranio-facial structures, collapsed trapezius muscles and lack of proper sleep the previous day.

Q178

Can serious damage occur to the Yoga practitioner like a stroke or palsy (incomplete paralysis) presumably due to incorrect practice of inversions and back bends?

A178

Any such injury could be purely coincidental. In twenty-six years of my experience with Yoga and fourteen years of combining Yoga with Internal medicine, I have never seen a case of such serious nature due to incorrect Yoga practice. If something has occurred that I might not be aware of, this is most likely due to a *pre-existing* condition wherein Yoga was contraindicated. Neither the practitioner nor the attending physician would have been aware of this.

An example is suffering a hyperextension injury followed by symptoms of vertebral artery injury in the neck while attempting back bends. This causes loss of sensation on one side of the body and certain specific syndromes. The physician could incorrectly assume that Yoga is the cause in such situations. Unless the practitioner has been extremely violent in the postures (jerky movements like high intensity Aerobics or like a gymnastic movement) such injuries do not occur. I remember a case of an elderly woman (in her late sixties) attempting Headstand and suffering a nasal bleed. This was due to incorrect technique and the woman had very fragile nasal membranes. She had no guidance in her practice. Even so, this injury is of a mild nature as the nasal membrane is prone for bleeds due to its high vascularity. If we blow our nose strongly and rupture the blood vessels, such nasal bleeds can occur. Do we then claim blowing is risky?

I am not trying to counter argue for the situation, but highlighting the value of precise technique in Yoga and the indications and contraindications for practice. A Yoga teacher cannot comprehend clinical situations of nasal bleeds and other possible co-existing ailments. Do consult a physician trained in Yoga.

Q179

Is the need to sneeze or rubbing the eyes after Headstand permissible?

A179

This can occur if the pose has been practiced without “lightness” and (or) if breathing is

incorrect. However, this usually does not happen after Shoulderstand. Ensure nimbleness of the legs, deltoid and trapezius muscles.

Q180

How do we use the muscles of the eyes in inverted poses?

A180

A beginner can keep the eyes open until mastery of inverted poses is achieved. Later, it is not improper to keep them closed especially in Headstand when the pose is more soothing to the system.

Q181

Is there a degree of redness in the eyes and face that is permissible when we practice inversions?

A181

There is no generalized guideline. Blood shot eyes indicate an incorrect technique, which is usually due to tightening the cranio-facial structures and restraining the breath while in the posture.

Q182

Some students develop small extravasations of blood under the skin around the eyes or all over the face during or after practicing Headstand. Should we in such cases advice avoidance of this pose or reduce the time limit?

A182

These are medically termed as petechiae. Each person may commit a different mistake. Breathing may be restricted, some may press the tongue on the roof of the mouth, a few may tighten the neck muscles and others may tighten the diaphragm. Rectifying these common mistakes prevents petechiae. The use of the bandage is necessary for some persons. The ceiling ropes are advisable (initially) if they are unable to understand the technique of the pose. Reducing the time limit in the pose is definitely necessary. Avoidance of the pose is not the correct approach.

Q183

A bubbling and searing sensation is felt in the nostrils at times during or just after Headstand—the kind that we feel after consuming a carbonated drink. Please clarify. Occasionally the ear feels choked during Headstand, is this permissible?

A183

This happens if we do not practice the pose in sequence or if there is a long gap between the previous pose and Headstand. Maintain a healthy lift of the trapezius muscle and “deepen” the groin before raising the legs off the floor. Keep the legs active in half Headstand, and then complete the pose by a healthy forward stretch of the coccyx in lifting the body to the final position.

In the posture, the legs should continue to stretch to prevent the searing sensation in the nose. The ear should not feel congested. The shape of the ear canal should not change in Headstand, which is a “*reverse Tadasana*”. The eardrum and external canal should be passive and relaxed. If the placement of the head on the floor is nearer the forehead area, the ear will feel choked.

Q184

Is it permissible for a beginner to feel neck pain during or after Headstand?

A184

If the pain improves as the muscles strengthen, this is permissible. If the deltoids are weak, consciously lift this muscle while in Headstand. Even advanced practitioners commit this mistake and sometimes suffer chronic neck pain.

Q185

Should the practice of Headstand stop a day before the onset of menstruation? Will practicing Headstand delay the onset of menstruation?

A185

Any such advice is individualized. Generally, we can practice all postures until the flow begins.

Forward bending Asanas along with Supta Virasana and Baddha Konasana follow suit. During menstruation, avoid inversions as they can counter the drainage mechanisms of the body that is trying to discharge a menstrual flow. Headstand practiced by a healthy woman does not delay the onset of flow unless there is a hormonal imbalance. For menorrhagia (excess menstrual flow), inversions are beneficial.

Q186

While in Sarvangasana, should we practice Ujjayi or nasal breathing?

A186

Each has different physiological benefits. Ujjayi benefits the cranio-facial area while nasal breathing benefits the heart and lungs. *Ujjayi pattern of breathing commences automatically in Shoulderstand.*

Q187

Is it necessary to use blankets under the shoulder in Shoulderstand as done in the “Iyengar” system? Many schools of Yoga insist on Matsyasana or Salabhasana after Shoulderstand to counter the strain on the neck. Is this approach medically tenable?

A187

Firstly, in Shoulderstand, the weight is not concentrated in the cervical area. The shoulders and the trapezius muscles take a lot of weight in lieu of the neck. Secondly, we strengthen the neck and shoulder muscles over a period with repeated practice so a counter pose is unnecessary. *The use of blankets under the shoulders is a necessity to prevent reversal of the neck curve* occurring over many years of Shoulderstand practice. This method is not heeded by many schools of Yoga.

Patanjali has said “*sthira sukham asanam*”—the posture should be pleasant, comfortable and easy (Iyengar *ibid.*, Sadhana Pada II.46). If we do not master the Asanas what is the use of Yoga practice? Do not practice Matsyasana or

Salabhasana after Shoulderstand. Similar to the yo-yo effect, we then need a pose to counter the effects of Matsyasana or Salabhasana and this will never end!

Medically, as repeatedly explained in the earlier parts of this book (and in *A Matter of Health*), **a counter pose is not necessary in the antero-posterior direction (front to back), but only in the lateral and rotational angles.** Many have not understood this logic and we mechanically practice what has been handed down over the years.

Q188

To practice Sarvangasana, the general advice is to use three-four blankets especially for students with long necks. Would not the cervical spine be hyper-stretched?

A188

We have to assess each person individually to evaluate the thickness of the neck muscles, the weight of the lower body and the size and strength of the rest of the body before practice. This systematic approach precludes problems.

Q189

How many blankets do we need for practicing variations of Shoulderstand (Karnapidasana, Parsva Sarvangasana, Parsva Urdhva Padmasana in Sarvangasana)? With a single mat, it seems easier to stabilize the wrists and forearms.

A189

We can practice Pindasana, Parsva Pindasana and Uttana Mayurasana and Karnapidasana with two or three blankets. Parsva Sarvangasana and its variations can be with three-four blankets. It requires better control of the inner thigh muscles that should lengthen while performing the pose. Setu Bandha Sarvangasana can be practiced with three-four blankets. Eka Pada Sarvangasana can be practiced with two or three blankets.

Q190

Why do some persons feel spinal (lumbar, thoracic or coccygeal) pain during or after inversions and its variations?

A190

Improper spinal alignment, poor weight distribution of muscle forces, non-tightening of the gluteus, weak deltoid muscles and excessive timing in the Asana are some of the reasons. Each case has to be individualized and guided. Tightening of the gluteus muscle prevents sacral and coccygeal pain while proper alignment of the spine prevents lumbar and thoracic pain. Proper usage of the deltoid muscles prevents cervical pain.

Q191

Should we tighten the gluteus in inverted poses?

A191

This tightening action lessens the load of the lower body on the spine, kidneys and the eyes. The pelvic organs also feel lighter. Rolling the glutei inwards and then lifting them is a better manner of using the muscles rather than mere tightening (except in Halasana). This in addition lessens the strain on the entire spine.

Q192

Is it correct to presume that the blood drains from the legs in inversions?

A192

This is medically incorrect. ***The velocity of blood flow in the popliteal artery*** (an important artery in the leg) ***while in Headstand is greater than that in Tadasana.*** This is an automatic adjustment to prevent the arterial and venous column from pressurizing the brain. If we do not activate the muscles of the legs, peripheral perfusion would reduce.

Q193

What is the disposition of the leg muscles in inverted poses?

A193

Stretch the legs actively upwards to prevent the vascular pressure on the lungs and heart. This healthy stretch ***increases the blood flow in the***

legs though the body is upside down. The muscles of the legs should be more active than that of the arms.

Q194

While practicing inversions should we keep the feet fully extended or fully flexed? Methods of teaching vary-which is the best from a medical viewpoint?

A194

Flexed feet will retard blood circulation in the back of the legs. The foot has to be stretched upwards and the toes dorsi-flexed. The arches have to stretch open. The inner ankles should meet and extend upwards.

Q195

Is there any time limit to the inversions? How do we manage a headache that arises from the practice of inversions?

A195

Medically, we can practice inversions for a minimum of five minutes for optimum benefits (specific medical contraindications may exist). The maximum healthy period may be 15 minutes. The body may not need more than this. Many tend to abuse Yoga presuming that it is good to prolong timings in Asanas. Few are aware of the negative effects. It is important to retain the pose only as long as we feel “light” in the brain.

If we do not breathe properly and tighten the diaphragm, we will suffer a headache. If the cranio-facial muscles are tense in the pose, this will cause pain. Conscious relaxation of these areas prevents headaches. Remember that ***a headache can occur in any Yoga posture due to incorrect technique.***

Q196

If we practice Headstand for ten minutes and then all its variations for one minute each, the time taken would be close to half an hour-is this advisable? Is it good to observe such practices on a daily basis?

A196

This depends on the individual’s capacity. If we stretch the legs well and lift the deltoids properly, there will be no pressure on the brain. Generally, do not exceed a half hour limit in inversions inclusive of Headstand and Shoulderstand (with variations). We can practice the variations separately or a shorter timing of Headstand can precede it. This does not include standing inverted poses like Uttanasana or Dog pose.

Q197

Is there a medical reason for not practicing Headstand and Shoulderstand (repetitively in the same session)?

A197

We do practice Headstand and Shoulderstand in the same session though not repetitively ***after one set is completed.*** Nor do we practice Headstand again after Shoulderstand. This is similar to opening and closing a tap in quick succession and the human body cannot be subjected to this stress. The nervous system will be strained and irritability results.

Q198

You mentioned in the earlier part of this section (the query on sequences of Asana practice) “Headstand always precedes Shoulderstand for specific reasons”. What happens if we reverse this rule?

A198

We would suffer a terrible headache. The flow to the facial area has to be increased and then decreased. The reversal of flow strains the system (this need not apply to the other regions of the body). Nature has built the human body in this manner through constant evolution. Remember that while in Headstand, there is a sensation of fullness (though with comfort) and during Sarvangasana, the “choking” aspect of the neck nullifies this.

If we practice Shoulderstand first, the “choking” aspect of force followed by a gentle increase of blood flow to the neck and head area will strain

the cerebral nerves. The eye pressure tends to increase in Headstand and normalizes in Shoulderstand justifying the precedence of Headstand. Generally, after a strain to a flexed neck in an inverted pose with weight on the body we should not practice Headstand (though there are exceptions).

Q199

Is there a medical reason that one should practice half Handstand, half Headstand and half Halasana instead of their complete postures? Does this just depend on the physical ability to execute the complete Asana?

A199

Half Handstand teaches us the need for an alert spine-it is valuable for cardiac ailments. Half Headstand on the wall is beneficial for the heart lungs and prolapse of the pelvic organs. It is also useful for vertigo. Half Halasana is a relaxing pose and has therapeutic properties for sinus disorders and chronic headache and eye pain. Apart from this, the physical ability counts (as you have said) and a graded approach is advisable in learning Asanas.

Q200

I have read that Headstand with ropes is not advisable. Is this approach logical?

A200

This is a great misconception! There is no strain when we are suspended, as muscular effort is nil. The cranio-facial structures are completely relaxed! The practitioner cannot commit mistakes on the ropes. This helps patients with any medical problem to practice the pose safely. The placement of the ropes is important. We should not use an inversion tilt table. This will make the cerebral flow heavy and uncomfortable.

Imagine a geriatric patient with Cervical Spondylosis practicing Headstand on the floor without proper medical guidance. The ropes provide confidence and protect such patients.

Medically, when we want to achieve benefits faster and work against time, the ropes are of great help. Unless we have a fear of suspension, the ropes are very helpful. We can overcome such phobias if we attempt the pose. Later we will realize that the fear was irrational. The main difference between practicing Headstand independently and on the ropes is that, on the ropes, *the thoracic and abdominal organs are stretched and flattened intensely.*

Independent practice of Headstand is a “psychological pose” as we need confidence for the balance. *Headstand on the ropes is a ventilator of the abdominal and thoracic organs-an effect not available with Headstand done independently.* The blood circulates better in the abdominal and thoracic organs.

Q201

Novices in Yoga (on occasion) complain of nausea during and after inversions-even in an undemanding pose like Viparita Karani. Please explain.

A201

Restraining the breath in inversions is a potential cause and breathing normally rectifies this. Beginners restrain breathing, as they are nervous and in due course will avoid this. Seated forward bends done passively with pillows are important to prevent nausea that occurs after inversions.

On Seated poses:

Q202

How can we sequence seated poses with other Asanas?

A202

These are elementary poses and should not pose problems. Practice these after standing poses as it is easier or even after all forward bends, as the groin muscles are more flexible. We can practice them after inversions. For tired and painful leg muscles, Virasana *after* Shoulderstand is invaluable.

Q203

If seated poses are done after inversions, is it better to practice the Virasana cycle followed by Baddha Konasana cycle or should these cycles be done on alternate days independent of each other?

A203

We can practice the Asanas individually or together as mentioned. Treat the stiff individual carefully. To practice Baddha Konasana and Virasana in Headstand is easy and we can subsequently practice the same poses seated.

Q204

Is it correct that seated poses are strenuous on the knees? Are there any poses we must avoid after these-for example, back bends, twists, or intense leg stretches like Hanumanasana?

A204

Seated poses might be difficult for a beginner. Obviously, we should not execute a back bend after Baddha Konasana. We can practice twists after seated poses. If Baddha Konasana is the last seated pose, we can start the twists with Bharadvajasana II. We can practice Hanumanasana after Virasana if you can cope up with the strain but not after Baddha Konasana.

Q205

Some persons find Padmasana extremely difficult to practice. Is it necessary?

A205

Padmasana is a basic pose, which is very necessary for all. It prevents Arthritis of the knees and hence beneficial for aging. Moreover, it is required for Pranayama (though we can practice breathing sitting on a chair) as the spinal curves are optimum rather than Virasana or Siddhasana. There are methods to learn this unless one has very hefty thigh muscles.

Q206

Can obese persons accomplish a perfect Padmasana?

A206

This might be difficult owing to obvious reasons, but the practitioner should make a constant effort along with methods for weight loss.

Q207

While attempting Padmasana, is it necessary to lift the thigh upwards and outwards before placing it on the thigh?

A207

It is adequate that the leg is moved laterally (outward or away from the midline of the body) and then placed on the opposite thigh. Lifting the leg upwards and then outwards is incorrect and will subsequently cause groin injuries.

Q208

During Padmasana, the head of the femur strains against the acetabulum (the socket of the hip joint). Will this in the long term cause a lot wear and tear of the cartilage of the hip joint?

A208

The human body can adapt to these built in movements. There is absolutely no hazard. If the above were true, then the same applies for Virasana and any Yoga pose that pushes the hip to such intensity-even standing poses like Parivrtta Ardha Chandrasana. While practicing Padmasana, the movement is gentle and *the bones and muscles move together in the same direction*. The correct technique is important.

Q209

Will the practice of Padmasana deform the tibia and cause a varus (bowleg) deformity?

A209

Deformity will not occur if we observe correct alignment in practicing the pose. Lift the arches and move the hip joints medially, then we can avoid the pressure on the lower third of the tibia. After practice, observe the changes in skin colour in this area to understand the correct technique.

Q210

Do persons with hyper-elastic ankles find it difficult to perform Padmasana?

A210

If the flexibility is excessive (an individual assessment is necessary), it will be difficult to move the lateral malleolus (the outer part of the ankle) to the top of the thighs. Such persons tend to have short legs, which compounds the problem. However, everyone can ultimately master the pose.

Q211

How should we adjust the calf muscles while in Virasana? Should we pull the muscle straight down and outward or merely downward?

A211

Pull the muscles downward and laterally. Align the thigh muscles backward and inside out. Often, each person needs a different adjustment.

Q212

Will the practice of Hanumanasana accelerate deterioration of the trochanter (a part of the upper thighbone on the outer aspect) because of the extreme stretch?

A212

The question assumes there is existing damage. Even so, the answer is no. The trochanter does not stretch in an incorrect manner. Place the front and rear leg in a manner that both trochanters are parallel to each other. Master the standing postures as they stretch the hips and hamstrings. Subsequently, we must master Baddha Konasana and Upavistha Konasana before attempting Hanumanasana. Initially, props help one perform the Asana better.

On Supine poses:

Q213

Would you recommend practicing Supta Padangusthasana immediately after intense back bends to relax and “release” the spinal muscles?

A213

This is very harmful. Even if you do not feel any symptoms initially, problems can develop later. Bharadvajasana on a chair is one of the recommended Asanas. Alternatively, Dog pose with the heels raised; Uttanasana or Handstand with the paraspinal muscles well stretched is advisable. Shoulderstand or half Halasana after back bends is yet another way of securing relief.

Q214

Can we practice Supta Padangusthasana before or after seated forward bends?

A214

This is preferable prior to all forward bends, as the hamstring muscles become flexible enabling us to perform those poses better.

Q215

Supta Virasana often causes pain in the lower back for many. How can we rectify this?

A215

This occurs only in the initial stages. Use pillows to lessen the pain. Ultimately, all can master this pose. Stretch the spine horizontally backward and lower the umbilical area to the floor passively. Lengthen the adductors to descend to the floor.

Q216

In Supta Virasana, should there be a gap between the lumbar spine and the floor?

A216

The normal lumbar arch (lordosis) varies in shape (in the erect posture) for each person. For some, the spine will rest absolutely flat on the floor and others will have a slight arch albeit no discomfort. We must endeavour to flatten the spine to the floor. There is no compression of the spine in this pose. The better the inward rolling of the groin and quadriceps muscles, the easier the pose.

On Balancing poses:

Q217

How can we avoid headaches caused by Handstand and Elbow balance?

A217

In Handstand, the trapezius and neck muscles have to be kept passive (though ascending) when we perform the pose. Do not raise the eyebrows and facial skin. The eye muscles should remain passive. While practicing Elbow balance, we must lift the shoulder well away from the forearm. Stretch the trapezius muscle strongly upwards and backwards. More importantly, breathe normally in both postures!

Q218

Is Pincha Mayurasana (Elbow balance) an inverted back bend? The lumbar lordosis always feels exaggerated in this posture.

A218

This is not a back bend. Keep the spine straight, the gluteus contracted and the legs vigorously stretched upwards to avoid back pain. "Tadasana alignment" is necessary. **Minimize the lumbar lordosis** in the pose.

Q219

Is it possible to keep the inner edge of the wrists completely flat in Pincha Mayurasana?

A219

This is not possible. The wrist comprises of eight tiny bones. On the inner side of the wrist, near the end of the ulna, is a small bone known as the Pisiform. This is aligned in such a manner that the wrist can bend sideward more to the inner sides of the hand. This is responsible for the slight lift of inner side of the wrist in Elbow balance that we must try to minimize.

Q220

Generally, we do not practice forward bending poses along with those that bend the spine backward. However, when balancing poses are done, falling back into Urdhva Dhanurasana and

completing this by either standing in Tadasana or Viparita Chakrasana seems contrary to the rule.

A220

This is not harmful, as we do not retain the balancing poses for a prolonged period. Moreover, the spine though resembling a forward bend has in fact an "involution" action rather than a strong horizontal stretch as in forward bends. Hence, there is no contraindication to a back bend as a sequel. Falling back into Urdhva Dhanurasana is also a movement rather than retention and Viparita Chakrasana is a pose in motion. Hence, there are no ill effects.

On Backward bending poses:

Q221

Headaches, exhaustion and thirst occur sometimes after the practice of back bends-can you explain.

A221

A headache after such a session will not occur if breathing is healthy and unrestrained. The practitioner has to be alert to relax the breathing while improving or executing the pose. We can appreciate a "cooling" effect on the face (with back bend practice) that normally occurs only with seated forward bends. Exhaustion may be due to the above-mentioned reasons apart from too strenuous a practice session, incorrect preparation, a first attempt at back bends and premature introduction of the same in a daily sequence. Thirst will not occur if we **keep the mouth closed** through the practice session.

Q222

Could back bends help relieve Migraine headache?

A222

A minority of patients secure relief with back bends. Forward bending poses provide relief for the majority. For maximum improvement, inversions are invaluable for most. Please remember that in Viparita Dandasana, we are inverting the brain and we secure a "Headstand effect".

Q223

Is Urdhva Dhanurasana a cure for Arthritis of the shoulder?

A223

It is extremely beneficial but an average patient cannot achieve the pose. There are simpler Asanas that I have highlighted in *A Matter of Health*. Later, if desired, the person can practice advanced Asanas.

Q224

Pain in the lumbar spine seems to be the most common side effect of back bends compelling physicians to advice against such Asanas. Please comment.

A224

Firstly, *a back bend is not really a bend* but a stretch. *The spinal muscles should elongate from the lumbar to the cervical level*. If we practice correctly, injuries cannot occur. Physicians who have practiced Yoga can appreciate this. However, to an external observer, the internal adjustments made (as the person is executing the pose) may not be evident. A healthy strain will occur in the initial stages and we can counter this by other Asanas.

Q225

Is there a danger of developing an increased lordosis in the neck and lower back with habitual practice of back bends?

A225

This cannot occur with the correct method. We must remember that we also practice all forward bends that help reverse the lordotic curves. The spinal curvature of gymnasts appears hyperlordotic due to habitual back bend practice in their daily routine. This is harmful.

Q226

With the beyond “normal” movement of back bends, we stretch the abdominal muscles intensely. Will the abdominal wall sag over many years?

A226

This is possible but practicing specific Asanas like Uttana Padasana, Navasana and Urdhva Prasarita Padasana counters this.

Q227

Can we tighten and make a pendulous abdomen firm by Yoga practice?

A227

Firstly, a hernia has to be ruled out. Cosmetic surgery is beneficial in some cases though not the final answer. Dynamic abdominal exercises help make the abdomen flat though we should not shape it excessively as Pranayama practice will become difficult. After abdominal “crunches” have tightened the sagging muscles, Yoga can prevent a re-sagging. Navasana, Ardha Navasana and Urdhva Prasarita Padasana are beneficial.

Q228

Is it correct that women should actively squeeze the perineum and the vaginal muscles in all back bends? Why is this so?

A228

This applies to men too. This is to raise the pelvic organs, realign sagging parts and brace them against the stretch. In standing poses, we can contract only one-half of the pelvic and perineal muscles at a time; in Dog pose and Prasarita Padottanasana, the perineal muscles are stretched. In all back bends, we contract the muscles on both sides of the body.

Q229

It seems that students with a constitutional hyperlordosis perform back bends easily, yet often end up with pain in the posture or a resultant injury. Are back bends potentially harmful for such people?

A229

If they master forward bends before attempting back bends, they will not suffer pain. While practicing, they must use the right force in

different parts of the body. I cannot explain this theoretically. Such persons should be more aware of the “*Tadasana*” concept while practicing back bends. They must focus on the dorsal spine to prevent strain on the lumbar area, or the lumbar spine if the dorsal spine is hyper-elastic. The lumbar region must not be strained in back bends for the lordosis will increase. An over flexible dorsal spine must be “alertly passive” compared to the lumbar area.

Q230

After a session of back bends, is it safe to practice Virasana?

A230

Once the practice is *completed*, Virasana will not cause back pain, provided the spine is extremely *erect*. Supta Virasana (done with pillows) after back bends rests the spinal muscles.

Issues on the Musculo-skeletal system:

Q231

Can Yoga correct genetically determined body curvatures?

A231

Yoga can abolish the pain that could arise out of such conditions provided we initiate practice early. Yoga can arrest a developmental scoliosis; a genu varum or valgum can also be arrested provided the method of walking and standing is precise. The weight of the body should be on the inner edge of the knee and foot for a varus and on the outer edges for a valgus deformity.

Q232

Can Yoga help offspring of short parents to grow taller?

A232

Genetics influence growth patterns, this cannot be manipulated by any means except by the use of growth hormone; (in select cases), and this has to be carefully monitored. Its use is still

controversial. The child will grow normally to its pre-programmed level, as exercising is important for good growth. During sleep, there is a pulsatile release of Growth Hormone and Yoga ensures that the child sleeps well. A nutritious diet is essential.

Q233

Will Yoga correct congenital defects of the skeletal system like Marfan’s syndrome (some features include a high arched palate, cardiac abnormalities, lens defects and skeletal abnormalities) or Ehlers-Danlos syndrome Type 1 (features include excessive skin and joint elasticity)?

A233

Yoga practice is certainly permitted. It is possible to maintain health. The skeletal structure cannot be modified in both cases. Yoga is the only non-invasive method to combat long-term complications. Surgery is essential in some cases of aneurysms (abnormal dilatation of a blood vessel) that occur with Marfan’s syndrome. A physician must monitor the practice as over stretching can be very harmful.

Q234

Do overweight but otherwise healthy persons need to loose weight before beginning Yoga practice? What would be a recommended Asana schedule for a person who is a beginner with a height of 1.60 m and weight 90 kg?

A234

Being overweight is unhealthy though problems may not be forthcoming. This is like a time bomb, an embryonic state, waiting for a problem to manifest. Commence Yoga as early as possible as weight loss is not a pre-requisite. The type of practice needed depends on the bodily habitus and the flexibility of the person. The practitioner has to shed excess body weight through other methods (dieting, high intensity aerobic type of exercises etc.). All Asanas can be attempted depending on the individual capacity.

Q235

Is Yoga useful for “spot” reduction?

A235

Yoga can prevent fat gain in specific areas though we cannot expect it to work like liposuction! There is a general myth that Yoga can help weight loss. Certain body “shapes” are prone to accumulating fat in specific areas. Genetic factors, racial and environmental factors influence this.

To explain further it is natural for a pregnant woman to gain weight. Yoga cannot prevent this. However, Yoga will reduce the *intensity of build up* provided the practice is started *before conception*. Yoga cannot abolish fat in depot areas even after delivery. Aerobic exercises are more effective and quick; Yoga practice can help prevent gain.

Q236

Does weight play a role in recovering from illness treated by Yoga?

A236

Consider a patient with prolapsed disc who weighs one-hundred kilograms. It will take longer for such a patient to secure relief than some one slimmer. Modified Asanas will be difficult to perform even if the person is flexible. Recovery does occur albeit slow.

Q237

Can Yoga prevent, arrest or cure of hernias of different types?

A237

There are several types of hernias, to name a few—inguinal, femoral, incisional, congenital, umbilical and lumbar hernia. We need to examine the patient, assess the size of the hernia and the slackness of the hernia wall and consider other predisposing factors.

Each case is individualized. Early cases may respond to Yoga very well. Surgery is a good solution but not an end in itself. Yoga can (and should) be introduced post surgically after six

months. For some, Yoga cannot reposition the herniated organ completely though it can manage the condition without the need for surgery or can help postpone surgery. Perform the Asanas in a manner that the patulous opening of the hernial sac becomes a slit. *No other system can prevent recurrence except Yoga practice.*

I once examined a patient with a huge scrotal hernia (the entire small intestine had descended) which needed immediate surgery. However, I could not convince him on this need as a Yoga teacher had assured him a cure to the contrary. I referred him to a surgeon whom he persisted in questioning on the role of Yoga to cure him! I do not blame the patient. Correct guidance was lacking. Sometimes Yoga suffers a bad reputation owing to untrained individuals.

Q238

Which is the best posture to lift heavy objects from the floor?

A238

There are misconceptions in this. Firstly, *we can stretch forward* to pick the weight provided we know how to do it. Keep the spine concave, paraspinal muscles parallel and stretch forward. Secondly, the biceps muscle must take the load and not the body. Thirdly, on observing weight-lifters we clearly notice their concave back when stretching forward to pick the weight. In rural India, people routinely bend forward to work and pick heavy objects (in the farmlands). Their posture involves flexion of the spine in a calculated manner. They never suffer back pain. At times, practical experience is preferable to theories. Proper training from childhood is needed on the correct method of lifting objects.

Q239

Can Yoga help reduce a naturally overdeveloped calf muscle?

A239

Assuming there is no evidence of any genetic disorder, this is a racial and diet related factor. Other causes are developmental. A child that

walks on the toes is more likely to develop over-strong calf muscles. Yoga may take time to reduce an over developed muscle. It makes the muscle soft and elastic to prevent future pain (due to muscle stiffness).

Q240

Nocturnal calf muscle cramps seem to elude treatment by Western Medicine. How do you manage this problem?

A240

Yoga can treat this easily if it is of the *idiopathic* variety. All standing poses and the footrest with the calf muscle stretch can cure this problem very quickly. There is no need for vitamin supplements as is usually prescribed.

Q241

What role does Yoga play in Polio (established long-standing cases)?

A241

Medically, Yoga is the only system of exercise that can maintain health in this situation. Though Yoga may not be able to restore normalcy to the affected side, it can provide a perfect system of exercise to keep the muscles, ligaments and joints well toned and prevents deterioration. It is difficult to revive the damaged spinal neurons or at least, so far we have not found evidence to support regeneration.

Yoga is one of the finest systems as the methods are slow and energizing. Adequate firmness is provided to the muscles to achieve stability. Yoga alone provides accurate re-alignment for the body, which is essential for a case of Polio. In addition, power movements like cycling and Weight Training are essential in certain cases.

Q242

Do Yoga and chiropractic sciences have issues in common?

A242

The main similarity is in the concept of body alignment. Differences are prominent with the

aetiology and treatment of orthopedic disorders. Manipulation is a key factor for relief for many ailments in both though repeated, habitual sessions are necessary when using chiropractic sciences.

Yogic Asanas are a form of auto-manipulation and require daily practice to prevent occurrence and recurrence of diseases. *Yoga is also a preventive, which we can practice daily unlike chiropractic science.* It also differs from chiropractic science in that the methodology of Yoga postures is unique. In my experience as a physician, relief is better and the benefits obtained are superior and long lasting.

The props help those who cannot manage this “auto manipulation” which is self-controlled rather than an external source. The Yoga practitioner can feel the body internally and refine adjustments unlike an “external person” who cannot match this.

Q243

Is Yoga helpful for Fibromyalgia (a condition where the patient has multiple tender spots in the body, which are constantly painful)?

A243

Research has shown that this condition is benefited by aerobic exercise¹. In my clinical experience, Yoga can easily cure Fibromyalgia. All postures are valuable. Even an elementary regimen of Asanas consisting of hand and hamstring stretches, with a simple cross-legged forward bend followed by Bharadvajasana on a chair and rope back bends abolishes tender points. Consistent practice is essential.

Issues in Orthopedics:

Q244

How important is posture at work and play or otherwise? It is difficult to be conscious of our posture all day long!

A244

If we can be conscious about our personal appearance on a daily basis, it is not difficult to

be conscious of posture especially if we realize the need for this. Many parents do not highlight the importance of this to their children who later find it hard to maintain an erect posture. Constantly teach and monitor children and then it will become second nature to them. Pain makes us understand the importance of posture. **No exercise including Yoga is a substitute for right posture. Yoga alone can cure and prevent RSI** (repetitive stress injuries) in a holistic manner. RSI will never occur if the posture is accurate and the person does not overwork. This work limit is individualized.

Computer professionals will not suffer a carpal tunnel syndrome or any ache in the body if they have a good posture at work. This does not mean that sitting erect will suffice, but **lightness in the act of sitting** is important. The body is a marvellous, robust but sensitive machine and has a limit to its work capacity. Unfortunately, we do not respect the limits of the body and work excessively. Hence, **RSI is also due to over usage of the mind.**

Even the sleeping posture is important owing to relative immobility. Frequently, a frozen shoulder is due to habitual sleeping on the same side. This dries the joint fluid and causes restriction of movement that gradually progresses to Periarthritis. We often miss simple analysis.

If we sit erect, it is easier for the blood to reach the brain and this prevents many postural aches and pains including certain degenerative spinal ailments. Again, at play, adjust the posture according to the type of activity. I have dealt with this in detail in the Sports and Yoga section of **A Matter of Health** where I have outlined the inherent hazards of many common sporting events. I have also suggested methods of prevention. We can compensate for such hazards with Yoga.

Q245

What could happen if we do not respect the natural curves of the spine (cervical lordosis, thoracic kyphosis, and lumbar lordosis) in Asana practice? Will this cause a backache? Many

schools of Yoga never mention the importance of these curves in general practice sessions.

A245

Recurrent backaches do result if we ignore the rules. We would also permanently lose the natural curves of the body predisposing us to compressive pathology of the inner organs. If Yoga schools do not insist on this, they may not be aware of its importance. This is one reason that many physicians are against Yoga if any injury occurs as they do not understand the subject and cannot interact with the Yoga schools who do not understand Medicine.

Q246

What role does Yoga play in Osteoporosis? Can Yoga help the post-menopausal woman control the loss of calcium from her body?

A246

Osteoporosis is of two types-primary (Type 1 and Type 2) and secondary. The cause of osteoporosis has to be determined before treatment. A healthy diet that includes calcium supplementation (provided there are no contraindications); plenty of sunlight exposure (protecting the skin if sensitive) and a physically active life that includes exercise is the best solution. Hormone replacement therapy (HRT) is beneficial in select cases only. By and far our grandparents suffered a lot less from this disorder, they had no theories on the subject and led a simple physically active life. Many women fear this problem. They need not be concerned so long as they follow the necessary guidelines. Research has demonstrated that load-bearing exercises are beneficial for this condition². Medical supervision is essential especially for the elderly. We cannot prevent osteoporosis, as it is a natural change. We can minimize it and yet live very healthily without restriction in any activity. In secondary osteoporosis (due to many causes, like alcohol abuse, drugs like steroids etc.), the cause has to be rectified though Yoga can be practiced to maintain bone health.

Though there are no studies done on the role of Yoga, the special benefit from Yoga is due to the **geometry**. Yoga can strengthen any part of a bone and in any direction unlike other systems of exercise. We can consciously adjust the load on different bones. For example, standing poses provide a stimulus for the spine and legs. We practice Yoga gently and hence, the danger of breaking bones is nil. **All Asanas are helpful for osteoporosis.**

Q247

Will Yoga help prevent the reduction in height of the spine that occurs as we age?

A247

It does help, as the main mechanism of the Asanas is to stretch the spine in different directions. Inter-vertebral disc height reduces with age accounting for the shrinkage of the spine. This will not pose any major problem to us. All Asanas are beneficial.

Q248

Does Jogging adversely affect the spinal height?

A248

Studies have shown that the height of the spine in the post Jogging session shows a reduction³. This is not surprising, as Jogging constitutes a high impact activity. **Concurrent practice of Yoga can prevent this change.** Standing postures and forward bending Asanas are beneficial. Practice Yoga and Jogging at different times of the day.

Q249

What Yoga poses benefit a whiplash injury?

A249

First, the condition has to be assessed. For acute pain, rest and analgesics are mandatory. Subsequently, if the condition does not resolve and becomes chronic we can practice Yoga. Bharadvajasana on a chair, extension of the spine with the double ropes, stretching the neck on a

single rope and chair Shoulderstand are some of the poses advisable. The reader can refer to the section on Cervical Spondylosis in **A Matter of Health**.

Q250

Can Yoga help a case of Cervical Spondylitis (figure 1 below) with a “reversed curve” (loss of the normal concavity)? How much can Yoga work against a case of age related cervical degeneration?

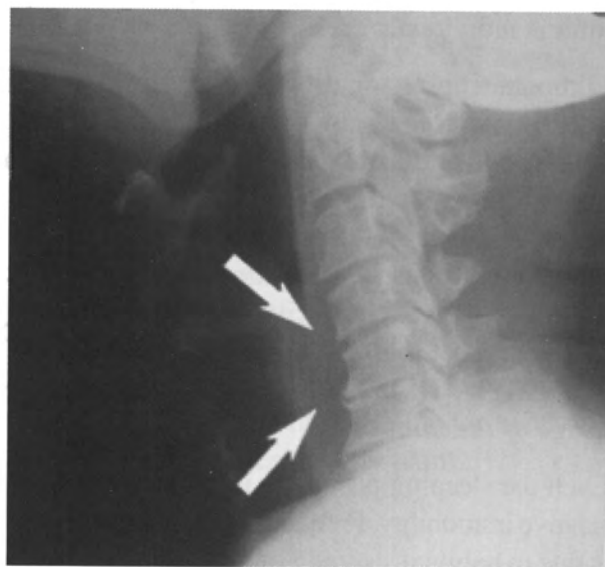


Fig.1 Cervical Spondylitis- the arrows indicate the area of degeneration

A250

This depends on the height, age of the patient and the extent of change in curvature. Mild degrees of curvature change can be even reversed while severe changes cannot. However, we can **abolish pain in all cases**. For a reversed curve, back bends are invaluable. In figure 1, the X-ray shows a very advanced degree of Cervical Spondylosis.

In this situation, the bony curvature is irreversible but the pain can be totally abolished and future neurological deterioration prevented. Stretching the neck on the ropes along with the double rope back bend are very beneficial (refer to **A Matter of Health**, section on Cervical Spondylosis).

Q251

Is Cervical Spondylolisthesis (a condition where the spinal vertebrae slip forward) a contra-indication to the practice of Handstand or other inversions?

A251

There is no restriction if we observe the right method. Shoulderstand on the chair and half Halasana are more important. The cervical spine is not a weight bearing area and hence to secure relief is easier. Headstand is very beneficial to strengthen the neck.

Q252

Will Ayurvedic massage help a “frozen shoulder” (Peri-arthritis), where the shoulder movements are grossly restricted?

A252

This approach does not benefit all cases. Qualified masseurs in that field are far and few today. Some patients have had muscle damage from incorrect massage techniques. I have used this approach very rarely for very severe cases of Peri-arthritis to relieve the tissue stiffness, as they can practice Yoga easier. The massage can loosen the tight tissues. However, unless we practice Yoga, relief will not be forthcoming. In my clinical experience, Yoga is very beneficial for all cases of Peri-arthritis. The recovery period depends upon the severity of the condition.

Q253

Can Yoga help persons who suffer from musculo-skeletal pain in the chest area-the Teitze’s syndrome?

A253

The relevant postures include holding the window bar behind to stretch the chest, the double rope back bend, Supta Virasana on pillows, Setu Bandha Sarvangasana on cross pillows (refer to *A Matter of Health*) and supported back bends all of which are curative. We must take care not to overstretch the muscles while practicing the Asanas.

Q254

What is a Ganglion and can Yoga treat this condition?

A254

A Ganglion is a cystic space filled with fluid. It usually occurs in the wrist. A Ganglion is a sequel of an old injury and a history of trauma can be elicited. In most, the history is non-contributive. Unless symptomatic, surgery is not necessary. However, recurrence after surgery is common.

Yoga can effectively handle the problem by specific Asanas that vary depending on the area of the Ganglion. If the wrist is affected, practice of reverse namaste, Handstand, and Urdhva Mukha Svanasana are curative. Medical monitoring is essential (as some may occasionally need surgery).

Q255

Many physical therapists recommend intense abdominal muscle strengthening exercises to relieve chronic back pain-is this advisable?

A255

Strong abdominal muscles are necessary for a healthy back. For some, the iliopsoas (a muscle that flexes the hip) and Rectus Abdominis (one of the major abdominal muscles) may be weak and this definitely needs strengthening but **after the back pain is abolished**. Yoga offers Urdhva Prasarita Padasana and Navasana to tighten the abdominal muscles. This also counters the muscle stretch of back bends, which can slacken the abdominal muscles. Strengthening the gluteus muscle is equally important.

Q256

Why do many schools of Yoga recommend Salabhasana and Dhanurasana for spinal pain and disc prolapse? I have seen many patients worsening by practicing these postures.

A256

This is a complex situation. **Concave** poses relieve back pain in most cases but when we practice Salabhasana and Dhanurasana, **the action of the muscles is convex** while lifting the body. Clinically, the pain can worsen.

In the medical world, until a few years ago, we advised these poses. However, we found patients worsening and now recommend only flexion exercises similar to Apanasana in Yoga. Yoga often offers a superior method.

It is important to understand that a painful muscle is in spasm and shortened in length. Lengthening the muscle provides relief. This is how medical traction works (I seldom recommend it) but should not be used for very acute pain for all patients. While practicing Salabhasana and Dhanurasana, **the muscles do not lengthen-they contract** and worsen the pain. **Venous oedema at the spinal level is worsened.** The teacher who uses such poses may not be aware of such clinical points.

Theoretically, though a pose may be beneficial, we may not be able to utilize it given a clinical condition. While in Salabhasana, one is lifting a load-the person's own body weight. **A muscle in pain cannot lift a load** and hence the pain increases. Of course, a few patients will feel better but this subset does not suffer from inflamed muscles but a weakness that provokes pain when they strain themselves. Hence, Salabhasana or Dhanurasana will benefit them. In the vast majority however, twisting and lateral flexion poses are necessary and hamstring flexibility is essential which many Yoga schools neglect.

Besides, I have seen even **Pranayama and chanting advised for orthopedic conditions like Arthritis and low back pain!** Apart from diverting the mind from pain, these have no value in clinical management of the condition. Usually back pain is due to tight muscles (a minority has over flexible muscles) in different areas of the body and hence stretching is more beneficial. After the pain is relieved, we can practice Salabhasana and Dhanurasana.

Q257

Is it advisable to practice Yoga in a situation of acute back pain?

A257

In this situation, the pain can be severe and immobilizing. A better approach may be rest with

analgesics if the pain is unbearable. Exercising with **acute** pain can make the condition worse and is like flogging a tired horse. Yoga offers passive poses for pain though we must realize the value of rest too. A passive pose is still a form of exercise though not strenuous to the body. This passivity heals the condition and later active poses can be practiced.

Q258

Is surgery needed mandatory for disc prolapse at L₅ level? Can Yoga help?

A258

We should work from the **“periphery to the center”**. Commence with Bharadvajasana, followed by lateral standing poses like Trikonasana and Parsvakonasana. Dog pose is invaluable. When healing has occurred, back bends are beneficial as they affect the central spinal area. In my experience, surgery is not necessary for the majority of patients with a prolapsed disc. Conservative management, which includes rest, analgesics and exercises, is successful. However, there are specific indications for immediate surgery (Cauda Equina syndrome where the nerves innervating the bladder and bowel are pressurized with impending paralysis). For more details, I would ask the reader to refer to the section on prolapsed disc in **A Matter of Health**.

Q259

Is Yoga practice beneficial for those who have had laminectomy or microsurgery done for a prolapsed disc but failed to secure relief?

A259

This is known as the Failed Back Syndrome (FBS). Yoga is beneficial, but relief will take longer than a non-operated case as scar tissue formation makes it problematic. Medical monitoring is necessary. Ultimately, **the majority can improve with time**. All standing poses are invaluable along with twisting Asanas done in a modified manner. Props help the patient to improve faster.

Q260

Can we introduce Yoga practice post surgically (two months) for a prolapsed disc problem? Are there any special precautions to be followed?

A260

The golden surgical rule is that 180 days must elapse before any scar can stretch. Fibroblasts (certain cells in the body) help form collagen and this has to become elastic. Generally, patients who have had disc surgery can easily resume Yoga. Nevertheless, individual guidelines are necessary for all the postures.

Q261

A patient felt weak in the right hip and experienced discomfort whenever any pose involving lateral leg movements or hip stretches were attempted. The following was the diagnosis:

- Arthritis of the right hip
- Bursitis in the right trochanter (inflammation of the bursa-a sac of fluid for muscle and tendon lubrication over hard surfaces)
- Sacro-ilitis (inflammation of the sacro-iliac joint)

A course of medication, rest, and avoidance of Yoga for two months provided no relief. Please comment.

A261

Refraining from Yoga may not be the answer. For Arthritis, the relief depends on the amount of damage already done by the time Yoga is begun. Excessive rest is counter productive in many situations. We need to rectify the methods of practice for relief. All standing poses preceded by Supta Padangusthasana provide relief. Baddha Konasana is very valuable for trochanteric bursitis. Sacro-ilitis benefits from standing postures and Supta Padangusthasana. Avoid back bends until the person feels normal.

Q262

Do overstretched ligaments play a role in the appearance of lumbar Spondylolisthesis? Some Yoga teachers express this opinion.

A262

This is an incorrect medical fact. This highlights yet again the reason for a medical background for Yoga teachers to prevent incorrect ideas taking root. Spondylolisthesis could be Dysplastic (a congenital problem), Isthmic (fatigue fracture of the pars as in gymnastics), Degenerative (Osteoarthritis), Traumatic, and Pathological (tumor, osteoporosis, Paget's disease). Bear in mind that practice of Yoga cannot cause this problem. For a joint to break a force of a considerable nature is needed. Yoga practice lacks this kind of force.

Q263

Is lumbar Spondylolisthesis a contraindication for back bends? How can we stretch the Psoas muscle in such a situation? Will Paripurna Navasana benefit this ailment by strengthening the abdominal muscles?

A263

This does not preclude practice of back bends. If the listhesis is in stage 1, we can modify back bends for practice. Passive backward bending on the rack is one such method. Concerning stretching the Psoas, lateral standing poses like Trikonasana and Parsvakonasana stretch this muscle. Virabhadrasana 1 with the dorsal spine aligned in the perpendicular plane is also helpful. Supta Virasana on pillows is invaluable. We can definitely include Navasana unless the condition is at stage 4. Urdhva Prasarita Padasana is very beneficial to flatten the spine and restrict the lordosis over the years. Practice this Asana by keeping the diaphragm passive and closer to the floor.

Q264

How do we get the synovial fluid moving in all the joints on a cold morning?

A264

Standing poses and inversions are useful for the lower limbs. Handstand and Elbow stand are useful for the upper limbs and spine. Moreover, a healthy force used to engage the muscles while practicing is more important. Asanas done with jumping are very useful to “warm” the joints. One example would be-Ado Mukha Svanasana to Urdhva Mukha Svanasana, then to Uttanasana, then on to downward Dog pose again; then to Paschimottanasana and Halasana done as a cycle and so on.

Q265

Is it true that taking a warm shower 15 minutes before and after Asana practice will help persons who suffer from Arthritis?

A265

If Yoga practice is effective, this is unnecessary. A warm shower may help a stiff person execute the Asanas better but this should not become a habit. Moreover, Asana practice after a shower can cause muscle fatigue and cramps.

Q266

Are static Yoga poses or Tai Chi beneficial for inflammatory conditions such as Arthritis and Bursitis?

A266

Clinically, Yoga is a superior science. The response to treatment depends on the amount of inflammation. In some cases, drugs may be necessary to relieve pain prior to Yoga practice. Though patients may show symptomatic improvement with Tai Chi, clinical examination will reveal a lacuna of certain parameters of improvement unlike Yoga practitioners.

Q267

Is there a difference in the bone formation of the acetabulum (the hip socket) between the Asian (a more open acetabulum) and the Caucasian (more closed) that makes Padmasana easier for Asians than Westerners?

A267

Anatomy is not the only reason. Many Asians tend to sit cross-legged on the floor for long periods from childhood. This results in supple groins and enables practice of Padmasana. Hence, life style factor is the key reason rather than anatomy. Life styles cause change in body anatomy.

Q268

How would Yoga treat Idiopathic Osteoporosis of the hip joint?

A268

This depends on the age of the patient and the degree of deterioration. For the older patient, improve Asana practices gradually. In a younger patient, (40-55 years) the cause has to be determined. Standing postures and inversions will help all age groups. In fact, all postures are invaluable.

For the geriatric, Supta and Hasta Padangusthasana are useful to start with. Standing poses with support follow. Poses that stretch the groins like Baddha Konasana and Upavistha Konasana are mandatory. A physician's guidance is essential as the fragile bones can break easily. The Yoga teacher should be aware of such implications. A bone densitometry test and calcium supplements are essential for the menopausal woman.

Q269

Is Yoga beneficial for a person with congenital hip luxation (slip)?

A269

We must assess the degree of luxation. All standing poses with perfect alignment are highly beneficial. **Baddha Konasana** is of prime value. No specific pose is contraindicated. Commence with simpler poses and progress to difficult Asanas.

Q270

Some very young children (6-9 years) seem to have severe bow legged deformity like those of an elderly arthritic patient. Is surgery mandatory and can Yoga help?

A270

One of the causes of such a deformity is Blount's disease and this is due to damage to the growth cartilage in childhood. Though we have several theories, the cause is still obscure. A corrective surgery is invaluable and indicated in most cases. Yoga is beneficial. Utilize Yoga post operatively rather than as a primary form of treatment as valuable time would be lost.

Q271

Can Yoga help correct knock-knees and bow legs? What kind of practice is necessary?

A271

Both conditions-genu valgum (knock-knees) and genu varum (bowlegs) are genetic and influenced by improper standing posture and diet. If we identify the condition in childhood, intervention may help but the child should be very consistent with Yoga and taught to walk with precise alignment. ***Improper walking can aggravate curvature changes.***

If there is a valgus deformity, use blocks between the legs during Yoga practice. Teach the child to walk on the outer edges of the feet and while standing erect to balance the weight on the outer edges of the feet. The converse is applicable if there is a varus deformity. Constant measurement of the deformity as the child grows is essential. All standing and seated poses help. Padmasana is invaluable for knock-knees though not initially. Align the tibia and femur ***along the midline*** during Asana practice.

In an adult with established deformity, treatment is directed at preventing future pain. The degree of relief depends on the severity of the deformity. Surgery may be advisable in some cases.

Q272

Is it correct that practice of standing poses can heal a rupture of the anterior cruciate ligament of the knee (anterior and posterior cruciate ligaments prevent forward and backward instability of the knees)?

A272

If it is a complete tear surgical repair is indicated, but may not be needed as Yoga can manage the condition for every day living. Ruptures of ligaments sometimes heal spontaneously if it is a partial tear. Partial tears respond well to yogic management symptomatically. If the person needs to indulge in high impact sporting activities, workouts in a gym are beneficial but continue with Yoga practice. Standing poses along with Virasana and its variations are necessary. The teacher should know the correct technique of adjustment as it is variable for every patient.

Q273

If both the anterior and posterior cruciate ligaments are torn, is surgery necessary? Can Yoga help?

A273

This depends on the degree of tear, age of the patient and the lifestyle. If the tear is complete in both ligaments, surgery is indicated. If one ligament is intact, conservative management is possible. If active participation in sporting events is desired, surgery is indicated though not in all cases. If the patient has a sedentary routine, Yoga will suffice.

This non-surgical approach does not preclude the patient from participating in exercise regimens like Swimming, stationary cycling and using a treadmill. Fitness levels can still be maintained. All standing Asanas and Virasana are useful with precise techniques.

Q274

If the menisci in both knees are torn, can Yoga help avoid surgery?

A274

The area of tear (medial or lateral meniscus) and the degree of injury should be assessed. A major tear may need surgery, though it is not a permanent solution.

The consideration is how much symptomatic relief can be obtained from Yoga. For the

majority, Yoga can give maximum relief. Standing poses with support under the foot are invaluable along with Virasana and its variations. Introduce Padmasana subsequently.

Q275

Is it correct that Glucosamine sulphate can regenerate cartilage? What is the recommended dosage and can Yoga supplement this or help avoid the intake?

A275

It has been found to be beneficial⁴. In my clinical experience, I have not found benefits for the majority of my patients. The dose is 1500 milligrams per day. More important than this is the quality of Yoga practice that can relieve pain in the affected joints. To explain, if a patient with Osteoarthritis of the knees achieves a complete Virasana (flat on the floor), this medication is redundant. Apart from this, all standing postures and Virasana cycle are necessary (refer to the section on Arthritis in the book *A Matter of Health*). There is no harm in using this supplement along with Yoga in the initial stages of an arthritic problem. With improvement in Yoga practice, discontinue Glucosamine.

Q276

Could Virasana strain the cruciate ligaments more than any other pose in Yoga?

A276

A healthy strain is necessary to maintain joint function. *Virasana provides optimum strain* to the knee and tones the joint. Padmasana “stresses” the knee too. Strain does not occur if we align the muscles of the posterior compartment (back of the leg). A patient suffering from any knee pathology has to be careful and take guidance in the execution of the Asana.

Q277

Can Yoga benefit Chondromalacia Patellae (a condition where the rear surface of the kneecap wears out) or is surgery required?

A277

Most cases in my experience never require surgery. Correct practice of Yoga abolishes pain and the patient can live a normal life. All standing poses are helpful. Virasana provides maximum relief.

Q278

Can Yoga reverse congenital hyperextension (over extension) of the knees?

A278

It cannot correct the previously established curve completely but prevents future pain. Take care not to overstretch the back of the legs while practicing standing poses.

Q279

How do we strengthen healthy collateral ligaments?

A279

Any exercise that involves weight bearing is beneficial. Examples are using a stepper, Weight Training, cycling etc. (an exception is Jogging, as it will result in a wear and tear effect unless done lithely). However, Yoga is superior in action. It retains natural suppleness and strength. All standing poses are useful along with Padmasana, Virasana and Bhikasana. The stress on the knee while we execute an Asana is unique—the muscles are massaged against the bone.

Q280

Can Asana practice repair torn collateral ligaments of the knee?

A280

Exercise will help healing but the outcome depends on the extent of tear. Repair is natural in small tears. Major tears may need surgery. Nevertheless, *most patients* can manage without surgical intervention. Yoga is of immense help to remove pain, maintain muscle and joint strength and prevent degeneration. Asana practice needs to be carefully monitored.

Standing poses give maximum strength and relief from pain is obtained through Virasana, Padmasana, and their variations.

Q281

Can patients who have had total joint replacements practice Yoga safely?

A281

The prosthesis available for the hip provides for almost complete mobility. Newer uni-compartmental prosthesis for the knee can provide full flexibility though we are yet to see if all these can withstand the stress of Yoga practice.

Practice inverted and standing poses without undue force to prevent loosening of the prosthesis. Back bends and all forward bends should be practiced by turning the legs inwards to prevent instability.

Q282

Are load bearing exercises such as Weight Training necessary in the above situation? Is Yoga adequate?

A282

Yoga is adequate as the intense practice provides relief and stability. Yoga can also protect against inherent side effects of other exercises included in the routine. Standing poses are the “Weight Training” of the legs in Yoga. Do bear in mind that other systems have inherent side effects of excessive lactic acid build up and fatigue.

Q283

Is it correct to preclude patients with Osteoarthritis (OA) of the knees from sitting cross-legged on the floor?

A283

Medically, this is incorrect. On the contrary, they must be encouraged to maintain normal or near normal movements as far as possible. Avoiding natural movements (unless there is acute pain)

will have an opposite effect-the patient will suffer from disuse atrophy (loss of function due to non-usage) and the Arthritis could progress. Sitting cross-legged is such a simple movement that will not affect the joints. If pain occurs while in the posture, we must learn the method of adjustment. A pillow propped under the buttock area helps prevent pain as the body is on a higher level and the strain on the knees is less.

Q284

Many patients with OA tend to develop a waddling gait. Why does this happen?

A284

In the initial stages of the problem, they shift the weight onto the outer side of the knee and foot in order to avoid pain. If this becomes habitual, OA will progress even after Yoga relieves pain. Such patients must make a conscious effort to realign the gait (as the body can “forget” to walk normally).

Q285

Is exercise essential for arthritic patients?

A285

There is enough research to support the positive role of exercise⁵. Yogis have always advised people to take up to Asana practice to prevent this condition. Practice Yoga in a graded manner. Inactivity causes loss of mobility. In the early stages of Arthritis (depending on the type), a supervised exercise regimen can normalize life considerably. In more severe cases, exercise will certainly arrest the progression of the ailment. It provides excellent pain relief and enhanced mobility so long as the patient continues to exercise (the need for this continuity is obvious).

Drugs may be required. In my experience as a clinician, Yoga has helped many arthritic patients to lead a normal or near normal life depending on their condition. Surgery is beneficial in select cases.

Q286

In the case of Osteoarthritis shown below, can surgery be avoided?



Fig.2 OA of the knee-the arrows indicate the area of degeneration

A286

The X-ray shows considerable damage to the patella (kneecap) and the joint space (see arrows). The front view of the knee also shows beginnings of a bowleg deformity. If such a patient is very consistent with Yoga practice, it may be possible to avoid surgery. However, every case is individualized. The outer shape of the leg does not correlate with the appearance on an X-ray. Therefore, we make a final decision after examining both the patient and the radiograph. If the bones show a greater bow shaped deformity than external examination reveals, the prognosis leans towards surgery at some point in time.

Q287

How can a patient with a compound fracture (tibia & fibula) with shortening of the leg practice Dog pose (as one leg will not touch the floor)? If both heels are pressed equally on the floor, will this cause an imbalance in pelvic alignment that could be detrimental in the long term?

A287

A small slanting plank under the shorter leg in standing poses will make up for the difference to prevent detrimental effects on the spine. Adjust

the buttock muscles with care in all poses. During inverted poses, stretch the short leg more powerfully (there is no need for any prop as the legs do not bear weight).

Q288

Can Yoga benefit a condition known as “accessory navicular bone”? How does Western Medicine treat this?

A288

An extra bone piece in the inner ankle just below and in front of the medial malleolus (the prominence of inner ankle) is common. This does not need any treatment unless it is painful. Surgery is unnecessary as Yoga can easily abolish pain. Standing postures, Padmasana and Virasana are invaluable and medical monitoring is essential.

Q289

Is surgery necessary to prevent future pain for those with valgus ankles (similar to knock-knees)?

A289

This depends on the severity of the valgus deformity. In most patients, *Yoga is adequate and ideal to prevent pain* but cannot reverse the deformity. If identified around teenage or better still, in childhood, Yoga is invaluable.

Q290

How does Yoga deal with Achilles’ tendinitis?

A290

If the pain is very acute, anti-inflammatory gels and drugs are helpful. Yoga provides a complete cure and treatment instituted as early as possible is beneficial. Dog pose, Parsvottanasana with the arch of the foot on the footrest, Uttanasana on the footrest, and Eka Pada Mulabandhasana are invaluable.

Q291

Are there Yoga poses that benefit flat feet?

A291

All the standing poses and Virasana are useful. It is important to know how to perform them; mere theoretical approach will not help. The muscles of the arches must be “sucked” up (a kind of in drawing action) while performing the Asanas. The curvature cannot be fully reversed but future pain can be totally prevented.

Q292

Can Yoga help relieve a condition of Calcaneal spur without surgery?

A292

Surgery is used only very rarely for Calcaneal or retro-Calcaneal spur. Yoga can abolish pain but understanding of the mechanics of the poses is essential. Virasana done incorrectly can make it worse. The proper alignment of the heel and sole, and placement of weight (if needed) in Virasana provides relief and subsequent cure. I have dealt with this in *A Matter of Health*.

Q293

The most common foot deformity for Western women is a deviation of the big toe outwards. What is the cause and is it correctable by surgery?

A293

This is a Hallux Valgus deformity and due to the extreme pointed shape of the footwear. The footwear may appear fashionable but we compromise on foot alignment. Surgery is a straightforward solution and poses no hazards. However, if this deformity is identified early enough, Asanas can prevent further worsening and surgery may be postponed or avoided in some cases. We can eliminate pain *without recourse to surgery* but Yoga cannot reverse the deformity in all cases.

Issues on Spinal problems:

Q294

Can Yoga help back pain independent of good posture?

A294

Postural abuse precludes pain relief. Inculcate concepts of good posture from childhood. We maintain a posture for hours when we sit or stand unlike Yoga practice, which is for a fixed period. Eventually, *an incorrect posture may overcome the beneficial effects of Yoga*. This is analogous to practicing Pranayama and smoking!

Q295

Why are women more prone to backaches? Are there specific exercises to eliminate this?

A295

Owing to hormonal reasons, a woman's body is softer and more flexible making her body more susceptible to pain as the tissues can easily get overstretched. This is one reason that many women develop back pain for the first time after delivery. With increase in sedentary habits, men are prone too.

Regarding exercises that help back pain, the reader may refer to *A Matter of Health* wherein I have dealt with this problem in detail. Generally, all standing postures, hamstring muscle stretches, and Bharadvajasana are helpful. All forward bends abolish pain and back bends help a minority of patients.

Q296

After a prolonged bout of sitting cross-legged on the floor (4-5 hours) as it happens in India for multifold reasons, what kind of Yoga sequence is advisable to neutralize the strain on the back?

A296

Lateral bends like Trikonasana, Dog pose, and seated twisting postures are beneficial. Back bends can be done in a sequence as the spinal muscles may be stiff due to prolonged sitting.

Q297

In the above situation (after prolonged sitting), can we practice Headstand?

A297

Yes, provided Dog pose precedes it. Headstand is very beneficial as the venous congestion of prolonged sitting is instantly relieved.

Q298

Are there contraindications for students with hyper-kyphosis (an excessive hunch) for Yoga practice?

A298

They have to be more aware of the need for a properly aligned “Tadasana spine” while executing Asanas. Other than this, there are no contraindications.

Q299

Is hyper-lordosis (an exaggerated concave spinal curve) a contraindication for practicing certain Asanas?

A299

Back bends are definitely not indicated at first. Initially such persons must practice all standing poses and all forward bends for a prolonged period (which is individualized) before attempting back bends. Practice inversions, seated twists and balancing poses. Some persons with a lordotic spine may still find back bends difficult. In this case, “normal” Asana practice is permissible.

Q300

How can Yoga help in the case of adolescent and adult Scoliosis?

A300

The cause of Scoliosis has to be determined in every case. The Idiopathic variety has three subsets, infantile, juvenile and adolescent. Adult Scoliosis has many causes-to name a few-those due to cord malformations, post traumatic, pelvic tilt Scoliosis, due to tumours, Polio, Cerebral Palsy, old infections, hysteria, bone dysplasia, etc. Surgery is indispensable in certain cases, so we should never be dogmatic about the role of Yoga.

Treatment has to be decided on a case-by-case basis after assessing the degree of Scoliosis. Coexisting congenital problems have to be ruled out with necessary investigations and then treatment started. Yoga is very valuable for Scoliosis for preventing further worsening and providing relief from pain. Sometimes, Yoga can reverse the curve if the patient starts practice early enough.

However, the deformity may not be fully reversible through Yoga in all cases, but the patient can *remain free of pain and prevent further progression*. This is true especially in the case of the adult type. All standing postures, lateral bends and rotations, and all forward bends are used. Individualized guidance is necessary. Yoga relieves pain by stretching the contracted areas, prevents further progression by strengthening the weaker side and balances the agonist and antagonistic muscles.

Yoga being a very highly geometric science is the only tool that can be of value in this situation. In a child, initiate Yoga at the earliest as soon as the asymmetry is noticed. Sri BKS Iyengar says, “Extension brings freedom”-while performing an Asana, if we use the muscles in a healthy and optimum manner, pain will cease.

Q301

If a teenager (novice in Yoga) has Scoliosis but is pain free, and is reasonably flexible, will the Asana sequence be the same as for normal persons?

A301

Asana practice has to be individualized according to the degree of Scoliosis and the direction of the curve. Cases of double Scoliosis (the lumbar and dorsal spine have two different curves) have to be handled with greater care. Consistent practice is necessary and the teacher should be able to identify potential problems even midway through therapy.

Q302

Can we treat severe sciatic pain causing a tingling sensation in the foot exclusively with Yoga or is surgery necessary?

A302

Yoga is adequate in most cases. I have detailed this in *A Matter of Health*. Occasionally, surgery is necessary though this may not prevent recurrence for specific reasons. In my clinical experience, unless a Cauda Equina syndrome occurs (which is uncommon), surgery is unnecessary.

Q303

Will spinal surgery guarantee the patient lifelong freedom from back pain?

A303

The cause of back pain has to be evaluated before starting treatment and appropriate action taken. Each case is different. For example, removal of a tumor abolishes pain permanently. In general, it is better to avoid surgery (if possible) as scar formation and subsequent fibrosis give rise to many problems years later. However, the most common cause of a back problem is one of a mechanical nature.

Q304

Is Yoga advisable after extensive back surgery with implants like pins and rods in the spinal column?

A304

Often, we can practice Yoga safely. Medical monitoring is necessary to make sure that the implants do not shift. All standing poses are invaluable.

Q305

Do you recommend supports like an ankle guard, knee brace or a backrest for pain in different parts of the body? Is the Lumbo-sacral belt (LS belt) advisable for patients with low back pain? Is the collar advisable for those with neck pain or a disc prolapse in the cervical region?

A305

A support is necessary only for acute injuries. A chronic injury does not need such crutches. If we learn to distribute the body weight properly, an ankle guard or knee brace is not advisable. If

a person can remember to sit erect always (and this is possible), a backrest is unnecessary. We can use any chair with a firm base so long as the height of the chair does not reach above the shoulder. Sit independent of the backrest. Do not waste time in searching for ergonomic designs. The *way of sitting* is the ergonomics needed.

Regarding the use of the LS belt, only those involved in continuous lifting of heavy weights need this support. In this group, many can avoid the belt if right lifting techniques are used. The cervical collar is not needed except for acute traffic injuries where the bony column is broken. This is to prevent paraplegia and protect the patient from possible surgery.

Yoga is of great help in restoring strength to the relevant areas, and practice has to be intense to recover good muscle strength. Clinically, I find that only the BKS Iyengar system of Yoga achieves this.

Q306

Blocks under the feet often relieve lumbar pain when we practice back bends. Is this method applicable to all cases of acute and chronic lumbar pain?

A306

For acute pain, rest is necessary. Passive Asanas may be useful but back bends are not indicated initially. There are a few cases of chronic pain that benefit from the use of back bends. In most cases, the usual routine of Yoga practice will help. If there is pain *whilst* executing the Asana, the blocks will help.

Issues on Sporting events:

The reader should refer to *A Matter of Health* for a detailed analysis of the role of Yoga in the sporting events.

Q307

How should we construct a Yoga sequence for sporting events that involve continuous running like Basketball, Football, and Hockey?

A307

Yoga can be practiced both pre and post event. Avoid a strenuous Yoga session pre-event. Inversions preceded by Dog pose are invaluable. Post event, Supta Virasana combined with half Halasana are beneficial for removal of fatigue. Practice Sitali Pranayama in the early morning to cool the system from heat and dehydration. Nadi Shodhana Pranayama will provide endurance to the lungs.

Q308

Events that involve the mind in a serene and intense manner like Archery, Shooting, and Chess mentally drain the person. How does Yoga help?

A308

Practice of Pranayama prior the event is invaluable to prevent mental strain. Post event, the use of the bandage in half Halasana and Viparita Karani followed by Supta Virasana on pillows (with the bandage) refresh the practitioner.

Q309

Cricketers and Tennis players stress the spine much. Can they suffer from stress fractures owing to the torsion force of the spinal movement?

A309

This is possible but does not happen frequently. However, the muscles and ligaments will suffer excessive strain not primarily due to the game but due to the frequent tournaments that are scheduled without a break (medically, the interval provided between matches is not adequate).

Q310

How do we protect the spine given the above situation?

A310

Standing poses, all forward bends, rotational poses and back bends are necessary. Yet, if there

is no adequate interval between matches, the body can suffer the strain despite of Yoga.

Q311

Please clarify how specific sporting events like Shot put, Javelin, Discus, Walking and Jogging, Weight Training, and Aerobics affect Yoga practice and how we can integrate them with Yoga on the same day.

A311

Habitual Shot-put practice will prevent a correct execution of Dog pose, as one shoulder tends to be more stretchable. This is evident particularly in back bends like Urdhva Dhanurasana. Handstand will also be unstable. Use of the Javelin, Hammer and Discus tend to cause similar problems. The athlete should practice Urdhva Hastasana and Dog pose followed by Handstand and Elbow stand prior to the sport. At the completion of the game, reverse namaste is necessary to rotate the shoulders inwards. This will provide relief from the external rotation of the shoulder caused by such events.

Walking and Jogging (on either the ground or a treadmill) tend to harden the muscles of the body unless combined with flexibility exercises. Yoga is ideal to counter this. Yoga should precede Jogging if we practice both consecutively. If split into morning and evening regimens, it is still better to practice Yoga in the morning and Jogging in the evening. However, it is not advisable to jog too late (after 7.30 p.m.).

Progress in Yoga practice becomes difficult if we abuse Weight Training, as the muscles tend to remain "hard" and inflexible. It is advisable to have separate routines for Yoga and Weight Training. Yoga should precede Aerobics whether or not Aerobics is done in the morning or evening. Many teachers incorporate Yoga into Aerobics or vice versa, which is not advisable. Both should be practiced separately.

In summary, for all the above sporting activities and exercise regimens, Yoga should

precede their practice. If there is no time for split regimens, a short Yoga sequence of specific Asanas followed by the desired sport is permissible. The person should prioritize the exercises depending on the need. Other factors influencing the combination of Yoga with different exercises include the lifestyle, local weather and the sleep wake patterns of the individual.

Q312

Can we practice Pranayama before a Scuba session?

A312

Nadi Shodhana Pranayama is beneficial. Cardiovascular strain caused by surface Swimming, Diving or Scuba Diving will be healthily neutralized and recovery from fatigue will be faster than normal by this pranayamic technique.

Q313

Is it sensible to practice Asanas and Pranayama after a Scuba Diving session?

A313

We should rest for at least an hour and then, practice recuperative Asanas. Inversions should not be done post diving (for some time), as the body will feel a pressure difference even though divers wear pressurized suits.

Q314

Is it tenable to breathe through the mouth while Swimming?

A314

This is medically incorrect. The nasal passages warm the indrawn air and circulate it to the lungs as already highlighted in the book. Swimming is "*aquatic Pranayama*". Hence, slow down the pace of the stroke and take time to coordinate the breath only through the nose. Fatigue will never be felt post Swimming if we follow this. Coaches would do well if they used this approach during training bouts. This rule does not apply to competitive Swimming, as there is little time to coordinate breathing in the yogic manner.

Q315

Is Swimming a symmetrical exercise?

A315

It is symmetrical as both sides of the body are used. However, there is no time to adjust the body alignment as can be done with Yoga. Even so, Swimming does less damage to the body compared to the asymmetry of other sporting events.

Q316

What kind of Asana and Pranayama practice can precede a hiking trip?

A316

Dog pose followed by inversions combined with half Halasana is adequate. Supta Padangusthasana is essential. In the "post hike" period, Viparita Karani followed by Supta Virasana is invaluable to relieve general fatigue and exhaustion of the lower limbs.

Q317

In general, prior to a mountain climb, what sequence of Asana and Pranayama would be helpful?

A317

One must conserve as much energy as possible. Therefore, a fifteen-minute session of Nadi Shodhana Pranayama followed by Dog pose, inversions and half Halasana is beneficial. After the climb and descent are over, Supta Virasana with a pillow between the thigh and calf muscle is extremely beneficial to relieve strain. Much depends on the kind of terrain to be climbed. A rocky terrain generates heat and Sitali Pranayama is beneficial. Asanas that generate heat (like back bends) would be helpful on wet moist terrain.

Issues on the Cardio-vascular system:

Q318

Does Asana practice have a role in reducing high cholesterol levels?

A318

This may be possible but requires a high intensity sequence. As age advances, we cannot use this as a therapy for patients. We cannot entirely rectify genetic influences (that may play a role) by Asana practice but the ill-effects of such influences may be countered to an extent.

Q319

Is it logical that dropping back from Headstand into a back bend (like Urdhva Dhanurasana) thrice a week will help lower cholesterol in our system?

A319

If this is the only Asana practiced, it is too presumptuous! Clinically I cannot vouch for this. Diet control and genetic factors play a major role. Even if other systems of exercise are being done along-side, it will not suffice. All Asanas are necessary.

Q320

I have heard that doing one back bend a day can prevent a heart attack (similar to an apple day that keeps the doctor away). Is this a correct perception?

A320

I wish it were that simple! Myocardial infarction is due to multiple factors. Drugs are not enough to treat this condition except in the ICU! To provide a holistic approach, we do not prescribe Aspirin or vasodilators alone but insist on dietary changes and stress management to treat an ischemic problem.

Similarly, several poses are necessary to prevent a heart attack. We must bear in mind that no single science is a panacea to prevent problems. Despite Yoga, one could develop a problem. In some cases, a combination of Yoga and medication can ward off an attack. It is not easy to determine the balance. Each case is different and we have to make an effort in the right direction. Yoga is the boon that helps us carry on effectively in spite of problems.

Q321

After quadruple by-pass surgery, can Yoga prevent recurrent blockage of the arteries?

A321

Yoga is necessary and immensely helpful. Initially, there is no guarantee that it can prevent a re-blockage in all cases. Each case has to be individualized. It is not as simple as practicing Yoga and everything turns out fine. *Once the advanced backward bending Asanas are mastered (Charka Bandhasana, Kapotasana etc.) protection against re-blockage is more feasible.*

Q322

Can Yoga help a person sixty-five years of age suffering from “weakness” of the cardiac chambers?

A322

An ultrasound is necessary to ascertain the state of the cardiac pump and ascertain if any age related scar tissue is present. Yoga can improve the general health condition and help maintain the cardiac pump parameters. We have to evaluate the degree of improvement on a case-by-case basis.

Q323

Aerobics and running improve cardio-respiratory efficiency. How does Yoga achieve this?

A323

I have answered this in detail in *A Matter of Health*. Aerobic exercises of any nature “irritate” the system though they make our body fit. Briefly, Yoga postures elasticize the lungs and heart in different geometric angles and maintain pump efficiency. Dynamic practice is the “Aerobics” of Yoga. Repetition of Urdhva Dhanurasana from Handstand, or Tadasana, or practicing Viparita Chakrasana several times in a single session provides excellent benefits. These Asanas stimulate the heart and lungs without exhaustion and irritation.

Asanas are recuperative and the nature of stimulus is very different resulting in serenity in the cells of the body. Asanas teach us to react from the “center” of the body to the “periphery”. This means, we conserve vital energy yet we can exercise without fatigue. We are also watchful of the energy that we lose in different parts of the body in the process of exercise.

In sporting events, by contrast, the control is on the periphery of the body and not in the central part. There is no time available to fine-tune the mind to the body.

Q324

Is it important to raise the pulse rate for fitness?

A324

Fitness is not just sweating away on an exercise routine and increasing the pulse rate. Sweating is good to wash off the unwanted fluids from the body and improve sluggish fluid dynamics. We cannot dispute the fact that it does not provide benefits. The yogic system is different in that it reduces the heart rate and recuperates the body. We sorely need this benefit due to our unhealthy lifestyles.

Remember that any exercise system is *task specific*. This means that a track athlete cannot excel in Swimming and a swimmer cannot run and a sprinter cannot do a marathon. ***A Yoga practitioner cannot run like an athlete but even when this is attempted, recovery is faster and occurrence of injury is minimal.***

We should be supple as a child and strong as a young adult. The blood circulation throughout the body should not dwindle, as we age, and we must maintain the exercise capacity of the system. This is fitness.

I have found that practitioners of Yoga tend to neglect leisure time activity and have no sporting activity at all. If they did, they tend to discontinue gradually. This is unhealthy for the body and mind. They avoid sports for the reason that they consider all such activity unhealthy and asymmetrical in its action on the body. Yoga can nullify this. Spontaneity should not be lost. The joy of playing a sport increases positive energy in the cells.

Q325

Should persons suffering angina with walking, (relieved by rest), stop exercising temporarily (or permanently)?

A325

Adequate research has shown that an unhealthy heart can get more blood supply with optimum exercise. There is no danger. Unfortunately, many physicians are unaware of how to institute an exercise schedule for a cardiac patient. Doctors advise such patients to walk which is inadequate. A high intensity supervised exercise regimen is beneficial. Even patients with heart failure can and should exercise⁶.

Angina does not indicate the end of an exercise routine. The human body can adapt even to this situation and we must continue to exercise in spite of this in a graded manner. Over a period, this will enhance the patient’s effort tolerance and coronary flow will improve. The patient then performs better in daily chores.

For unstable angina, Yoga is a safer regimen to start with. Later, with stability in specific postures we can add a treadmill routine. The reduction of anginal pain while walking shows the adaptation of the heart to the stress of walking. At every point, a physician’s supervision is required. Eventually (have no doubt) exercise becomes a well-tolerated regimen for the patient. The daily chores become pain free unless the patient suffers from class four angina. Surgery may be needed for unstable angina.

Q326

Can patients with Glaucoma (raised intra-ocular pressure) practice inversions? Can Yoga cure this without medical intervention?

A326

Several parameters have to be assessed first. The depth of the anterior chamber of the eye and the corneal curvature, risk factors like Diabetes, previous injuries to the eye and systemic blood pressure have to be ruled out. Medical monitoring is essential. Correct practice of inversions increases

the intraocular pressure but this is within tolerable limits of *safety*. Hence, there is no danger. In healthy persons, the increased pressure normalizes very quickly on completion of the pose.

Modifications of postures and proper preparation are necessary for patients. There is a distinct entity known as Normal Pressure Glaucoma that could respond well to Yoga practice. Yoga may not be able to cure Glaucoma in all cases but can definitely prevent worsening. The use of the bandage over the facial muscles and eyes is necessary. This stabilizes the fluid dynamics in the eye.

Medication or surgery may be necessary and Yoga can be practiced subsequently to prevent recurrence or worsening. *The practice of inversions from childhood could prevent rise in intraocular pressure.* We must be conscious of this approach.

Q327

Can a person with high blood pressure, bleeding from the nose, spinal and ear ailments with a co-existing spinal problem practice Yoga especially inversions?

A327

Certainly, provided the systemic pressure is under be control by medication. Regarding the nasal problem, we have to ascertain the cause of bleeding and the right method of Yoga practice should be introduced. The situation is less troublesome if we find no specific cause. Sequential practice of Dog pose, Uttanasana with the head resting on a stool is beneficial. Introduce inversions later. The nasal bleed will reduce in severity and frequency. Hypertensives can practice inversions too under medical supervision. The shape and size of the external ear canal should not alter in inversions. Position the head and neck properly. Then we will not feel a choking sensation in the ear. If the practitioner suffers from Otitis Media (inflammation of the ear cavity), inversions are better avoided until the ear becomes dry with conventional medical care. If there is a hole in

the ear, it is advisable to wait until it seals naturally or with surgery. Yoga practice is possible but needs a high degree of awareness.

For those with spinal problems, as the weight does not fall on the neck or lower back while practicing inversions there is no hazard. Usage of the right group of muscles with the right tension in those areas is important. This makes it possible for patients with spinal problems to practice inversions. Medical monitoring is essential.

Q328

Is it permissible to continue Yoga practice if we develop a conjunctival haemorrhage because of inversions?

A328

It is better to avoid inversions until the condition heals. There is no danger as the haemorrhagic spot gets spontaneously absorbed over a period. The cause is incorrect technique and preparation. Medical guidance is necessary for every patient.

Q329

Can Yoga prevent or cure Varicose Veins?

A329

There are several etiologies for this disorder. Yoga acts as a palliative providing excellent relief for patients whose valves are congenitally weak, deficient or absent. If Varicose Veins are acquired due to tissue weakness resulting from an occupational hazard (prolonged standing as in the case of police officers), Yoga can prevent or provide excellent relief and arrest further deterioration. The degree of damage at the time of commencement of treatment determines the extent of relief. Surgical procedures are seldom necessary. In a well-established case of venous “blow-outs”, Yoga cannot make the veins normal but can provide consistent relief and prevent thrombosis and other complications without recourse to medication. Hasta and Supta Padangusthasana are of great value along with Tadasana on the footrest. Virasana and Supta Virasana provide great relief preceeded by Viparita Karani.

Q330

Can Yoga benefit a varicose ulcer in the foot?

A330

Firstly, we have to assess the age of the patient, the size of the ulcer and the degree of damage. Medication is necessary and daily dressings are mandatory. A Doppler test helps assess the status (of venous and arterial blood flow) and later on to determine healing. Analyze all these factors and introduce Yoga.

Hasta and Supta Padangusthasana, Tadasana on the footrest and Viparita Karani are beneficial. Introduce inversions after these pose have provided relief. Healing will take a long time, as this is a weight bearing area. A surgeon's care is mandatory.

Q331

Is it advisable to practice Yoga during *acute* venous thrombosis?

A331

Rest is essential or the clot can break forming an embolus and cause a stroke if it lodges in the brain or an infarct in the heart or lung. This could be fatal. Medication is essential. Research has shown that habitual exercise may be beneficial⁷. After the acute event has healed, ***Yoga can prevent another episode***. The Asanas used depend on the area affected and the age of the patient. Supta Padangusthasana, Viparita Karani and Virasana with a pillow are invaluable. Subsequently, standing poses are highly beneficial to prevent recurrent clot formation.

Q332

How can Yoga help “non-healing” ulcers?

A332

The most common cause is Diabetes and the next is a venous ulcer. Correcting the root cause is important. This requires clinical guidance and the affected area has to be dressed daily until it heals. Depending on the cause, Yoga is invaluable in preventing a recurrence as

inversions drain unhealthy tissue debris allowing fresh healthy blood to percolate into the area. Surgery may be necessary. We can practice Yoga until the day of admission.

Q333

Is there a role for Yoga in treating anaemic patients?

A333

Anaemia has several causes. I would clinically determine the cause in each case and treat it rather than utilizing Yoga initially. Iron deficiency has to be rectified with medication. If blood loss anemia is diagnosed, the cause has to be determined. In cases of vitamin B₁₂ deficiency Yoga cannot help and injections of B₁₂ are necessary.

Inverted poses with or without props provide energy to the patient. Viparita Karani provides energy in a short period preceded by half Halasana. Supine Pranayama with prolonged exhalation is recuperative.

Q334

My cardiologist has recommended that I have surgery to replace the heart valves. I am 65 years of age and I have practiced Tai Chi and Yoga for many years. Can Yoga therapy help me avoid this surgery?

A334

This depends on the valve affected (tricuspid, mitral, aortic and pulmonary). We need to assess the degree of pulmonary hypertension. Yoga therapy introduced early can help postpone surgery. If the valvular narrowing is considerable, surgery is a good option. Post operatively, introduce Yoga or else health is a far-fetched idea. In some, it may be a palliative. Monitoring by a physician is essential.

The reader can refer to ***A Matter of Health*** for sequences of Asanas for cardiac disorders. Yoga can maintain cardiac parameters until surgery. The valves being tiny structures, may take time to become healthier.

Q335

Is it correct that the practice of Jalandhara Bandha during practice of Pranayama helps reduce blood pressure?

A335

There are pressure receptors in the neck area which when massaged by the pressure of the Bandha can result in a drop of pressure. However, this is a transitory change. Habitual practice could reset the pressure sensors to a different level beneficial to the practitioner. This is easier said than done. ***Other factors play a role in the sustenance of hypertension.*** The blood pressure may not reduce in all patients. The vagus nerve should be stretched well in Asanas to help control fluctuations in blood pressure.

Q336

Will Viloma Pranayama suffice to lower high blood pressure (Essential Hypertension)?

A336

Asanas are needed to restore the elasticity of the blood vessels (to a degree). Moreover, age and the duration of the ailment determine the successful outcome of Yoga as a therapy. In addition, medication may be necessary.

Issues on Respiratory Medicine:

Q337

Can Yoga cure Asthma? Many Yoga schools lay claim to this but in reality; I have never seen an individual free of wheezing attacks even though they practice Yoga.

A337

Yoga reduces the severity and frequency of attacks. So far, there is no evidence that any science can fully ***cure*** this condition. ***Asthma is highly variable, disappearing completely and spontaneously for long periods.*** Hence, we cannot claim that any intervention was beneficial. We can expect the lung to become healthier and stronger (as lung function tests will reveal) and the intensity of attacks are ***borne effectively by the patient.***

Asthma is a condition of a hypersensitive lung—a “touch me not” plant in which the environment plays a major role. If an asthmatic who suffers periodic attacks in a dry climate shifts to a moist climate and feels a great reduction in the attacks (this often happens clinically) does it mean that the condition is cured? The climate was beneficial to the person.

Hence, we must be very pragmatic in assessing the role of Yoga in Asthma. Asanas provide the proper channels to ventilate the choked areas. The methods are described in ***A Matter of Health***. Pranayama is invaluable in managing the frequency and severity of bronchospasm.

Q338

Is Pranayama useful for patients with chronic obstructive pulmonary disease (COPD—includes Asthma, Bronchitis and Emphysema)?

A338

This is very beneficial but not initially. If the patients cannot breathe well at rest, they cannot practice Pranayama. The relevant Asanas include Supta Virasana on pillows, Viparita Dandasana on the rack and several others (refer to ***A Matter of Health***). Practice Pranayama as and when you find improvement in the elasticity of the lungs and intercostal muscles.

Q339

Is it correct that on cessation of smoking the lungs regenerate in seven years? Does this apply to cases of Emphysema as well?

A339

We cannot be emphatic on the period needed for regeneration. A young ex-smoker has a better chance of healing. Emphysema by definition is an abnormal permanent dilatation and irreversible damage. In the early stages, microscopic repair could happen though not of clinical value. Healthy repair is possible if we practice Yoga. ***Nature may not always succeed in healing; Yoga aids and hastens nature at times.***

Yoga will help in such a condition to enhance the quality of life. All supported back bends are beneficial. Once the condition improves, supported standing poses and passive seated forward bends are useful. Pranayama is highly beneficial after Asanas have done their share of work.

Issues on the GI (gastro-intestinal) tract:

Q340

Can age-related drying of salivary secretions be normalized by Asana practice?

A340

The glandular secretions dwindle, *as we never rest our mind*. Yoga practice quiets the senses preserving the secretory organs (the nervous stimuli that release secretions are inhibited). Pratyahara in Asana practice is the key method. Exercising in silence is important. *The contemporary habit of using music (of any kind) during exercise is highly damaging to the senses*. Sometimes, even music is noise.

It is easier to prevent this condition by habitual Yoga practice from childhood. The earlier we begin Yoga practice, the better the result. The relevant Asanas include inversions, Simhasana and back bends. Sitali Pranayama is beneficial.

Q341

Can Yoga help reflux Oesophagitis? Does this ailment preclude inversions?

A341

The organs inside the body are not placed as potatoes in a sack, which when inverted will tumble down! They have attachments to various areas and intra-abdominal tension plays a role in proper anatomical and physiological functioning. *Yoga improves both the function of the valve at the gastro-oesophageal junction and optimizes the intra-abdominal tension*. Alignment of the dorsal spine is the key to relief. All Asanas are invaluable. Supta Virasana on pillows, Viparita Dandasana on a rack, Headstand on ropes (or independently), chair

Shoulderstand, Setu Bandha Sarvangasana and Viparita Karani to name a few. Inversions are not contraindicated. Understand the correct method of using the relevant muscles.

Q342

Can Yoga help Anorexia Nervosa?

A342

Anorexia is partly a disorder of body imagery and therefore in the psyche. Hence, counselling is necessary. Along with this, a suitable Asana sequence can restore health. Avoid strenuous practice initially. Passive Asana practice should lead to independent practice later on. Inversions are of great help. Seated forward bends with support are beneficial to reduce vomiting and increase hunger.

Q343

What is the role of Yoga in proper (and improper) digestion?

A343

Yoga can help if there is poor assimilation of food with low energy levels. Yoga cannot help in gaining weight (that is clinically significant) due to poor assimilation (though a healthy appetite). Assimilation may improve with Yoga practice, but it is difficult to gain weight. Analyze dietary factors to eliminate excess nitrogenous substances that cause flatulence.

Twisting poses enhance intestinal motility to eliminate accumulated wind in the bowel. Supta Virasana benefits postprandial fullness in the stomach. Inversions are invaluable with their variations to provide a sense of lightness to the body organs. Proper timing is necessary.

Eat at regular intervals according to a well-established timetable. Move about and fill the day with activities so that the food is well digested. Develop a biting hunger before sitting down for a meal. Nowadays many do not know what it is to be hungry and thirsty.

Bhagawan Sri Sathya Sai Baba

Q344

Recurrent belching (especially post prandial) seems to be a common problem. Some persons belch whenever different parts of their body are pressed lightly. How can Yoga help?

A344

Twisting postures, inversions with variations if possible, all forward bends and seated twists are necessary. Back bends are invaluable. Proper timing is mandatory in all poses. The value of simple diet devoid of (or moderate) spices should not be underestimated. Consume food that is freshly prepared and as early as possible.

Eat in moderation and live long. This is the advice handed through the ages by the seers of the past. This advice is seldom heeded. People fill themselves with such large quantities of food that they find it difficult to rise from the eating plate. Ruining the digestive system by consuming heavy rich foods, the affluent are proud when they host costly banquets.

Bhagawan Sri Sathya Sai Baba

Q345

Can Yoga benefit Hiatus Hernia?

A345

If we observe correct spacing of the muscles and organs in Asana practice, this condition is reversible. Bear in mind that any Asana that increases the intra-abdominal pressure if incorrectly performed can cause this ailment.

Inversions with observation of proper timings while performing them cure the condition. Twisting postures are invaluable along with back bends. Supta Virasana done after a meal relieves post-prandial discomfort. Viparita Dandasana and Setu Bandha Sarvangasana on props are very beneficial.

Practice Headstand for a sufficient period. No significant physical, physiological or biochemical change can occur (good or bad) if we practice inversions for one to two minutes.

We secure maximum benefits if we optimize the timing. Chair Shoulderstand is very valuable.

Q346

Can Supta Virasana and back bends cure an active, bleeding peptic ulcer?

A346

Avoid Yoga when bleeding occurs. Medication is mandatory; and if the bleeding is excessive, emergency care might be required. Moreover, many cases of peptic ulcer are due to a specific infectious agent and hence the role of Yoga is strengthening the defence mechanisms of the body. The appropriate antibiotic needs to be prescribed. It is also essential to rule out the various causes for ulcer occurrence and eliminate the possibility of malignancy. Yoga practice can make the body sensitive enough that the medication may work better. Yoga prevents relapses if physical and mental stress causes acid peptic disease.

Q347

Can Yoga arrest or cure Cirrhosis of the liver?

A347

Cirrhosis is an irreversible pathological change with scar tissue and fibrosis. However, to prevent further deterioration in health (usually inevitable in many patients), Yoga is the probably the only science that can help. Inversions along with twisting Asanas are beneficial. Backward bending Asanas are invaluable as they provide space for the liver to “breathe”. Parivrtta Janu Sirsasana is very helpful to massage the liver. A “cure” is not the aim of treatment. Prevention of deterioration is more important.

Q348

Does Yoga have an effective role to play in the treatment of Hepatitis C?

A348

This requires a combination of medical management and Yoga. To prevent deterioration, Yoga is beneficial. Weight loss is apparently

beneficial for such patients and this causes reduction in fibrosis in the liver⁸. Twisting poses and Parivrtta Janu Sirsasana are beneficial to prevent progression of fibrosis and shrinkage. **Medication is essential.**

Q349

Are twisting poses potentially unsafe for someone who has suffered from Hepatitis and whose liver has residual lesions?

A349

If adequate time elapses from the healing phase to the start of Yoga practice, (this is individualized) there is no danger. Periodic medical follow up is necessary. Initially, passive poses are beneficial. Soothing poses with support like Supta Virasana and Viparita Dandasana on the rack, inversions followed by seated forward bends are advisable. Practice twisting poses with a support for the abdomen if there is pain. Medical guidance is essential.

Q350

Can Asanas help the build up glucose in the liver?

A350

There is no research yet done on this-at this point of time it is theoretical.

Q351

Stress increases blood glucose levels. Do Asanas have a role to play in this situation?

A351

We need to differentiate between mental and physical stress. We can counter the mental stress with the yogic precepts of yama and niyama. Asanas can easily tackle physical afflictions that occur without mental stress. Stress is a challenge and if our response is inadequate, it overcomes us. Correct mental attitudes combined with healthy Asana practice go a long way in reducing the amount of damage on the body. Asanas remove physiological stress due to the toxins and correct mental attitudes prevent this from

forming again. Asanas can prevent (not in all cases) blocks in arteries that occur with increased sugar levels due to the force of flow provided in certain stretching or contracting movements.

Q352

Is Yoga helpful to avoid formation of Gall Bladder stones?

A352

Habitual practice of standing twisting poses like Parivrtta Trikonasana and Parivrtta Parsvakonasana, seated twists like Marichyasana III and Ardha Matsyendrasana and Parivrtta Janu Sirsasana prevent gall-stone formation as bile stagnation is prevented. However, in some cases stones may still form. Surgery may not be needed unless there are multiple small stones or if they grow. There is always a danger of acute obstructive cholecystitis and malignant change. Surgical removal of the Gall Bladder is necessary in specific cases. We can live without a Gall Bladder.

Q353

Can a patient harbouring Gall Bladder stones practice Yoga? Can Yoga practice expel the stone and prevent reformation?

A353

The size, number of stones and the age of the patient are influencing factors. ***Yoga practice is contraindicated at the time of an acute attack of Cholangitis*** (inflammation of the Gall Bladder with jaundice). Yoga can help expel the stone but not in all cases. Yoga definitely prevents reformation as Asanas prevent stagnation of biliary secretions. Apart from stagnation, there are other causes for biliary stone formation (excess fat in the diet, smoking etc.) that need to be considered when applying Yoga as therapy.

Q354

Are L-shaped Asanas (Dandasana on a rack, Viparita Karani) beneficial for the Gall Bladder?

A354

L-shaped Asanas are useful to soothe the Gall Bladder. Twisting Asanas are superior to squeeze out the bile. This prevents stagnation and maintains healthy biliary flow dynamics. L-shaped Asanas cannot achieve this. After an attack of Cholecystitis, we can resume Yoga practice with L-shaped Asanas. Setu Bandha Sarvangasana on a stool is more stimulative than Dandasana or Viparita Karani as it stretches the liver (the Gall Bladder is on the under surface of the liver).

Q355

Do insulin levels increase with Yoga practice?

A355

Firstly, when we indulge in heavy intensity exercise of any kind, sugar levels rapidly reduce (the muscles uptake sugar rapidly) and the liver releases glucose to maintain normalcy for vital organs. To prevent hypoglycemia, the insulin levels *fall* correspondingly. Later, with rest and recovery, the insulin levels rise paralleling the rise in sugar from the liver, (this is to maintain the blood glucose at a normal level).

When Asanas squeeze a gland, the secretion ***cannot be expelled instantaneously*** as the pressure can hamper release. Apart from this, unless there is a large output of sugar from the liver to the muscles, reflex insulin adjustments cannot happen. Yoga practice does not demand a heavy supply of sugar to the body tissues like aerobic systems do. This is not surprising as the methodology of Yoga practice is unlike other systems of exercise. Insulin levels pre and post Yoga remain within normal limits.

Q356

What poses are recommended for non-specific colitis?

A356

The poses vary according the age and the capacity of the practitioner to understand subtle nuances of the poses. In general, Supta Virasana, Setu Bandha Sarvangasana on cross bolsters, Dog pose, inversions (no variations initially),

half Halasana, Supta Konasana on the stool and Viparita Karani are useful to start with. When the condition is very stable, introduce twists after which relapses will reduce. Ubhaya Padangusthasana with the belt is very beneficial. Ulcerative Colitis and Crohn's disease require medical monitoring as bleeding can occur with incorrect practice. The mental status of the patient should also be treated.

Q357

Can Yoga help in irritable bowel syndrome (IBS)?

A357

The cause of IBS has to be ascertained. Any infection has to be treated. Apart from certain specific causes like Amoebiasis (requiring medication) or other conditions that can cause a "state" of IBS; this is usually a ***psychosomatic disorder*** with specific physiological manifestations. If the patient learns to apply Yoga philosophy in this situation, it can be very helpful. Calming the mind greatly reduces the frequency of symptoms of IBS.

Therapy has to be individualized. Inversions and back bends are very helpful. Concave standing poses and supine resting poses are valuable. Habitual practice of Yoga is necessary for relief. Nadi Shodana is invaluable as this rests the nerves and the colonic hyper-contractility reduces. Homeopathy can be beneficial for IBS providing excellent relief. Certain cases may need a colonoscopy test.

Food, Head, and God, these are inter-related.

Bhagawan Sri Sathya Sai Baba

Q358

Can Yoga prevent or cure Haemorrhoids, fissures and chronic constipation?

A358

Firstly, a good diet is essential. Lack of fiber is one of the main reasons for the above conditions. Poor posture while sitting can pressurize the anal area and produce piles. The role of Yoga depends

on the size of the piles. A large mass needs surgery. Early cases of Haemorrhoids can be treated with Asanas alone. Inversions are of prime value. Homeopathy is also invaluable.

If a fissure is acutely painful, medication is necessary. Recurrent fissures can easily be treated with Yoga though some cases may need surgery. Inversions are invaluable. Asanas that stretch the anal area like Dog pose, Prasara Padottanasana and Supta Konasana are beneficial. Homeopathic medication can relieve the pain of a fissure effectively.

Dietary factors are very important to rectify constipation. Yoga cannot relieve constipation instantly! It takes a lot of time to change the inner contractile responses of the intestines through Yoga. Inversions with prolonged timing (Headstand, Shoulderstand and their cycle) are valuable to stimulate the colonic contractions. Twisting poses are invaluable. Proper toilet training in childhood goes a long way to prevent constipation. If the nerve plexuses in the lining of the colon and rectum are deficient by birth Yoga cannot help much.

Issues on the Renal system:

Q359

Prolonged and recurrent use of antibiotics is harmful for recurrent urinary tract infections (UTI) in women. Is there any other way to manage this condition?

A359

If there is no anatomical cause (blocks in the urethra, stones etc.) for the UTI, then Baddha Konasana and Supta Baddha Konasana are advantageous apart from other specific postures. A medical consultation is mandatory to help the patient deal and manage symptoms of recurrent UTI, which can happen despite practice of Yoga. Eventually Yoga will help curtail the incidence of UTI.

Q360

Does Yoga have a role in Chronic Renal failure?

A360

The cause of renal failure has to be determined. If it is due to a toxic agent, its removal could improve the condition. If renal failure is due to Hypertension or Diabetes, these have to be controlled. If blood urea and creatinine levels are elevated, Yoga may not be able to normalize this. Hence, conventional medical management is always essential. However, no science apart from Yoga can maintain health of the kidneys. Medication is essential and Yoga combined with this helps in preserving the functioning of the kidneys.

Issues on Urology:

Q361

Can Yoga help the problem of an enlarged prostate (one that has tested negative for cancer)?

A361

The more we exercise, (particularly Yoga) the lesser the chance of suffering an enlarged prostate. Asanas that help include inversions and their variations. Baddha Konasana and Supta Baddha Konasana are invaluable. Regular practice of seated forward bends prevents increase in size of the gland owing to the pressure on the base of the bladder. Ardha Baddha Padma Paschimottanasana is of prime value in prevention. The size of the gland has to be assessed (by physical examination) and confirmed by an ultrasound procedure.

Once the enlargement has occurred, each case is different. Depending on the symptoms of the patient, surgery may be necessary for a gland more than a certain size. Residual urine volume determined by an ultrasound helps assess the severity of the condition.

Other factors determining the success of the yogic approach include the age and general health status of the patient. The flexibility of the body influences the quickness of relief obtainable.

Issues on the Reproductive system:

Q362

Is Yoga helpful to treat Amenorrhoea (absence of menstrual flow)?

A362

The cause has to be determined. Introduce Yoga after the investigations are done. There are two separate conditions-primary and secondary amenorrhoea. It may be pituitary-hypothalamic dysfunction or ovarian. The prescription of Asanas varies accordingly. Inversions and twisting poses may be beneficial. Medication may be necessary along with Yoga.

Yoga can help improve the bodily response to medication. Yoga may not succeed in all cases but enhances reproductive health in a general sense. If conception occurs, the practitioner will have excellent health to maintain pregnancy due to Yoga practice.

Q363

Does excess menstrual flow (menorrhagia) benefit from Yoga practice?

A363

Yoga is invaluable to provide relief. Inversions with proper timings are essential. Supine poses like Supta Virasana and Supta Baddha Konasana are beneficial. Concave standing poses help by strengthening the sensitive uterus and preventing excess shedding. There are subsets of patients where Yoga fails to provide relief for unknown reasons.

Q364

Can Yoga help induce ovulation in women with anovulatory cycles?

A364

The cause of this has to be determined. This involves endocrine manipulation and we have to keep the options open. Practice inversions and their variations along with back bends. Proper timing in the postures is necessary but we cannot be dogmatic regarding its benefits.

Q365

Many women have irregular menstrual cycles. How can Yoga help?

A365

Assuming all causes have been ruled out, it could be idiopathic. There are three types of cycles-regular, regularly irregular, and irregularly irregular. We need to identify the category into which the patient fits in. There is no need to change the rhythm of the cycle if ovulation is taking place. Conception need not pose a problem as there are patients who conceive despite having cycles once in 45 days or even once in a few months.

A woman's cycle is subject to change after marriage due to the different psychological atmosphere. If a mental stimulus can upset the rhythm, we understand that the mechanisms are very subtle. We must tackle the subtler stimuli on a physiological and neurological plane. Practice Baddha Konasana, Upavistha Konasana and seated forward bends along with inversions. Healthy attitudes are most beneficial.

Q366

What poses can help in a situation of premenstrual syndrome?

A366

The mental make up of the patient is important for PMS (premenstrual syndrome). On the non-menstruating days, practice all Asanas taking care to keep a concave spine as far as possible. Inversions are highly beneficial. They drain the stagnated uterine blood and secretions and irrigate the organ with fresh blood. Once menstruation commences, forward bending Asanas, Baddha and Supta Baddha Konasana are advisable. All forward bends soothe the mind and Supta Baddha Konasana relieves congestion in the uterus.

Q367

Can we practice Yoga during menstruation? What can Yoga do for the woman who suffers from uterine cramps during her periods?

A367

The type of Asana practice during menstruation is specific. Generally, seated forward bends, Supta Virasana and Supta Baddha Konasana relieve menstrual cramps. Avoid inversions as this could prevent drainage of the menstrual fluid (unless it is excessive). Avoid intense back bends and standing poses to prevent irritation of the uterus.

Q368

During menstruation, can we practice twisting postures?

A368

Twisting poses are not advisable as the uterus is actively shedding the lining and bleeding would be stimulated. They can be restarted a day or two after the last day of flow. All forward bends can be practiced safely.

Q369

Is it correct that women should refrain from practicing certain kinds of Asanas and Pranayama?

A369

This is medically incorrect. There are no restrictions for women. Follow the correct method of Asana practice bearing in mind the difference in anatomy.

Q370

Is Bakasana harmful for women during their fertile years?

A370

If the breathing is unrestrained in the pose, and the weight is not distributed exclusively on the pelvic organs there is no problem. Men have stronger arms and tend to use these muscles in the pose. Women tend to make up by throwing the weight on the pelvic organs, which is incorrect.

Q371

Can Yoga treat DUB (dysfunctional uterine bleeding)? Is hysterectomy necessary in such cases?

A371

The patient may be able to avoid surgery when she reaches stability of practice. DUB is a complex situation and no single method has proven to be useful. Hormonal disturbances play a role and manipulation at this level is beneficial along with Yoga (sans Yoga, the patient will have more exacerbations). Yoga provides a tremendous control to the situation if practice is begun as soon as possible. Variations in inversions are of prime help. All other Asanas are necessary.

Q372

Can Yoga prevent or cure Endometriosis?

A372

Prevention is possible for all. Commence Yoga as soon as the diagnosis is made, as relief is easier. All postures are mandatory with emphasis on variations in inversions. Avoid forward bending Asanas during menstruation (for some time). In Endometriosis, the pelvic organs suffer lack of space (adhesions can cause pain) and hence the rationale for avoiding all forward bends. Medical monitoring is essential. Practice Yoga twice a day.

Q373

Can Yoga help women suffering from leucorrhoea (white discharge)?

A373

We have to ascertain the cause. Infections and malignancies have to be eliminated. Usually it is idiopathic. Yoga is the only tool that can prevent a recurrence or cure the condition in idiopathic recalcitrant cases. Baddha Konasana and Supta Baddha Konasana are invaluable. Upavistha Konasana is beneficial (maintain the concavity of the spine in the pose). Local hygiene is mandatory.

Q374

Can Yoga help increase the sperm count?

A374

Clinically, we can manipulate the count with medicines and have periodic check ups rather than insist on a tenacious Yoga routine, which many find it difficult to perform and practice consistently. If the cells are viable, then nature will do the job. The quietness induced in the cells of the body is conducive to gestation. It is difficult to be dogmatic as to whether Yoga will work at this level as we have no studies to corroborate this to date.

Q375

Is it possible to treat infertility with Yoga and help conception?

A375

The last word on infertility is unavailable. In spite of best efforts, conception may not occur. Often it can happen impromptu. We do know that the mind should be relaxed for conception to occur. Some of the problems concerning infertility include poor sperm motility, anti-sperm antibodies and receptor abnormalities and so on. It might be difficult for Yoga to set right these problems but we can keep an open mind on this. Interestingly, current studies show that endurance athletes might suffer alterations in reproductive parameters that are not conducive to health.

Q376

Are there any contraindications in Asana practice with an IUD (intra-uterine device) in situ?

A376

We can practice Yoga safely. Make sure that the device does not migrate in postures.

Q377

Can you recommend an Asana sequence for healthy women who want to prepare their body for pregnancy?

A377

This depends on the age group and the individual condition of the woman-her level of flexibility and time available for practice. Practice all Asanas until conception after which modifications are necessary as pregnancy advances. If the conception is a first, practice Yoga carefully, as we do not know how the pregnancy can progress.

Q378

Can we practice Yoga in the second month of pregnancy (first conception) or should we wait until the 14th week of pregnancy?

A378

With proper medical monitoring, we can practice Yoga from the day of conception. Clinical guidance is advisable to determine if the pregnancy faces problems due to Yoga practice. The Yoga teacher should refer to the attending physician in case of any problem. Clinical guidance is also necessary to monitor non-Yoga related situations like placenta previa, cervical os incompetence to name a few.

Q379

What poses would be appropriate for a healthy pregnant woman (first trimester) to alleviate morning sickness?

A379

If the woman has practiced Yoga prior to conception, Supta Virasana, Supta Baddha Konasana, Upavistha Konasana, Viparita Karani and Setu Bandha Sarvangasana on pillows are very beneficial. Introduce inversions after the above-mentioned Asanas have provided relief. If she is a beginner, take care to watch for uterine irritation and bleeding.

Q380

How soon can a woman resume Yoga Asanas after a normal delivery? What specific exercises help resize the abdomen to a healthy shape again?

A380

Resume Yoga after menstruation restarts. Urdhva Prasarita Padasana done dynamically with repetitions of 50-100 per session will help firm the sagging abdominal muscles. It is essential for the episiotomy to heal which will take six months. Hence, it is prudent to resume dynamic exercises after that period.

Q381

How early can a woman who has had a C-section resume Yoga practice?

A381

Please do not forget the rule for healthy scar healing (refer to question 260). However, practice of Viparita Karani, concave Uttanasana, Upavistha Konasana and Baddha Konasana on a pillow and supine poses like Supta Padangusthasana may be advisable after three months. *Practicing stretches too prematurely can cause an incisional hernia.*

Q382

Are there Asanas that help increase milk flow in lactating women?

A382

Genetic, hormonal, dietary and psychological factors influence milk flow. Generally, *vigorous aerobic exercises reduce lactation*. Practice Inversions along with Pranayama. Passive back bends are helpful. Active back bends are advisable (if possible) as the milk is squeezed out of the ducts. Back bends could help prevent a milk abscess (not in all cases).

Q383

Can you give a sequence of Asanas for a healthy post-partum?

A383

Pranayama can be practiced as early as possible (in the case of a vaginal delivery) provided the sleeping hours of the mother is not too erratic.

After the episiotomy has healed, if the woman has practiced Yoga before pregnancy, introduce all Asanas gradually. If she is a beginner wanting to improve her health after delivery, adopt a beginner's sequence.

Q384

Can Asanas help the uterus return to its pre-pregnant shape and size?

A384

Nature does the job very well. However, it is prudent to practice Yoga. All Asanas are useful as the stimulus of exercise helps the organ to shrink. Baddha Konasana and all passive forward bends are very helpful. Twisting poses are invaluable.

Q385

Can Baddha Konasana postpone menopause?

A385

Menopause is a natural change that is genetically determined. Why interfere with it? There are those who say it is natural to menstruate and menopause is unnatural and go on to make a medical marvel by helping women have children at the age of 65 years or so. There are other implications to this. In the situation mentioned above, the child is likely to be without a parent earlier than its peers. Of course, for those who have never had a child, it is a source of great happiness if they could beget one. A general rule is not applicable-we have to make our individual decisions.

Nature has its own order, poise, reasons, discipline and its delicateness. We must sail along with humility. Maybe menopause is nature's way of inducting birth control. We must learn to accept menopause and there are methods of remaining healthy that Yoga provides.

Q386

Can Yoga help Vaginitis and painful intercourse especially after menopause?

A386

The cause of Vaginitis has to be identified. Any infection has to be treated and local hygiene is of paramount importance. Many well-educated women tend to neglect this. Supta Baddha Konasana, Baddha Konasana, Upavistha Konasana and inversions coupled with variations are invaluable. A healthy fluid intake is essential. With regular practice, a woman can prevent painful intercourse even if she is post-menopausal.

Q387

Is it correct that women should avoid Weight Training as the uterus could prolapse? Should patients with coronary ailments and those suffering a hernia avoid this type of exercise?

A387

If we are merely looking for a macho look, Weight Training may be advisable. It does give some specific benefits. For a person who wants to reach the sophisticated level of health, Weight Training is unnecessary. Excessive Weight Training will damage the delicate female physiology.

If the uterus has prolapsed, practice Asanas to rectify the problem and then continue Weight Training. A healthy woman will never face problems with Weight Training if it is done rightly.

A hernia can be treated surgically or otherwise (if possible) and then the patient can resort to Weight Training under the supervision of a physician. Cardiac patients can certainly practice Weight Training in a carefully monitored manner. Retention of breath while training should be avoided (this will help avoid angina for susceptible patients).

Issues on skin ailments:

Q388

Does Yoga have a role to play in treating baldness (Alopecia)?

A388

We have to identify the cause. For age related baldness, genetics plays a strong role. Infections and endocrine disorders can cause baldness. Radiation can cause Alopecia. Hence, we treat the cause. Practice Headstand in such a manner as to prevent traction on the hair roots as much as possible.

Q389

Can Yoga treat the problem of Acne?

A389

We must bear in mind that the cause of Acne is multi-factorial. At puberty, this is unavoidable due to hormonal changes. Maintaining a healthy low fat diet with predominantly leafy and succulent vegetables and a face wash several times daily with a suitable face wash is helpful. This is a self-limiting problem after puberty. Headstand and Shoulderstand can improve blood flow to the face, help healthy healing of the Acne, and help in the management of pubertal changes. A weekly oil bath is mandatory.

Q390

Can Yoga prevent sagging of facial skin? Can women use Yoga to maintain cosmetic health?

A390

Aging is an inevitable phenomenon. Yoga practitioners age slower. Sagging of facial skin will occur but this appearance will be different when compared to a control subject-the sagging will be of a healthy nature. Genetic factors play an important role.

Q391

Can Yoga benefit profuse sweating of the palms?

A391

If no specific medical ailment exists and the condition is genetic, Sitali Pranayama may be useful. Inversions followed by seated forward bends are helpful. Savasana is helpful to stabilize

the activity of the sweat glands. Use bolsters and weights on the palms in this pose. However, we cannot totally abolish the excessive sweating. Habitual oil bath is beneficial.

Q392

Can Asanas prevent or cure cracked skin on the soles?

A392

A common cause is due to walking with bare feet on rough surfaces for prolonged periods. Each person's reaction to the floor is different and many develop cracked skin because of this. Use proper footwear, particularly at home (often neglected). Once formed, Yoga could prevent worsening of the fissures but cannot seal them. A simple method is to wash the feet in warm saline water at bedtime and apply a nourishing cream to the skin. Virasana with a pillow will prevent worsening and easy re-occurrence of such a situation. Standing poses will also help.

Q393

Are formation of corns and callosities preventable by Yoga practice?

A393

If we learn to stand without asymmetric weight distribution, this will not occur. Standing poses and inversions are invaluable. Once formed, Yoga can abolish the pain quickly but may take a long time to efface the corn. An easier way to efface the toughness of the skin would be to dip the affected part in hot saline water daily and then apply a moisturizer to the affected area daily for a month or more. Yoga can prevent reformation. Virasana and Supta Virasana are invaluable.

Q394

What role can Yoga play for skin disorders in general and specific ailments like eczema and Psoriasis?

A394

As a clinician, I would say that Yoga is useful to maintain the suppleness of the skin and promote

healthy healing. Medication is necessary. Yoga may not abolish these problems on its own but helps change the quality of blood flow to the affected area.

Q395

Can Yoga benefit those suffering from unpleasant body odour?

A395

Yoga can irrigate the sweat glands and stimulate them by massage to eliminate the secretions better. During exercise, the skin should be exposed to the atmosphere in different directions to aerate the sweat glands. A balanced diet with plenty of green vegetables is necessary. All Asanas are important with emphasis on a healthy stretch while practicing. Standing postures and back bends particularly benefit the armpit area. Pranayama of the Sitali variety is beneficial to change the quality of the bodily secretions.

Q396

Can Yoga relieve the pain of a keloid scar (a thick scar that forms for some persons after a surgery and can be troublesome)?

A396

Keloid formation is an individualistic body reaction and we do not understand the working of such responses yet. Plastic surgery can help to some extent. Yoga can easily relieve the pain. Asanas are prescribed depending on the affected area. Stretch the affected area carefully in the posture as over stretching can cause pain. Monitoring by a surgeon is essential.

Issues on Endocrinology :

Q397

Can Yoga prevent excess height gain? The recommended poses include inversions.

A397

Height gain is genetic. The theory that inversions may regulate secretions from the pituitary gland needs to be investigated.

Q398

Weight loss with regular aerobic exercise and a balanced diet seems possible, but does Yoga effect weight loss in pathological states?

A398

Yoga regulates body metabolism, (do not translate this as a miracle weight loss system), firms and tones up muscles and makes the whole body supple. While you might not show loss on the weighing scale, a trimmer look gives such an illusion.

Some healthy persons do lose weight with Yoga, though this not much. Yoga works on the internal organs but a “cosmetic effect” is difficult to achieve. In pathological conditions as in Hypothyroidism Yoga cannot help weight loss but provides other benefits. Even aerobic exercises may not help in such conditions. We have to rectify the clinical disorder.

Q399

Please comment on the role of Yoga in thyroid disorders.

A399

Disorders under this umbrella include hyper and hypo functioning (under and over functioning), and neoplasms both benign and malignant. The reason for thyroid malfunctions is still debatable.

In cases of hypo or hyper-functioning where medicines are unable to provide total relief, *Yoga is a valuable adjunct as symptomatic treatment*. For instance, Yoga can improve poor energy levels in a hypothyroid patient on medication. Passive poses initially, followed by active Yoga practice later are the key to relief.

Q400

Can daily practice of Shoulderstand regulate an over or under active thyroid gland and restore normal function?

A400

Yoga provides neurological cellular quietness and or stimulation that medication cannot. *It is incorrect to presume that Shoulderstand can*

work on its own to correct a clinically significant thyroid malfunction. An over or under active gland definitely needs medication. The drugs can be continued safely for a prolonged period under medical monitoring.

Q401

Some teachers mention that deep abdominal breathing in Savasana (between Asanas) and repeating Savasana at the end of class will remove all lactic acid released into the system during Asana practice. Is this concept tenable? Can we repeat Savasana in between every Asana?

A401

Lactic acid is a by-product of glucose metabolism. The quantum of production is influenced by many factors-exercise, mind, stress, diet and climate to name a few. Considering exercise, the trained athlete may manage with less production or more efficient clearance. Both factors may operate and it is difficult to pin point the role of each. Normally, lactate is usually produced under anaerobic conditions. The more severe the exercise, quicker is the build up of lactate. Intense exercise uses up the body stores of oxygen rapidly and this is replenished to a point beyond which cellular exhaustion occurs.

When oxygen supply improves post exercise, lactate can be converted to another substance known as pyruvate and this can further be reconverted to glucose through a series of enzymatic reactions. Energy is formed in the process of conversion of glycogen to pyruvate.

The time taken for lactate clearance from the system varies with the intensity of exercise and its duration. Moreover, there is a state known as maximum lactate steady state (MLSS) where no further lactic acid is produced and a plateau is reached. Some studies have shown that for plasma lactate to reduce half way towards normal values takes fifteen minutes. To further reach normal values may take longer-approximately forty-five minutes (for complete normalcy).

Hence, our body has a method to restore levels of glycogen (storage form of glucose) and balance the levels of lactic acid production and removal. The type of muscle fibers used during exercise (slow or fast twitch fibers) also determines removal. Yoga does not use fast twitch fibers as the system is slow.

Yoga is a “steady state” exercise unlike many others. We do not push the body to an extreme. Secondly, Yoga is static and the strain is less than dynamic exercises.

Pilot studies have shown that in trained Yoga practitioners, the amount of lactic acid formed during Yoga is much less than while running or athletics. However, mere resting does not hasten its excretion from body. This is a fanciful concept. We may feel fresh with Savasana (normally practiced for 5-10 minutes) at the end of a session of Yoga but this does not mean that lactic acid has been removed from the body. Physiologically, this will take longer.

The amount of lactic acid formation during Asana practice also depends on the style of Yoga practice.

If Asanas are done with mere inhalation and exhalation without engaging the various muscle groups properly, the amount of lactic acid produced will be closer to basal limits. On the other hand, if too much effort is put into practice excessive lactic acid formation will occur.

This is one reason that the “Iyengar” school teaches the optimum method of Asana practice. A final factor is the sequence of Asanas that may determine quantum of lactic acid formation. A sequence that involves intense back bending Asanas may generate more lactic acid than otherwise. If we practice only Dog pose, Headstand and Shoulderstand, very little lactic acid may form. The permutation is vast and hence it is difficult to be dogmatic on experiments with Yoga.

Lactate production appears to be decreased in the luteal phase of the menstrual cycle when estradiol and progesterone levels are elevated.

Since women are advised to practice forward bends during periods (which are passive exercises) the amount of lactate production may be less. Hence careful evaluation is needed.

It is improper to repeat Savasana in between Asana practice. Resting and exercising alternately is harmful! Imagine a runner resting and running again. This flogs the body. Practice Savasana at the end of the session.

Abdominal breathing during Asana practice is not enough. In some Asanas, thoracic breathing predominates and this is natural for that pose. Pilot studies have shown that Pranayama **does not increase** lactate production in habitual Yoga practitioners. The reasons are to be determined.

Experiments have demonstrated that hypoventilation during conventional exercise delays removal of lactic acid from the system. It is not just breathing, but also ***the entire process of Yoga practice and the nature of the mind during or after practice, that removes lactic acid efficiently.***

Q402

Can Yoga help control hypoglycemia and prevent future Diabetes?

A402

Preventing a fall in blood sugar is not difficult. Uttanasana with support and seated forward bends will prevent sudden drop in sugar levels. Supported inversions will help. Standing poses and back bends will exhaust but regulate the system in the long term. We need to estimate the pancreatic cell reserve, genetic influences, environment, the mind and other factors to prognosticate if hypoglycemia will turn in to frank Diabetes.

Issues on Neurology:

Q403

Does Yoga improve concentration?

A403

Concentration is required to execute Asanas. Is this then a chicken and egg story? If we regulate

the mental input, then Asanas have a better effect. Alternatively, begin with what little we have (maybe total disarray in thoughts); habitual Asana sequences followed by Savasana will result in quietness. Later, this will help us to perform the Asanas better, reinforcing the quietness.

Concentration is an automatic faculty and is present in what we like to do. At other times, it is partial. Yoga philosophy and Asana practice teach awareness. Consequently, whatever we do, we do well and the mind remains focused. If random thoughts distract the mind, refocus and reprioritize.

Q404

Does Asana practice have the same effect on the endorphins that aerobic exercises do?

A404

We do not have data on this yet. Beta-endorphin is a 31-amino-acid peptide and is primarily synthesized in the anterior pituitary gland and cleaved from pro-opiomelanocortin, a larger precursor molecule. It can be released into the circulation from the pituitary gland or can spread into areas of the brain through nerve fibres. Beta-endorphin remains stable with habitual exercise but varies with the kind of exercise. Alpha and Gamma endorphin can increase slightly.

With endurance exercise performed at a steady state, beta-endorphin levels in the blood do not increase until exercise duration exceeds approximately one hour, with the increase being exponential thereafter. In trained subjects, there can be a biphasic increase in beta-endorphin. There is also a diurnal variation in beta-endorphin levels pre and post exercise. Hence, it is beneficial to exercise in the morning. The ancient science of Yoga always stressed on Asanas being practiced in the early morning. Intuition?

Global mood significantly improves after conventional exercise. A study cited in Biological Psychology (June 1995) has shown that the rise in levels of a hormone which releases beta-endorphin is the same after meditation and

running! Different mechanisms may be involved in the regulation of beta-endorphin release during exercise.

Yoga is a different kind of exercise. The Yoga practitioner does not exhaust the mind. Aerobic exercises tend to exhaust the mind though we feel fresh soon after the routine is over. During Yoga practice, we keep the mind calm to ensure that the muscles, ligaments and organs are kept harmonious. This prevents fatigue and has a soothing effect on the body and mind. This quality of freshness is not available in other systems. This is another reason that we must ***not listen to music or read while exercising***. Ultimately the mind is the source of calmness; not exercise. Calmness will not result if we exercise with an agitated mind. ***The mind is the cause*** of endorphin release that creates peace and not vice versa.

Q405

When we are physically exhausted, will not the practice of Yoga tire me further?

A405

Recuperative Asanas like Dog pose with ropes, Uttanasana with the head rested, Setu Bandha Sarvangasana on the prop and Viparita Karani and half Halasana help recoup. However, if the exhaustion is beyond a level, only rest will help. Never be an extremist in Yoga. If you do not feel like practicing, do not force yourself. Yoga is not a rigid monotonous, routine.

Q406

Can Asanas protect the body from flare-ups of anger especially for those who are unable to make a change in their attitudes?

A406

Yoga psychology along with habitual practice provides the effect of a drug without side effects. Inversions pacify and “cool” the brain and mind. Seated forward bends have a similar effect. Back bends provide protection to the abdominal organs from hyper-acidity. Pranayama reduces temper

flare-ups and protects the nervous system from over usage. This kind of practice has to start from childhood though it is better late than never.

Q407

Is not Yoga supposed to be very useful for treating physiological Insomnia?

A407

Insomnia is primarily a function of the mind and attitudes. The mind is more powerful than any Asana or drug. Sound sleep is possible if we live each day as new and retire to sleep without any stress in our mind. In rural India, the farmers work all day, enjoy a meal with the biting hunger that has developed, sleep well and face the next day as it comes. Their worldly possessions are minimal; they have no idea of their future and sleep with great peace. Urbanites have all kinds of problems with sleep as we have spoilt our mind with uncontrolled desire. Bhagawan Sri Sathya Sai Baba says that desire is not to be condemned but bridled. He labels this as ceiling on desires.

For a person with “healthy” attitudes, any kind of exercise improves the quality of sleep. Yoga is superior as the neurological stimuli provided by Asanas and Pranayama produce tranquillity. Half Halasana, Viparita Karani, Setu Bandha Sarvangasana benefit the system. Ujjayi Pranayama with the bandage and prolonged exhalation can help produce tranquillity.

Q408

Can Pranayama benefit Insomnia due to menopausal changes, physical strain of a heavy workload and pathological conditions like Hyperthyroidism and Hypothyroidism?

A408

Pranayama will certainly benefit the menopausal woman. For insomnia due to overt physical strain, practicing Pranayama in the morning before the day begins will provide great relief. Pranayama will aid many causes of insomnia but benefit will be inadequate if *the root cause is*

not rectified. Hence, pathological conditions like thyroid disorders need appropriate medication.

Q409

In general, are Pranayama and Asana practices useful in treating psychological ailments?

A409

In my experience as a physician using Yoga as a tool of treatment (and trying to make patients take Yoga as a life style), the majority lapse. On recovery from an ailment, they give up Yoga practice. Hence, I would not treat such conditions with Yoga to begin with. Counselling is quick and efficient. Once they are mentally stronger, I would insist on Asana practice.

Q410

Comment on Yoga and depression please.

A410

Depression usually has a cause. Of course, there is an entity known as idiopathic depression but I do not subscribe to this viewpoint. If we identify the cause and treat it, Yoga will improve general health. Inversions, Viparita Dandasana on a rack, Setu Bandha Sarvangasana on a support and Viparita Karani are valuable. It is not easy to practice Asanas when the patient has lost motivation. At this point, *props are valuable to help the persons perform Asanas* to secure health benefits.

Again, as I have mentioned before, the mind is more powerful than an Asana and if we are miserable and dejected, it is difficult for Asanas to be of help. Try to develop a will power to resist situations or sail with them. The moment problems dissolve, the mind and body are free to recover and “move”. The bodily aches and pains of depression cease. Depressed patients need love and counselling.

Q411

Will Asana practice have an impact on altering the level of depression for maniac depressives on medication?

A411

Asanas enhance the mood levels with consistent practice. However, unless I am acquainted with the patient thoroughly, I would refrain from introducing Yoga practice.

Q412

Please highlight the role of forward bends in severe depression.

A412

A dynamic combination of Paschimottanasana and Halasana preceded by Uttanasana and Dog pose (also in a dynamic fashion) will help. Back bends are more beneficial with or without props. Avoid the normal manner of practicing all forward bends until depression resolves. Continue medication for some time. There are cases known where discontinuation of medication has caused patients to harm themselves.

Q413

Can Yoga help an adolescent suffering from panic attacks?

A413

Yogic principles and counselling are easier to follow initially though Asanas can benefit this condition. Asanas that provide psychological calm include Setu Bandha Sarvangasana on a prop, half Halasana, back bends on props, Viparita Karani and Asanas done with dynamic sequences. Panic attacks have a cause that needs to be determined. Ultimately, to guide the person to the yogic way of life is more important.

Q414

Can inversions prevent memory loss?

A414

There are two kinds of memory loss-a) psychological-due to high volume input (our mind is full of impressions) which is very common in today's "fast" world, b) physiological-due to organic aging of the brain.

The former does not need Headstand-only a proper organization of the mind. We should not be a scatterbrain! Asanas and Pranayama can help quite the mind but a change is necessary in the psyche.

Headstand can prevent organic aging as it provides a healthy exercise to the cerebral arteries. This coupled with a healthy diet can go a long way in protecting the physical organism. Those who continue to challenge the brain and mind in daily living are healthier. This proves what yogic philosophy has been saying for ages, namely, to use the whole organism or else it will undergo *disuse atrophy*.

Q415

Can Yoga help those who have lost their memory due to dementia?

A415

If the brain cells are already dead, it cannot help. The neuronal loss is considered irreversible, but I would keep an open mind on this. If the damage is in its infancy, all forward bends and subsequently inversions may be of great help to prevent progression. Trataka (a yogic eye exercise) is of value as the optical-neuro-cerebral circuits are stimulated. Prevention of such conditions is easier by Yoga with habitual practice of inversions.

Q416

Can Yoga prevent, cure, or manage Parkinson's disease?

A416

Parkinsonian rigidity of the muscles responds very well to habitual Yoga practice while tremors do not. Do remember that concomitant drug intake is necessary and Yoga cannot replace it or vice versa. A judicious combination is ideal. All Asanas are valuable. Counselling is necessary for the mind as Parkinsonian patients lose self-confidence. Yoga sadhana provides ideal guidelines.

Q417

Does Yoga benefit Trigeminal Neuralgia?

A417

Shoulderstand is invaluable along with half Halasana. Forward bending Asanas with support and a bandage on the face is soothing. Nadi Shodhana Pranayama is of great help. Yoga can abolish this disorder with habitual practice.

Q418

Does Yoga restore mobility to patients with Multiple Sclerosis who are confined to their wheelchair?

A418

Asanas can be practiced (whatever possible) with the aid of props for health maintenance, which is more important at this stage. Practice Pranayama without fail.

Q419

Can Yoga prevent or cure jet lag?

A419

Yoga provides enough nervous energy to face jet lag. Jet lag is an inevitable change though there are many who can manage with change of time zones without ill effects. Those who exercise regularly will have more reserves of energy to *cope with jet lag*. Inversions are invaluable for this along with all forward bends and half Halasana. Pranayama provides electrical energy especially if done a few hours before a trip.

Q420

Can Yoga treat giddiness and vertigo?

A420

The first step is to identify the cause, which could be in the ear, eye or brain. Fluctuations of blood sugar and blood pressure, Cervical Spondylitis, anxiety, rhythm disturbances of the heart, mitral valve prolapse are some of the other causes. Use Yoga with justification. For all the causes that I have listed, Yoga can be very beneficial.

Q421

Can Yoga treat Cerebral Palsy?

A421

Yoga will keep the patient very fit and this is important even though complete cure and normalcy may not be possible. The spasticity is not reversible but manageable. In fact, Yoga is the only system that can handle spasticity. Stretching is the special benefit offered by Yoga. Standing poses with props are very helpful along with Supta Padangusthasana. Inversions feed the brain with energy.

Q422

Can Yoga help children with mental retardation?

A422

Fitness is an important factor for all and any kind of fitness regimen is valuable for such patients. Asana practice requires constant monitoring as understanding may be limited. The parent has to help the child methodically. Yoga is an essential palliative. However, reversal of function of the damaged neuron is difficult.

Q423

Muscular dystrophies are very difficult to treat. How can Yoga help?

A423

Yoga provides a means to keep fit as far as possible. Start practice as soon as the diagnosis is made.

Q424

Can Yoga be useful for a spinal cord tumor or is surgery mandatory?

A424

After clinical examination and investigations if the tumor is suspected to be malignant, it has to be removed whenever possible. If benign, and there are no pressure effects, observation and follow-up is necessary though in some cases surgery may be indicated. Yoga has little role in treatment though its practice is not

contraindicated for benign growths. Standing poses are very beneficial. Avoid compression of the spinal nerves during practice. Medical monitoring is essential.

Issues on the Ophthalmology:

Q425

Can a blind person practice Yoga?

A425

The sense of touch and hearing is acute in such persons. We have to provide physical assistance and help them to experience the Asana. Time is necessary to accomplish this.

Q426

Can Yoga cure myopia and hypermetropia?

A426

If it were possible, I would have cured myself! This is a congenital problem in the curvature of the eyeball. However, it may be possible to retard the development of “progressive myopia”. Yoga can prevent lattice degeneration of the myopic eyeball if we practice inversions as soon as the condition is diagnosed.

Q427

Is it correct that consistent practice of Trataka (a yogic eye exercise of gazing at a fixed point) will rectify abnormal vision to normalcy?

A427

Medically this is not tenable. These are parrot like repetitions from books without validation. The reduction of refraction error if any could be transient.

Q428

Can we practice Trataka exercises with spectacles?

A428

The comfort of the technique is much better if done without spectacles.

Q429

Can myopic persons practice inversions?

A429

Certainly, provided the lattice degeneration if any, is stable. Pre-screening is essential. The eyeball should not feel heavy after inversions. To quote Sri BKS Iyengar, “When the pose is correct, there is lightness, a freedom. When it is heavy, it is wrong”.

Q430

Bodily secretions dry up as we age (especially in the eye and mouth area). How does one prevent or solve this problem?

A430

We have to treat this condition before the aging cells lose the ability to respond to stimuli. It is easier to practice Yoga and maintain the secretions at a healthy level. ***Inversions drain the tissue fluids in the body cavities and help replenishment.*** They are of prime value to the eyes. Artificial tears are of help to some extent but avoid them as much as possible. Twisting Asanas squeeze the tissues and maintain healthy osmotic capacity of the body tissues for a long time. These poses also enhance lymphatic flow and maintain micro nourishment. Healthy exchange of body fluids between cells is promoted. This could help increase immunity. Interestingly, studies have shown that endurance exercise increases salivary immunity⁹.

Sitali Pranayama maintains the healthy flow of digestive juices in the mouth. Other varieties of Pranayama maintain the cellular responses to nervous stimuli.

Q431

After surgery for Glaucoma, can we practice inversions?

A431

This is medically permissible. Nevertheless, the patient should not neglect medical follow up. This helps to ascertain that the pressure is under control and corrections in Yoga practice are possible. The use of the bandage is essential in inversions and seated forward bends. Half Halasana and all forward bends precede the introduction of inversions on the ropes.

Q432

Can inversions prevent or cure cataract formation?

A432

Cataract formation is multi-factorial. Genetics, atmospheric pollution, smoking, usage of fluorescent lights and lack of a proper diet are some of the causes. We cannot be dogmatic here. The eye will definitely *age healthily* with the help of inversions.

Q433

Is it possible to prevent a cataract maturing *after* it has started forming?

A433

A definitive answer eludes us. There is no contraindication to practicing all postures in this situation. *Inverted poses* are the sine qua non for this situation.

Q434

Is it advisable to practice Headstand after surgery for an intraocular lens implant? Is any other Asana a contraindication?

A434

This decision is individualized. Medical follow up is essential. The use of the bandage is essential in the initial stages. Dog pose, Uttanasana with head rested, cross-legged forward bends are beneficial initially. Later, practice all Asanas under medical supervision. Avoid jumping and dynamic sequences for the first three months after the implant.

Q435

After surgery for a detached retina, are inversions permissible?

A435

This depends on the age of the patient, the weight and height, the body habitus and the capacity to understand the subtle points in Headstand. Initially for a while, practice standing and seated

forward bends followed by half Halasana. Use the bandage cloth on the eyes for inversions subsequently. Commence Headstand on ropes as any fear complex is prevented.

Q436

Can Yoga help night blindness?

A436

Vitamin A deficiency needs correction. Yoga works with nature to provide cellular healing by irrigating the area with fresh blood to spread the medicine efficiently! The body has to work on its own for healing to occur. Yoga is an adjunct to help the vitamin work. This does not erode the value of Yoga, the correct approach is necessary.

Q437

Can Yoga prevent or benefit eyestrain induced by constant computer or television usage?

A437

Inversions and all forward bends with the bandage are of great value. The best solution is to restrict the work hours whenever possible. Habitual practice of Yoga prevents eyestrain rather than using Yoga as therapy. There is a limit for the human body and no amount of Yoga may help if we abuse the body.

Issues on ENT (ear, nose and throat):

Q438

Is it advisable to practice Yoga (especially inversions) for a patient with a hole in the ear and a suppurative (pus laden) ear discharge?

A438

There is no contraindication to practicing standing poses, twists and all forward bends. Back bends and inversions strain the ear if improperly done. Avoid these until the hole closes up either spontaneously or by medication or surgery. Shoulderstand and half Halasana done on a rolled mat help drying of secretions if the hole is small. However, I would advise the patient to practice

Yoga after the hole has sealed rather than monitoring mistakes in practice. The ear is a tricky area to work with Yoga when a hole exists.

Q439

Tinnitus (an uncomfortable, ringing or buzzing sensation in the ear) seems refractory to treatment by Western Medicine. Can Yoga help?

A439

Firstly, we have to ascertain the cause. If a tumor is detected, appropriate treatment is indicated. If we find no pathology, idiopathic tinnitus will respond very well to Yoga. However, this requires careful understanding of the mechanics and adjustments of the poses. Over a period, Yoga can **abolish idiopathic tinnitus**. Inversions along with back bends provide the cure. A slight mistake in the Asana can result in worsening of the condition. Medical care is essential in monitoring progress.

Q440

Can Yoga help abolish or prevent the common cold?

A440

Yoga can strengthen the defence mechanisms though we may still suffer a cold. The agents responsible for a viral cold **undergo mutation** and hence any kind of treatment on a one-time basis is not possible. Try to increase the immunity by a good diet and exercise. Inversions are ideal to provide fresh blood to the nasal area. It may be possible to reduce the frequency and intensity of common cold but not eliminate the occurrence. Half Halasana and Shoulderstand on the rolled mat are essential.

Vasomotor Rhinitis is often mistaken for a “cold”. Here, there is a tendency to persistent sneezing in the early mornings. Such patients find it difficult to sleep in a climate-controlled room, often sneezing periodically. Yoga can treat this without resorting to medication. Pre-sleep practice of Shoulderstand and half Halasana are necessary.

Q441

Can Yoga treat a deviated nasal septum without recourse to surgery?

A441

If the deviation is considerable and the nasal orifice is closed, surgery is invaluable. Practice Yoga subsequently. Yoga cannot reposition the septum though constant pressure of the fingers during Pranayama (over the years) can alter the anatomy to a certain extent. Each case must be examined to assess the severity of deviation and surgery or Yoga accordingly advised. In my experience, **Yoga can manage the condition in the majority**. Inversions especially half Halasana and Shoulderstand on a rolled mat are invaluable along with Nadi Shodhana Pranayama.

Q442

Can Yoga prevent sinus infections and allergic Sinusitis?

A442

An acute bacterial infection needs a course of antibiotics. We can control allergic Sinusitis provided we maintain consistent practice. If the amount of allergen is more than a certain limit, no treatment will help, be it medicine or Yoga. Nature will take time to eradicate the allergen from the body. Occasional pain in the sinus area during a “cold” can still occur. Standing poses, Shoulderstand on a rolled mat and half Halasana are invaluable. Practice Headstand only after the disorder is controlled.

Q443

Is Yoga useful **after endoscopic sinus drainage** for allergic or infective Sinusitis?

A443

Inversions are invaluable. Shoulderstand with a rolled mat and half Halasana are beneficial. These prevent recurrence and are a natural “puncture” for the sinuses. The blood circulates with a tremendous force into the stagnated areas flushing out the secretions.

Q444

Children often suffer recurrent pharyngitis. Prolonged use of antibiotics is not advisable. Can Yoga offer a solution?

A444

Provided no specific cause exists, habitual practice of Shoulderstand and half Halasana abolishes the frequency of pharyngitis. This is also applicable to adults. Asanas help in improving the circulation of immune cells in the throat improving local immunity. Proper timing in the poses is necessary.

Issues on General Surgery:

The hospital is for those who have faith in drugs and doctors. However, what can drugs and doctors do without the Grace of God?

Bhagawan Sri Sathya Sai Baba

Q445

As a person who advocates Yoga for health, would you say surgery is necessary at all?

A445

Surgery is definitely unavoidable in certain situations. We cannot be fanatical and as mentioned earlier, we must balance all options. If a situation has an alternative, try it but be monitored by your physician.

Q446

What kind of Yoga postures can we practice to overcome the negating aspects of surgery?

A446

Sometimes the negating effects may take time to be neutralized. For example, a scar tissue is inevitable after any surgery, but in the spinal area, it can lead to specific problems. Adhesions that form after certain abdominal surgeries can cause pain, and Yoga can be of great help. The beneficial postures depend on the type of surgery done, the age of the patient and the area of the

body afflicted. More important is the skilful use of Asana techniques to remove pain.

Q447

Can Yoga fill any lacuna in immediate post-surgical care?

A447

Conventional postoperative care is essential. Commitment to the patient and loving care are mandatory. Supine pranayama can be practiced depending on the ailment. Introduce vigorous Yoga practice after discharge from the hospital and assessment of the condition at that time.

Q448

Post operatively, is it safe to practice Yoga? Can we practice all Asanas?

A448

The golden rule concerning scar formation and exercise has been repeatedly highlighted. Avoid any exercise until then. Introduce Yoga later, depending on the clinical disorder. The affected area demands the greatest attention in practice. For instance, a patient who has had surgery for a prolapsed disc should be careful when attempting to move the spine in Asanas. Those who have had knee surgery should be careful when they practice Virasana, Padmasana and standing poses.

Q449

Does scar tissue inhibit flexibility? Will it be difficult for someone who has had a by-pass surgery to elasticize the intercostal muscles because of the scar tissue and trauma from such a surgery?

A449

The difficulty is in the initial stages. Nevertheless, there is no limitation. All Asanas can be done with medical guidance and monitoring the progress with investigations. The props help one to practice the poses easily. ***Asanas can make the scar tissue stretchable.***

Q450

Can Yoga help in prolapse of the bladder (cystocele) and rectum (rectocele)?

A450

Yoga can treat a second-degree prolapse of these organs without surgery. All standing poses are very useful along with Supta Baddha Konasana. Inversions provide a cure especially Baddha Konasana in Headstand and Urdhva Padmasana in Shoulderstand. With total prolapse of the rectum, (procidentia), surgery is necessary. Yoga practitioners are *not prone to prolapse of any organ* (provided there are no congenital defects). The geriatric can benefit from these Asanas and we can avoid surgery in certain cases.

Q451

Does a Haemangioma (a tumor comprised of blood vessels) present any problem in Asana practice?

A451

Medical guidance is essential. We ascertain the bodily habitus of the practitioner. Avoid over stretching or over contracting as the lesion can bleed. Keep in mind the extent of Hemangioma and the area of occurrence before starting Yoga.

Issues on Immunology:

Q452

Does Yoga play a role in infective conditions as a primary tool or an adjunct?

A452

Obviously, the patient with pneumonia needs antibiotics or else we could lose the case! However, Yoga can provide cellular energy to combat the condition. After recovery, Yoga can help restore health faster. There are some situations wherein one recovers from an infection without an antibiotic. This means that the inner system is strong. The cellular quietness provided by Yoga practice brings a lot of energy to help healing in such cases. We need to individualize every case.

Q453

Why do some people heal rapidly while other with the same illness and basic profile heal more slowly or not at all?

A453

This is difficult to explain. It is the working of the life force inside and to an extent, our attitudes matter. The energy that animates all beings is responsible for this. Remember that falling ill and recovering at different times is also part of karma to be undergone.

Q454

Every cell in the human body is said to have its own memory. Does this mean that the physical body has a consciousness of its own? Is there any scientific evidence to substantiate such claims or is this a purely metaphysical point of view?

A454

There is enough evidence. We have what we term as memory cells in our body that responds to infections. They are in turn, activated by another set of cells and these in turn by another, and so on. Hence, each cell has its own intelligence and independence. A life force animates everything. The understanding of this eludes us.

Issues on Oncology:

Q455

Can Yoga help manage the effects of radiation?

A455

The effects of radiation are microcellular and quick. Yoga advises passive seated forward bends to remove the effects of nausea. Later, inversions, half Halasana and back bends are valuable. Half Halasana is invaluable for body fatigue. If the person has been a yogic practitioner (and has undergone radiation for any reason), Yoga can manage the condition quickly as the Asanas can be done easily.

Q456

Can Yoga counteract the side effects of chemotherapy?

A456

Seated forward bends along with Viparita Karani and half Halasana are the most beneficial. Individualize the guidelines for Asana practice, as the responses could be varied. Medical monitoring is essential.

Q457

Should Yoga practice start only after chemotherapy treatment is completed?

A457

The sequence of Asanas must benefit the patient. Passive poses are important initially. When the patient is healthier, active practice is beneficial.

Miscellaneous Issues:

Q458

Why do we teach Yoga?

A458

We should spread this glorious science! Each teacher must do a soul search to determine the inner reasons. Unfortunately, it has become a commercialized proposition.

Q459

What does it really mean to “accept” a teacher? What should we look for in a teacher, and what are the responsibilities of a student to the teacher? Does the student accept the teacher or vice versa?

A459

Accepting a teacher means total surrender of the self. This does not mean that the student is not open to any mistakes the teacher may commit. Constantly remember the teacher in the heart and work hard. The teacher accepts the student. Recall the saying, “When the student is ready, the guru (teacher) appears”.

Q460

Yoga is a live teaching with direct contact between

teacher and student. In order to maintain a particular lineage and tradition, teaching Yoga as faithfully as has been received is essential. Is it ethical then to explore other venues individually and to change or modify individual practice?

A460

The teacher must be understanding, kind and ready to accept deficiencies in teaching at any point. It is correct to learn the best of every method but *the physiology of the Asana must not change*. The posture must not be harmful to the inner organs. Hence, we must be able to discern if a change in teaching or method is detrimental to the body.

We can experiment on ourselves in any manner to help others better. Follow a single method of Asana teaching and do not mix systems as this can cause problems to the body in the long term. Knowledge of clinical medicine is essential to treat a medical disorder with Yoga. The teacher must never be rough with the student to the extent that the student is emotionally hurt. Newer methods should stand the test of investigative analysis.

Q461

When the body benefits from the teaching while the mind does not, should we continue with the teacher or the method?

A461

Psychological evolution is the aim of life. Even if the life span is short, it must be with values. Hence, as soon as the body has benefited, the student should seek a different person to further the education. In the olden days, sincere students sought out teachers who happened to be available at the right time. Bhagawan Sri Sathya Sai Baba says that in the Kali Yuga, the gurus hanker after the students! What a sad change!

Q462

At present, apparently every good teacher wants to leave an imprint in the Yoga world. Do you think this is ego driven? Alternatively, would you ascribe it to the concept of “honouring the source, honouring the teacher”?

A462

It could be a bit of both. However, we must realize our limitations though and not make ourselves self-proclaimed messiahs.

Q463

With so many publications, books and improvement in personal and mass media technology, is it necessary to have a teacher to learn Yoga?

A463

Yoga is a *practical subject* and we need to be sure that the practitioner is accurate with the postures. A teacher is essential. Yoga is a highly individualized subject that considers the physical, physiological, emotional and spiritual aspects of the person.

Q464

What is the single most important factor in successfully using Yoga as a therapy? Is it technique, alignment in the postures or consistency in practice? Alternatively, is it using and controlling the breath in Yoga practice, the patient's age or the ailment?

A464

The foremost factor is medical knowledge. Blind usage of Yoga therapy can be detrimental to the patient. The second is a mind that understands the technique of the Asana applicable to the other person, not to oneself! Right alignment is a correct technique. This includes understanding of body alignment in pathological conditions, which could be difficult. Many teachers do not discern this. Consistency in practice is essential too. Yoga must be more patient-friendly to ensure good compliance.

In workshops that I conduct, many practitioners have continuing health problems. Their teachers (senior Yoga teachers) refrain from discussing medical disorders. They are unable to offer solutions, as they are not trained in Medicine nor are they able to correct the poses.

For Yoga therapy to provide relief, proper use of the breath in Asanas is mandatory. We must not forget the muscular movements of the postures and practice breathing (while in an Asana) as is done in many schools of Yoga.

The age of the patient is a definitive factor in recovery. Generally, the older the patient, the slower the recovery, (but this is not a rule). If the patient is well motivated, recovery can be quick but if the body is decrepit, will power alone cannot help.

For healthy recovery from disease, both body and mind have to be well preserved. The cause of the ailment is obviously a key factor in recovery. A patient with a back pain due to a muscular etiology will recover faster than one with a prolapsed disc. *Ultimately, recovery is in the hands of the Divine.* This has to be experienced.

Q465

Is it necessary that we should abolish pain before commencing Yoga therapy for a particular problem?

A465

We can begin therapy with a certain quantum of pain but this is highly individualized. The method of Asana practice varies with the medical condition and the age of the patient. For those with a low pain threshold, I would reduce pain with medication before commencing Yoga.

Q466

I have read (in a popular publication on Yoga and back related disorders) that twisting poses and all forward bends should be avoided for patients with chronic back pain. Yet in *A Matter of Health*, you recommend these poses for very serious chronic back conditions. Could you clarify?

A466

What you have read in the "popular publication" is incorrect. *Twisting postures are the backbone of relief for chronic low back pain.* Clinically, twisting postures and all forward bends (the latter not initially) help the majority of cases. Of this, there need be no doubt.

Medically, when in acute pain, avoid these postures and resort to analgesics. I have seen many patients, treated by the archetypal postures of different schools of Yoga (I was a classic example) and have never improved clinically. The condition often relapses. More over, specific clinical parameters that define low back fitness are hardly satisfactory. To highlight, hamstring stretches and twisting postures are peculiar to the BKS Iyengar school of Yoga. These poses provide great relief.

For a patient with a low back disorder, unless the hamstring and the rotators of the spine are flexible pain will not abate. I have explained this in detail in *A Matter of Health*. Forward bends are the only group of Asanas that stretch the spine to its entirety, *acting as traction*. However, they are taught only after sufficient elasticity has been achieved in poses that involve lateral flexion and rotation (for e.g. Utthita and Parivrtta Trikonasana). Dog pose has to be reasonably comfortable before Prasarita Padottanasana is introduced. Next, we have to master Maha Mudra and Janu Sirsasana. Then, the patient will be free of pain.

Master standing forward bends before attempting seated forward bends. A proportion of patients benefit from back bends too. Salabhasana and Apanasana with single leg flexion help a minority. Ultimately, for complete back fitness, we need to be proficient in both forward and back bends.

Q467

Can Yoga produce a quality athlete?

A467

Many athletes practice stretches as the value has been ascertained but few practice Yoga in depth. The awareness is improving and first-hand experiences of Yoga practice will help enhance the use of Yoga in athletics.

Q468

How do we introduce Yoga to people confined in bed for long periods? For example in cases of Hepatitis, recent open-heart surgery, cervical os

incompetence (during pregnancy) and advanced Emphysema (where the patient cannot take a few steps without feeling suffocated and needs twenty-four hour O₂ intake)?

A468

Medical monitoring is essential. Yoga could provide relief but the stage of disease progression (or remission) has to be assessed before prognostication. The emphysematous patient mentioned seems to be an “end-stage” case. It is easier to improve patients with COPD early in its onset rather than at such a late stage.

Recuperative poses are important and every case carefully monitored. I have seen Sri BKS Iyengar work on advanced cases of pulmonary diseases and his understanding of the mechanisms of Asanas and the modifications for each patient is particularly amazing.

Q469

Can Yoga help recurrent calf muscle pain that is erratic in occurrence? Sometimes Yoga does not provide relief. Is this condition hereditary?

A469

Yoga can cure muscle cramps easily. It is clear that the Yoga practice is not effective. Standing poses effectively abolish this literally from “day one”. This is not a hereditary disorder. The calf muscles are inflexible. Tadasana on the footrest relieves the condition exceedingly well. Other possible co-existing medical disorders have to be ruled out.

Q470

Can Yoga help treat Chronic Fatigue Syndrome (CFS)?

A470

Medically, we still do not know the workings of CFS. However, *Yoga is of prime value*. Recuperative Asanas are beneficial. The teacher must be alert to the patient’s subtler levels of body-mind functions. Without the mind being dynamic, fatigue never ceases.

Practice passive poses initially. Viparita Karani is invaluable. As the condition improves, practicing *active poses prevents sapping of energy* through the day. Inversions on the ropes and half Halasana are beneficial. Setu Bandha Sarvangasana is very helpful to enhance energy in the cardiovascular system.

You should know how to relax in action.

BKS Iyengar

Q471

Does diet play a part in every illness?

A471

Dietary regulations are very important for both prevention as well as recovery from illness. A few examples that I can give here are Typhoid, Malaria, Acid peptic disease and Diabetes Mellitus. Improper diet during a bout of Typhoid can aggravate the ailment and cause intestinal perforation. The need for diet control for Diabetes is well known. A bland diet helps recovery from acute Acid Peptic Disease.

We are what we eat. If we smoke, we become smoke literally; the body cells are coated with carbon residue! If we consume excess fat, our body is literally filled with fat cells. Study this wonderful quote from the *Yoga Vasistha* that says, “Whatever the mind is full of, along with that and under the influence of that, the body attains to that nature as air within a fragrant substance attains to fragrance” (Samvid, op.cit., page 212, verse 724).

Illnesses are caused not much by the food people eat or the conditions, in which they live, but the mental weakness and mental attitudes, prejudices and predilections. Desires, disappointments, and despair-these also cause diseases.

Bhagawan Sri Sathya Sai Baba

Q472

How can we differentiate between healthy and unhealthy stress?

A472

Stress is a challenge to both body and mind. Sitting, walking, eating, etc. are various kinds of normal “stresses”. Any stimulus that elicits a response from us is a kind of stress. What is stress to one, is not so to another person (for both body and mind). Laughter is a healthy stress. Jogging is a physical stress on the body. A mental worry is another type of stress.

Anything that makes us *invigorated, fresh, alive, light in both body and mind is healthy stress*. Those that weaken, create doubts consistently, tire persistently, and cause lack of sleep are unhealthy stresses. We can easily distinguish them by listening to the conscience. This is not a moral precept. We know this truth but choose to ignore it.

To quote Bhagawan Sri Sathya Sai Baba, “Whatever happened, happened well. What is happening is happening well. Whatever is to happen, will happen well. Why are you crying for what you have lost and claimed to be yours? When you came into the world, you did not bring anything to lose. What you have created for yourself is to be destroyed. What you have taken, was taken from Here. What you have given, was also given from Here. What is yours today belongs to someone else tomorrow. It will belong to another person on another day. This is the law of the created world”.

If we understand this deeply, stress does not affect the body and mind.

Q473

Some Yoga teachers opine that cancer patients should not practice Yoga. However, there are advertisements on how Yoga can treat cancer. Please clarify.

A473

Let me give you an analogy. While examining a patient with breast cancer there is a medical dictum that we must be very careful not to press the swelling for that can disseminate the tumor cells into the blood stream. We label this as micro-metastasis.

If a simple physical examination can cause this, imagine how Yoga can spread the cells into other areas! There is an inherent hazard of the malignant cells spreading as Asanas can enhance the spread cellular material. Practice passive poses without forcing the body. There is no research yet to confirm that Yoga can help in a definitive manner. Health maintenance is possible to an extent.

Q474

Can diabetics receive greater benefit from the practice of Yoga than any other form of alternative treatment like Homeopathy or simple dietary changes with aerobic exercise?

A474

Firstly, the type of Diabetes has to be ascertained. If pancreatic cell reserve is low, alternative approaches may not help. Medication is essential. The role of exercise for type I and type II Diabetes is not to be underestimated. To increase insulin sensitivity, any kind of exercise is beneficial. We have to individualize this approach for the patient.

Yoga is static, not calorie burning as we would like it to be, and hence its role in Diabetes is different. The pancreas lies deep in the abdomen and close to the spine and it is not easy to stimulate the gland. Yoga provides a soothing system of exercise even in the face of **end-organ and micro-cellular damage** in which situation other exercises may be contraindicated. Drugs cannot protect or reverse end-organ damage. I would suggest that the patients secure the best of different systems (both Western and Alternative) to suit the situation.

Q475

Are there any specific signs that indicate we are practicing Yoga wrongly?

A475

This depends on the Asana. There are several signs. A simple guide is a feeling of discomfort in the affected part, which does not disappear

with regular Yoga practice. This can intensify or remain the same for years. Other signs include **increasing** discomfort, pain and stiffness, and depending on the affected area, major symptoms can occur in the long term.

If we attempt Sarvangasana on the floor without the shoulders being elevated (as is done in most schools of Yoga), Cervical Spondylosis is a definite change in such practitioners in the long term. In addition, the heart and lungs will be compressed, as the chest will tend to collapse. This leads to poor effort tolerance and low energy levels. Palpitations result and breathlessness follows. The list is endless.

Another example is that of backache. Incorrect practice creates such a situation that the practitioner feels better not attempting Yoga! This is a deplorable situation and needs rectification quickly. A cardiac patient with angina who compresses the heart in inversions can aggravate the condition. Improperly performed back bends by the same patient can again worsen angina (whereas back bends provide relief). Inversions, done improperly, can aggravate insomnia for patients who suffer this ailment.

Q476

What can happen if we practice poses at an inappropriate time?

A476

A host of reactions can occur! This depends on the nature of mistake and the pose and the age of the person concerned. I can provide a few examples: if a forward bend succeeds a back bend in an evening session, this may not cause so much of a problem as in the mornings (as the body may be stiffer after sleep). However, if a patient with low back pain commits this mistake, the problem can intensify. The older the patient, the longer the time needed to recover from incorrect practice.

An asthmatic who strains during Pranayama in the morning can make the condition worse as the lungs may be unresponsive. A cardiac patient with

angina will find it easier to practice back bends in the evenings. Inversions, done improperly by insomniacs can aggravate their condition when done late in the day. As a corollary, in a healthy person, inversions done incorrectly can provoke insomnia. The list is endless but this does not mean that Yoga is a difficult situation to master. Any task done improperly will have a negative reaction be it walking, cooking, Swimming or Yoga.

Q477

Do simple poses held for long periods prove more beneficial than complicated poses held for only a short time?

A477

Intense poses, by nature of their intensity can provide **physiological benefits in a shorter period**. An analogy is the athlete's heart where the pulse rate is very slow, yet the heart contracts more efficiently making up for the slow rate. Twenty milligrams of a drug may equivalent three hundred milligrams of another (in a common group) due to a modification of the molecular structure.

Similarly, due to change in the geometry of the pose, the effects vary. If we try to increase the duration in all postures, the benefits accrue. Take care not to overdo the poses. The intense poses teach many subtler body mechanics that simple poses cannot. Intense poses train the mind of the practitioner to become sharp and penetrative.

We should also realize that simple poses held for very long periods might not provide any extra benefit **beyond a limit**. The body is saturated with the effects and demands more. Necessary benefits can be gained from the intense poses though over practice may tire the body. A balance is important in practice.

Merely holding a pose for "12 or 24 breaths" will not benefit health or provide relief for any medical problem. Perfect alignment of the pose with the relevant muscles active, irrelevant muscles passive and other body mechanics provide an optimum, precise effect on the organ. Ultrasound scans confirm this.

Q478

Does diet influence flexibility?

A478

In general, those with a predominant meat based diet have inflexible and harder muscles. A vegetarian diet is conducive to flexibility but there are plenty of exceptions. However, once the muscles become flexible, they remain softer than those on a meat-based diet do. Medically, the consistency of muscles on a plant-based diet is generally, softer to palpation.

Added to the above, Asanas and Pranayama make the body soft owing to the nature of stretching done. The more important factor is the quality of the mind during Asana practice that influences the consistency of the muscles.

Q479

Do Asanas heal the body analogous to "pranic healing"?

A479

Asanas have a very different mechanism of healing which can be **clinically verified** in most situations. **Asanas can benefit very serious clinical conditions that pranic healing cannot.** Procuring relief from pain may be possible by any method. However, symptomatic relief is not the only aim of treatment. The root cause has to be rectified.

To provide an example, in a case of a prolapsed disc (a mechanical problem), **pranic healing cannot push the disc back. The relevant muscles should be contracted or stretched for the disc to get back in place!** Yoga is the instrument, and our intelligence is the blessing given.

Though we can heal ourselves with the Grace of God, to heal another is a different matter. **Not all are born as healers; nor can become healers by attending classes on healing.** If this were so, there is no value to Yoga sadhana and people like Sri Shankaracharya, Sri Aurobindo, Sri Ramana Maharishi, need not have done so much sadhana. The potential to heal another is present in all but to manifest this aspect is another issue. God is

the only healer but He does not practice *mass healing*. If everyone were cured, *karma ceases to be of relevance*.

Q480

Noise levels in pubs and restaurants are very high. How do we rectify this situation both from the point of the person in a pub and the situation of increasing noise levels?

A480

Pleasurable relaxation is often mistaken for the “true” type of relaxation. When we are calm, even soothing music is noise. Those who have practiced Yoga can appreciate total silence. Nature lovers are more sensitive to silence and we have to develop this quality from childhood. Those who exercise habitually will not seek relaxation in noise.

After what they consider as a day of hard work, people go to clubs where they become slaves of drink and ultimately ruin themselves, because first, man drinks the wine, second, the wine drinks the wine and thirdly, the wine drinks the man.

Bhagawan Sri Sathya Sai Baba

Q481

After approximately fifteen minutes of meditation, I begin to feel extreme heaviness in my chest and feel like I cannot breathe well producing a sense of lack of oxygen in my entire body, even though my breathing continues normally. Once this starts, it is hard to ignore it and my mind and senses jump into action ending my meditation. What causes this and how can I progress and continue my meditation?

A481

This may be on account of restraining the breath while meditating. After a period of what we medically term as apnoea (cessation of breathing), the body cannot continue without a break and there is a sudden adjustment by the lungs and we “come back to normal”. Proper practice of Asana and Pranayama *preceding* meditation is helpful.

Q482

During meditation, the breathing relaxes and becomes abdominal. Is this a correct state?

A482

If the spine is erect, thoracic breathing predominates initially. Breathing becomes imperceptible when the practitioner is reposed. However, the thoracic and abdominal muscles continue to work albeit very softly.

Q483

Sometimes we feel sluggish in the early morning. Is it correct to practice Headstand for five to ten minutes before meditation and chanting (twenty-five minutes) then Pranayama (twenty to twenty-five minutes)? Is there a particular Pranayama that we should not practice after Headstand?

A483

The Asana sequence is incorrect. Firstly, we should not just practice Headstand and stop without any Asana following this. The nostrils are not sharp after Headstand unless we practice variations. Hence, Shoulderstand is important. Practice Pranayama after Shoulderstand.

It is better to practice meditation and chanting before Asanas. If we feel dull on waking, jumping sequences of poses will invigorate the system. An easier solution would be to retire early the previous night so that we do not feel dull in the morning. The body is never the same each day; hence, we need to act according to the situation. Mechanical practice of Headstand in the manner mentioned will not be of benefit. Uttanasana done with the head lifted up and the spine intensely stretched will awaken the sleepy person.

Q484

We rarely hear the word compassion mentioned in Yoga, yet it seems to be an important element of most other spiritual practices such as Buddhism and Christianity. In a parallel situation, it is quite a common complaint of patients that there is a lack of compassion on the part of Western medical doctors. Is compassion

not an important part of both yogic and medical disciplines?

A484

Compassion is the discipline that a person must have early on the yogic or any path for that matter. Does not Patanjali mention about ahimsa? It is not the fault of Yoga but that of the teachers who propagate the science. I always give priority to guidelines on mental evolution along with Asana teaching in my workshops as a person can achieve the most complicated Asana but if the *substrate* of the person has not changed Yoga is of no value.

Apart from this, we must pray to the Almighty to grant us fortitude. Bhagawan Sri Sathya Sai Baba says “Bear all and be nothing”. This is a message to remind us of the need to remain calm and develop forbearance. Where there is love there is patience. Doctors are human beings and not someone “superior”. The same element that operates in others works in them too. Should I be compassionate just because I am a physician? Rather, I must be so, even if I am not. However, operating in field of suffering, one would naturally expect us to be more compassionate than others.

If a person is innately compassionate, it will operate, else it could be stimulated by circumstances. Sometimes, it never happens, as the seed of compassion is absent excepting with the person’s kith and kin. All have the seed, but *improper growth conditions stunt its development*.

Q485

When I teach (or attend) Yoga classes at the end of a working day, I usually end up with a headache behind my eyes and spreading towards the temples at the end of class (even with restorative poses). I have the same problem when I meditate at the end of the day. Is there any explanation for this?

A485

It depends on the kind of poses that you demonstrate or practice. You are probably

constricting some part of the head and neck area. At the end of a day, you might be tired and hence passive Asanas may be indicated. Commanding the different muscles may be difficult in the evening owing to fatigue in which case you might need to practice in the mornings. At the end of the day, the diaphragm tires easier, and this should be countered by healthy coordination of the breath in the Asanas while performing them. Such headaches will not occur then.

Q486

Is there any medical basis for the sequencing of postures in Asana practice, or can they be done as in other exercises-warm-ups, leg stretches and then the harder postures?

A486

There is a medical logic (musculo-skeletally, physiologically and psychologically), a sound basis for correct practice and sequencing. To elaborate, if any forward bend is attempted after intense back bend practice, spinal muscle pain results in the long term. In addition, if the transition is abrupt, the nervous system gets strained. Hence, neutral poses are necessary.

Psychologically, if we start from simpler to the harder poses, the practice is easier. Even if the mind is tough, the body needs to be prepared if we desire to start Yoga with intense Asana sequences. What is simple to one may be difficult to the other person. So every sequence is individualized. Nevertheless, sequences may be generalized to an extent.

Usually, standing poses are easy to perform and they warm the body for the inverted or seated poses (be it seated forward bends or seated twisting poses). If standing poses are difficult then hamstring stretches will help. To prepare for back bends, standing concave poses like Utthita Trikonasana and Virabhadrasana I will help. A well-executed Dog pose is helpful as a preparation for all poses. Depending on the aim of the practice (start and finish included), we should structure the sequence.

Q487

Can Yoga be a panacea for health? This seems to be a prevalent view.

A487

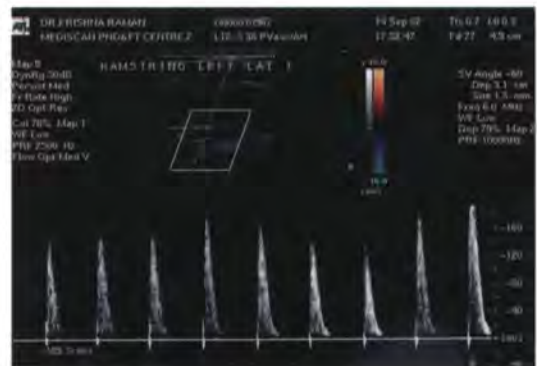
No science is a panacea. There are benefits and limitations. If such an incorrect notion has spread, we have failed to use our common sense. We must learn to integrate and derive the best solution. Nature is a great balancer and has provided us much. Yoga is part of this and is probably one of the greatest sciences ever, but subject to the inscrutable laws of the universe. **Finally, surrender everything to God.**

Most illness can be cured by simple living, simple exercises and by intelligent control of the tongue.

Bhagawan Sri Sathya Sai Baba

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Ultrasound studies in Yoga reveal a new world of physiological phenomena. Yoga is not what we think it is, neither is it what we think is not. Yoga is Yoga, period. What the eye cannot see, ultrasound reveals. Doing the Asana is not important, what happens inside the body while in the pose is of greater significance. Medically, it can be shown that the BKS Iyengar school is the most optimum in its effects on the body. The body is seen to behave as precisely as a machine if used properly.

Ultrasound studies on Yoga

Q1

With several technical points to be followed for correct practice of Yoga how do I know that I may not be committing a mistake? What happens inside the body with correct (or incorrect) Yoga practice?

A1

This is indeed an important question. Every Asana done properly has a specific effect on the inner organs. For example, the blood flow velocity in the legs increases if the standing poses are done precisely. Similarly, back bends or forward bends properly practiced have their own benefits. Most schools of Yoga believe in certain physiological changes in Yoga poses. For e.g. many feel that standing poses enhance the blood flow in the legs. However, facts are different. Not all of them do so and a few poses effect no change in flow patterns. Certain schools of Yoga teach standing poses with the legs bent and this is pitiable as the benefits of flow enhancement are lost!

Before we proceed, we must understand a little about exercise and its effects on the body. Dynamic exercises (running, Swimming etc.) and static exercises (for e.g. isometrics) have different effects. To summarize:

Parameter	Static exercise	Dynamic exercise
Heart rate	No increase	Increases
Stroke volume	No increase	Increases
Cardiac output	Mild increase	Three to four fold increase
Peripheral resistance	Increases	Reduces
Systolic pressure	Increases	Increases
Diastolic pressure	Increases	Reduces
Mean Arterial pressure	Increases	Reduces
Left ventricle	Pressure load	Volume load

The above table shows salient differences between two different types of exercises. Yoga exercises though static in appearance are **unlike conventional exercises**. There is no rise in arterial pressure or any pressure load on the ventricle as above. Both systolic and diastolic pressures reduce (or remain stable) during or after Yoga practice as the mind and body are relaxed. In some postures, the systolic pressure may increase though not as much as conventional exercises.

Endurance exercises cause redistribution of fluids from the vascular to the tissue spaces to some extent. There is vasodilatation in the blood vessels in the respective muscles and the resistance decreases. Certain areas of the body undergo vasoconstriction to promote blood flow to areas actively exercised. During Yoga practice, the systemic pressure is maintained, yet fluid redistribution and better tissue perfusion are achieved. Local changes of blood flow, mechanical muscles tension, and possible oxygen saturation occur according to the geometry of the posture and yet does not cause a change in other body parameters.

With endurance exercises, the capacity of the body to extract oxygen improves. With Yoga practice, the massaging action on the tissues maintains its resiliency so that all parameters will function to an optimum level. There is no volume load (up to a point) on the heart unlike dynamic exercises nor is there a pressure load in the conventional sense. The “load” effected on the cardiac muscle is unique in Yoga. **It is without strain** and there is a freedom of spatial nature given to the heart in different poses.

This property of providing elasticity to the muscles of the heart is not available in other systems.

Endurance exercise is known to remodel arterial structure in the lower limbs of healthy men¹. Such changes do not happen with Yoga practice as the nature of stimulus is different. Remodeling is not the effect of Yoga. **Maintaining a healthy anatomical structure** is the main benefit. Doppler studies have shown no permanent structural alteration in habitual Yoga practitioners in the long term.

Exercising muscles undergo vasodilatation and there are several reasons for this². The occurrence of hemodynamic events in Yoga is different as the demand during exercise is of a different nature. The blood vessels in yogic postures though made taut are unlike other systems. This produces a different response to blood flow patterns producing unique effects on the body.

Aging alters effective redistribution of blood flow during aerobic exercise³. However, Yoga practice can be maintained at the same intensity as, the nature of exercise is without strain and hence the hemodynamic patterns remain the same even in habitual practitioners. The hemodynamic patterns in the author have been the same over 15 years.

Standing poses have a different effect on the legs unlike conventional endurance or aerobic exercise. The muscles are contracted in geometric shapes and the contracted muscle is stretched. The muscles that are stretched are used in such a manner as to draw the flesh closer to the bone.

Let us review a few Doppler studies done perhaps for the first time in the history of Medicine & Yoga **while in the Asana** by an experienced Yoga practitioner (the results have been found to be similar in other habitual Yoga practitioners).

The following notation is applicable to all scans below:

- 1) "1" on the scan image (or along with the name of the Asana) denotes the incorrect pose
- 2) "2" on the scan image (or along with the name of the Asana) denotes the right pose

An "incorrect" pose in this series of analysis is defined as poses done with the legs and spine slack and with incorrect alignment.

Figures 1 and 2 show the flow pattern in the popliteal artery of a healthy leg (this artery supplies blood to the lower part of the leg below the knee) in Tadasana. This pattern is described as "triphasic" and is due to high peripheral vascular resistance in the healthy leg in the resting posture. A similar pattern is seen in healthy subjects in the supine posture.

(This graphic analysis may not be understood by the layperson perusing the book but please observe carefully the change in the graphic pattern in all the following scans).

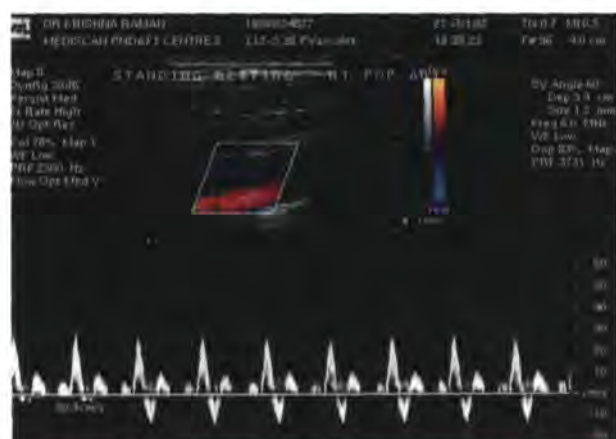


Fig 1 popliteal artery flow in right leg (standing)

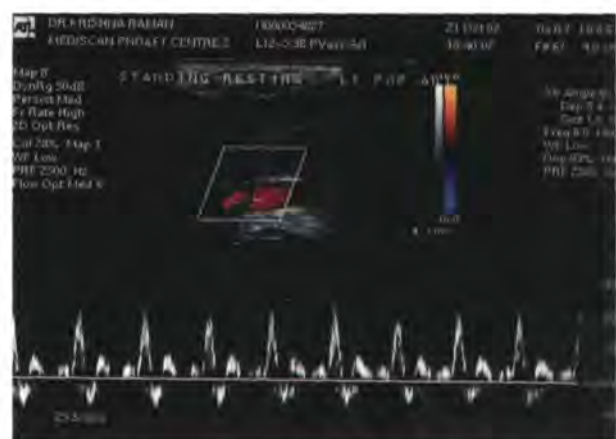


Fig 2 popliteal artery flow in left leg (standing)

To begin with, let us look at the differences in organ shapes in Asanas done both right and wrong.

It has been postulated that exercise training may be beneficial for Gall Bladder (GB) kinetics. Stagnation of bile can predispose to stones in the GB (though that is not the only cause). Exercise can improve the contraction of the GB though the improvement is apparently not significant⁴. However, exercise can maintain the effectiveness of contractions, which is necessary for health. Yoga is different from any exercise in that the organ is directly massaged and squeezed. At the time of writing, it is clear that Asanas have a bearing on the GB. However, the exact significance is to be worked out.

Below we study the GB in Utthita Trikonasana.



Utthita Trikonasana



Fig 3 GB in Utthita Trikonasana 1 left side

Comments:

The organ has been aligned horizontally when the Asana is done correctly. This is due to rotation of the liver in this pose.

The correct image (fig 4) indicates the need for "Tadasana alignment" in executing all poses. The paraspinal muscles on both sides should run parallel to each other. Unless the dorsal spine is well lifted in twisting poses, the correct angle of massage will not be obtained. This method is not followed by many Yoga schools nor is the importance of such precision understood. Patients with scoliosis need to be more aware of body alignment. It is not the external alignment alone that is important, the practitioner should become "internally" aware of the spatial changes while practicing Yoga. This sensitivity is highly variable. Exercise training from childhood helps enhance body awareness. Faulty alignment while practicing Yoga could impair GB contractility.



Fig 4 GB in Utthita Trikonasana 2 left side

We study the effect of Parivrtta Janu Sirsasana (PJS) on the Gall Bladder. Incorrect spinal alignment can cause a change in the massaging effects of the pose.



Parivrtta Janu Sirsasana



GB in a supine state



Fig 5 GB in PJS 1 left leg extended



Fig 6 GB in PJS 2 left leg extended

Comments:

The Gall Bladder shape is slightly altered from a supine state when compared to fig5 and 6. In addition, there is no difference between figures 5 and 6 in the Asana with the left leg extended.

We next study the shape of the Gall Bladder in Parivrtta Janu Sirsasana done on the right side.

Correct spinal alignment is important. Note the well stretched spine in the figure below right (P2).



P1 - Incorrect spinal stretch in Parivrtta Janu Sirsasana



P2 - Correct spinal stretch in Parivrtta Janu Sirsasana



Fig 7 GB in PJS 1 right side

Comments:

In PJS 2 with the right leg extended, there is a significant alteration in shape and size noted (fig8).

We should understand that the shape of the GB in the pose done on the right side is different from that of the left side. In addition, the GB has been aligned horizontally and made linear in shape.

During dynamic exercise the lungs, liver, spleen and kidneys auto-reduce their blood flow to help redistribution to actively exercising muscles⁵. However, Yoga is different. In Asanas, the legs, though exercised, face strain of a different nature. The flow velocity in the renal artery increases even though the legs are exercised.

Next, we shall consider the flow pattern in the (left) renal artery in the sitting erect posture in comparison to Parivrtta Janu Sirsasana.

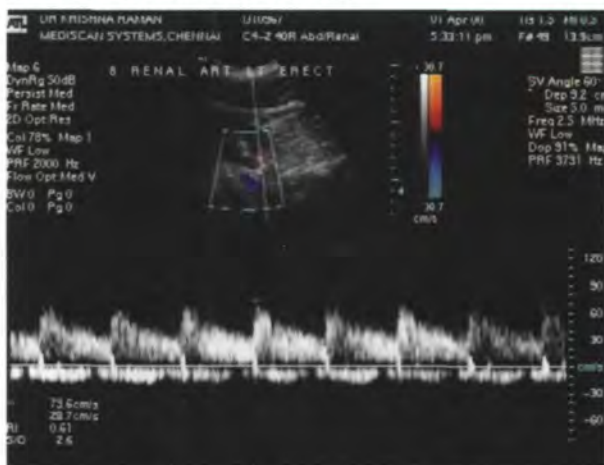


Fig 9 left renal artery sitting erect

This is a fine pose to tone the kidneys but a right understanding is important. Currently, conventional thought does not realize that Yoga poses can enhance renal artery flow; and this at no cost of systemic parameters being altered. This is the unique advantage of Yoga-benefitting regional blood flow, which dwindles as we age.



Fig 8 GB in PJS 2 right side



P3-Incorrect spinal stretch in Parivrtta Janu Sirsasana (note the contracted spinal stretch)



P4-Correct spinal stretch in Parivrtta Janu Sirsasana (note the enhanced spinal stretch)

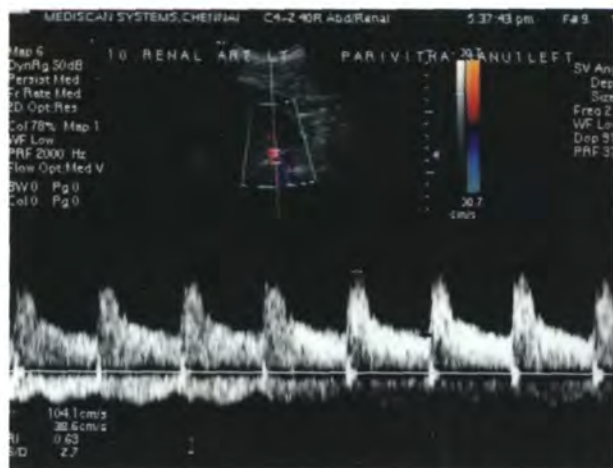


Fig 10 left renal artery in PJS 1

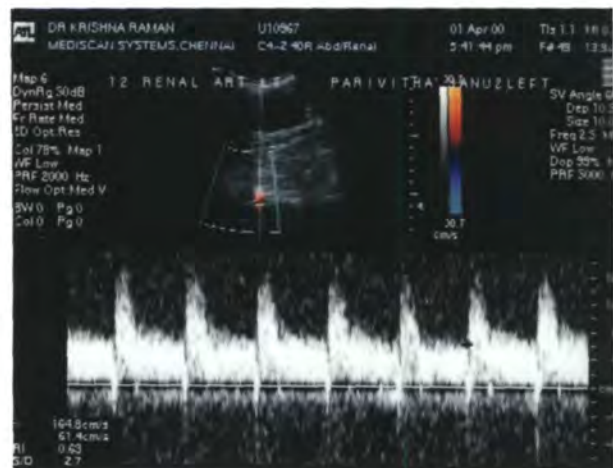


Fig 11 left renal artery in PJS 2

Comments:

There is a 30% improvement in blood flow between the resting and correct Yoga posture. There is also a significant “spectral broadening”, which is denoted by increased “brightness” of the Doppler spectrum in PJS 2 (fig 11). However, there is no change in the vascular resistance of the kidneys.

The body is marvelous machine and we need to practice Yoga precisely. If the spine is aligned in a concave manner and the sternum well stretched in PJS, and the paraspinal muscles well aligned, the renal artery will be well massaged. The greater the stretch of the spine, better the massage on the renal artery. Yoga practitioners should be aware of this concept. Hence, one can easily understand the value of **correct Yoga techniques**. These concepts are unknown to physicians and Yoga teachers. Sri BKS Iyengar intuitively elucidated such changes, and as physician, I am able to confirm this.

Doppler images of the popliteal artery flow in different Asanas and of other areas of the body in different Asanas have been described below.

Firstly, we need to appreciate the flow pattern in the popliteal artery in the standing erect posture (Tadasana) and the same done on the footrest (below right). The increase in flow velocity on the footrest is easily observed. This beneficial change is therapeutically useful for circulatory disorders in clinical practice.



Tadasana



Tadasana on footrest



Fig 12 left popliteal artery standing erect

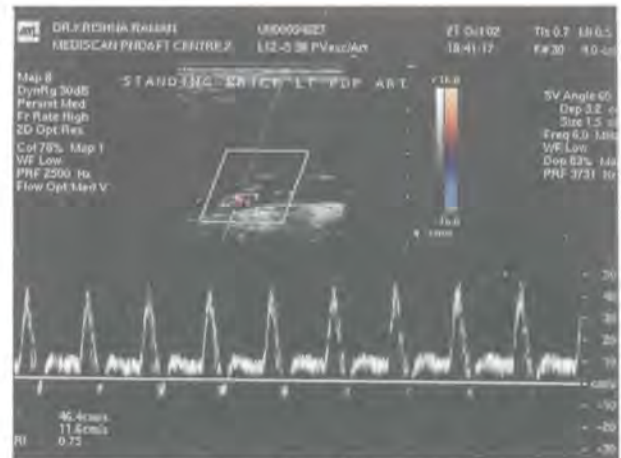


Fig 13 left popliteal artery on footrest

Comments:

The popliteal artery waveform shows a high resistance flow pattern (fig 12) in the standing erect posture as described at the beginning of the chapter. With the leg on the footrest, (for clarification of the term “footrest” please refer to the photograph) there is increased systolic and diastolic flow and a reduction in the “reversal” component below the baseline. The popliteal artery waveform shows a high resistance flow pattern (fig 13).

It is better that standing poses are practiced in the mornings, as the muscles of the legs will be non-fatigued. Many tend to practice these in the evenings after a tiring day and suffer exhaustion in the long term. The individual lifestyle of the practitioner determines whether standing poses can be attempted in the evenings. If one has been sedentary through the whole day, (e.g. IT professionals confined to the chair) it may be better to have a vigorous session comprising of standing poses coupled with inversions to help improve circulatory dynamics. It has been seen that if one attempts standing poses in spite of fatigue, in the belief that it is beneficial to the body, the post-Yoga circulatory status of the legs will be impaired. The sonological graphic pattern of the popliteal artery may also vary (to a point) from time to time in the same person. If we attempt standing poses after a prolonged car journey, the graphic patterns do not appear healthy. Again, if we sustain the poses beyond a limit, the arterial flow actually reduces. This could be harmful in the long term as cellular exhaustion can occur.

There are several kinds of muscle stretches that are in vogue. Static stretching is the safest. Yoga follows this principle. In static stretching, the sustained stretch of different muscles groups leads to neuro-muscular relaxation that is beneficial to the body. God has provided this science to humankind and yogis have realized the benefits of static stretching. Yoga also uses the principle of static contraction. Ballistic stretching is where the muscle is stretched to the limit and then the stretch further increased with a sudden bouncing movement. This is medically not advisable. Proprioceptive stretching involves alternating contraction of both agonist and antagonist muscle groups. This, again is not medically advisable as it is unhealthy to combine stretching and contraction repetitively. It is based on the principle that a contracted muscle stretches better and vice versa. Imagine practicing Uttanasana and Urdhva Dhanurasana several times as a single sequence-the spinal muscles would suffer acute spasm. This is why the science of Yoga uses a sequence to evolve into postures. Yoga uses simple poses to evolve into complicated poses. We do not need a “warm-up” as is conventionally thought. A beginner may have to practice Dog pose before Headstand, the former pose does not need any preparation. Dog pose can be its own preparation. This does not apply to persons who are excessively stiff when lateral bends like Trikonasana may be used prior to attempting Dog pose.

In Utthita Trikonasana, we see a marked increase in flow velocity when done correctly.

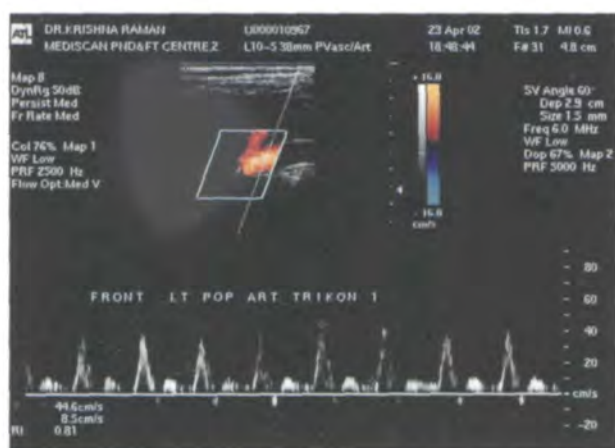


Utthita Trikonasana

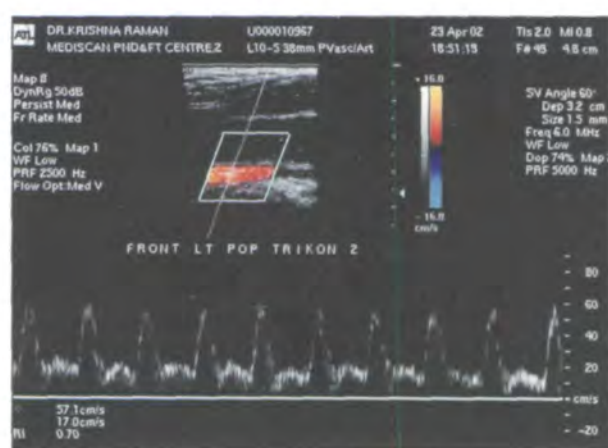
Comments:

S1a shows normal triphasic pattern of the popliteal artery. S1b shows absence of triphasicity and increase in the systolic and diastolic flow suggesting changes in the vessel caliber associated with reduced peripheral resistance due to dilatation of peripheral vessels and muscular branches. The waveform pattern is “biphasic”(S1b) without a change in systemic blood pressure.

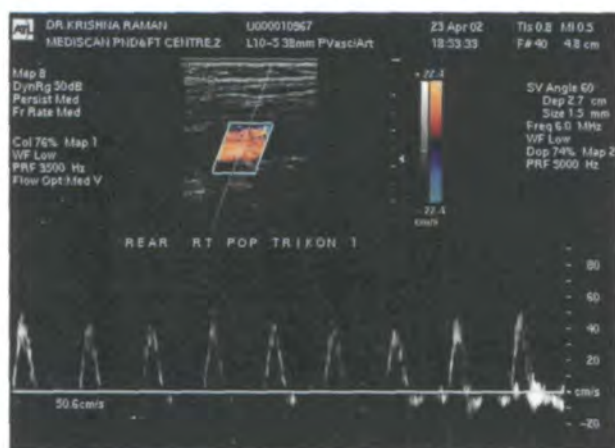
We should expand the muscles at the back of the frontal knee by stamping the inner heel firmly. The inner and outer ligaments of the frontal knee should be aligned parallel. To reiterate, *those who practice standing poses with the legs unlocked will not gain the benefit of enhanced blood flow.*



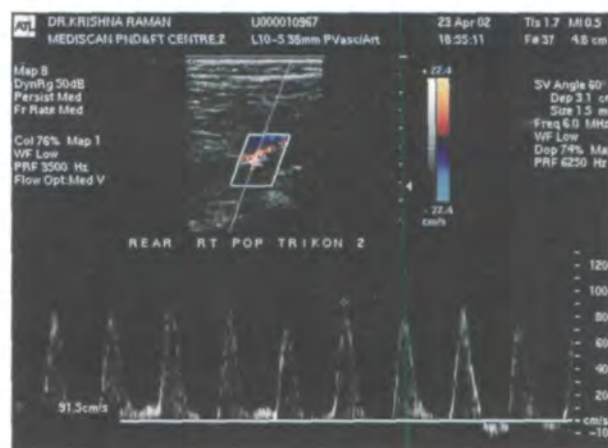
S1a Utthita Trikonasana 1 left popliteal artery front leg



S1b Utthita Trikonasana 2 left popliteal artery front leg



S1c Utthita Trikonasana 1 right popliteal artery rear leg



S1d Utthita Trikonasana 2 right popliteal artery rear leg

Comments:

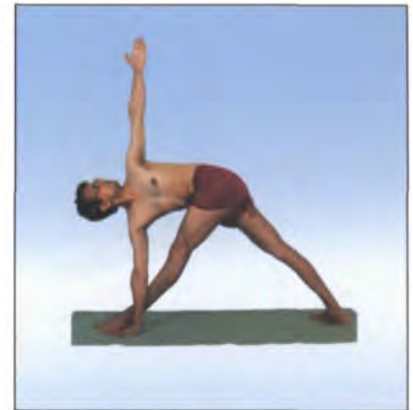
In S1d (correct pose) the waveform in the rear leg shows a “monophasic” pattern with increase in the peak systolic velocity (PSV). This is due to reduction in the arterial diameter owing to stretching of the arterial wall. The absence of the reversal component signifies reduced pulsatility.

In Parivrtta Trikonasana, the strain is more as the spine has to be twisted and the “depth” of the muscles of the groin of the front leg should increase in the pose to secure better blood flow in the leg.

Comments:

The “triphasic” pattern in the popliteal artery is maintained in the “incorrect” (S2a) and the “correct” (S2b) poses. However, a significant increase in the PSV is seen in the correct pose. There is reduced pulsatility as seen in the previous pose. A good spectral window is also seen signifying good flow laminarity.

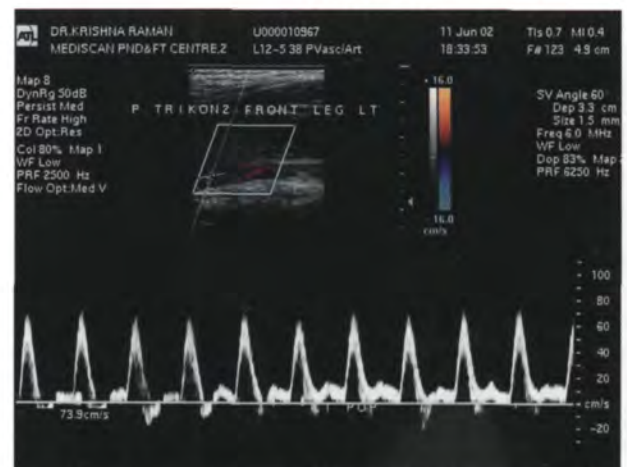
Often, we tend to relax the front leg in the pose as the pain of the locked knee can be considerable in the early stages. We should persist to abolish this pain and obtain the benefits of the pose.



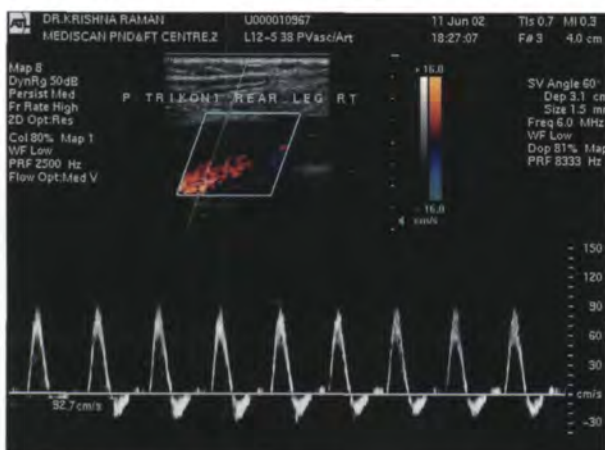
Parivrtta Trikonasana



S2a Parivrtta Trikonasana 1 left popliteal artery front leg



S2b Parivrtta Trikonasana 2 left popliteal artery front leg



S2c Parivrtta Trikonasana 1 right popliteal artery rear leg



S2d Parivrtta Trikonasana 2 right popliteal artery rear leg

Comments:

In the rear leg, in the correct pose (S2d), there is flow reversal throughout the diastolic phase which occurs due to significant stretching of the arterial wall. This pattern is exaggerated in Headstand (see S11b)

In Uttitha Parsvakonasana, the mechanics are slightly different. In the bent leg, the correct activation of the muscles by ensuring that the thigh is perfectly horizontal and the weight of the body falls more on the heel of the front leg, enhances blood flow.

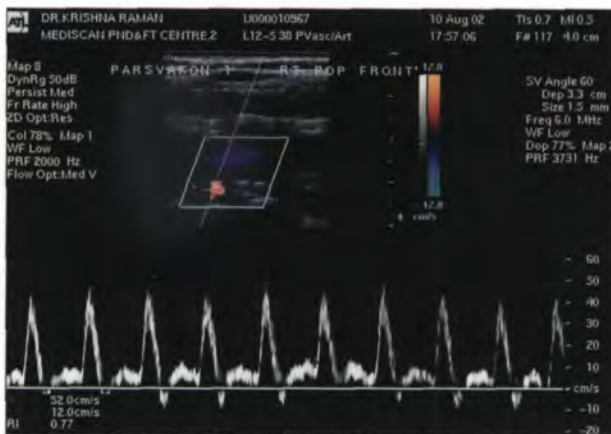


Uttitha Parsvakonasana

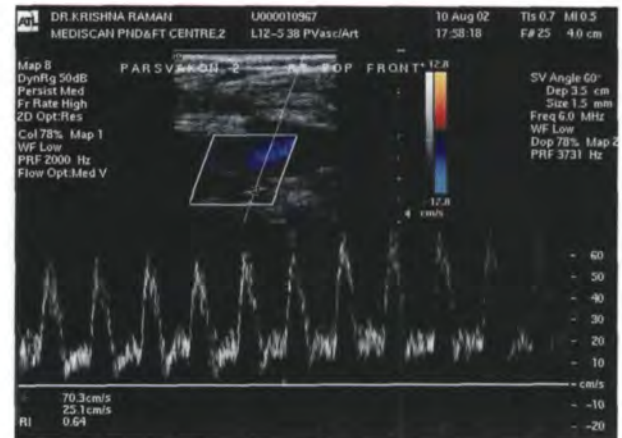
Comments:

When the knee is aligned at 90 degrees, and the body weight is maintained on the heel, there is a significant increase in the peak systolic velocity and diastolic velocity. The waveform appears to be “lifted” off from the baseline. This signifies reduction in vascular resistance (S3b).

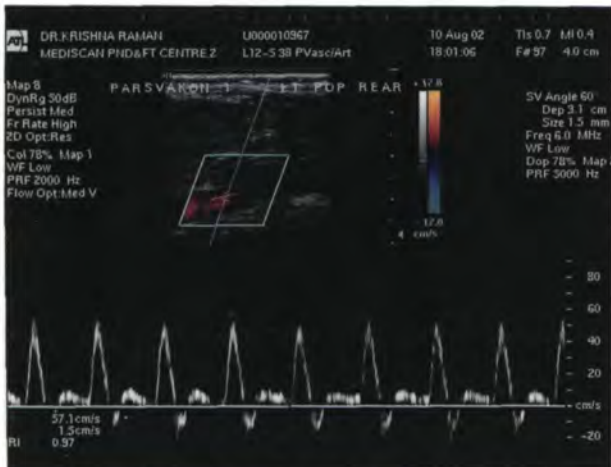
Very often, practitioners tend to neglect the need for a ninety- degree angle in this pose. The entire benefit will not be obtained.



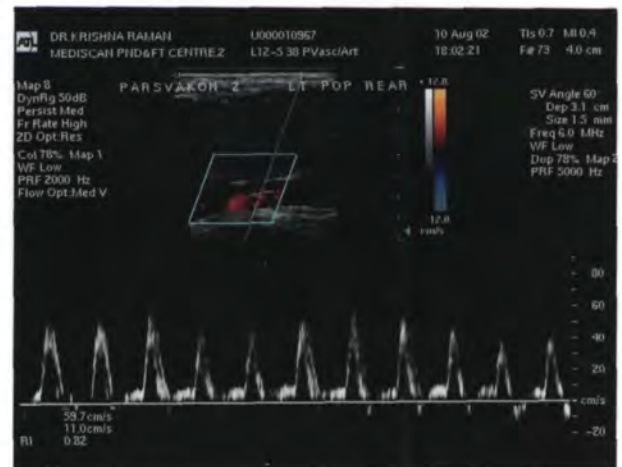
S3a Uttitha Parsvakonasana 1 right popliteal artery front leg



S3b Uttitha Parsvakonasana 2 right popliteal artery front leg



S3c Uttitha Parsvakonasana 1 left popliteal artery rear leg



S3d Uttitha Parsvakonasana 2 left popliteal artery rear leg

Comments:

In the rear leg, as was observed in Uttitha Trikonasana, there is a loss of triphasic pattern signifying reduced pulsatility of the vessel (S3d).

Parivrtta Parsvakonasana is a tough pose, as the rear leg requires to be pushed hard to achieve a straight line in “yogic geometry”. The velocity of blood flow in the front leg increases with correct alignment. In order to increase the flow even though the front leg is bent, one must maintain the depth of the back of the knee in the pose and descend the thigh adequately to get a horizontal line of the thighbone in the pose.

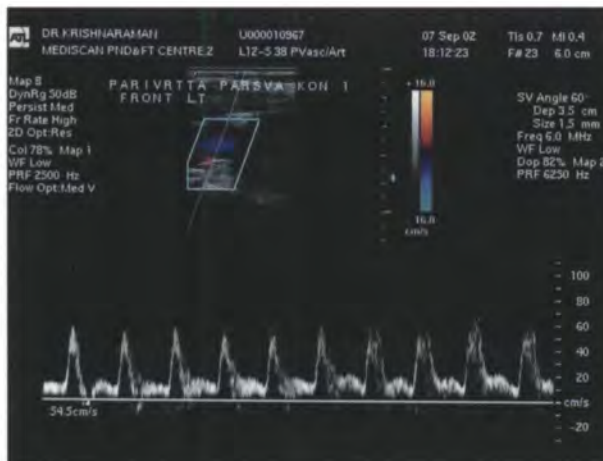
Comments:

In the correct pose (S4b) there is significant increase in the PSV with loss of triphasicity and increased diastolic flow due to peripheral vasodilatation.

In the rear leg, there is no significant change between the wrong and right pose (S4c and S4d) and also in comparison to the resting popliteal artery flow pattern.



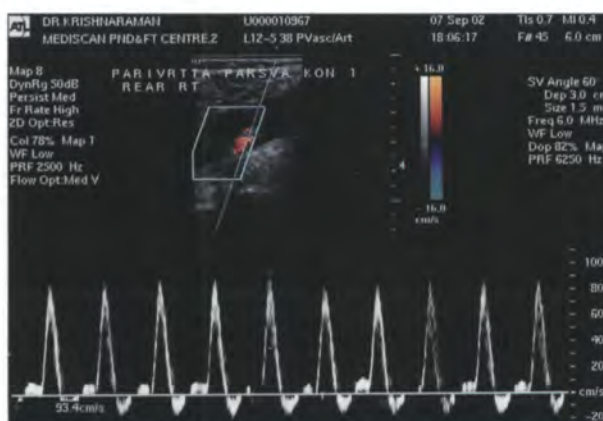
Parivrtta Parsvakonasana



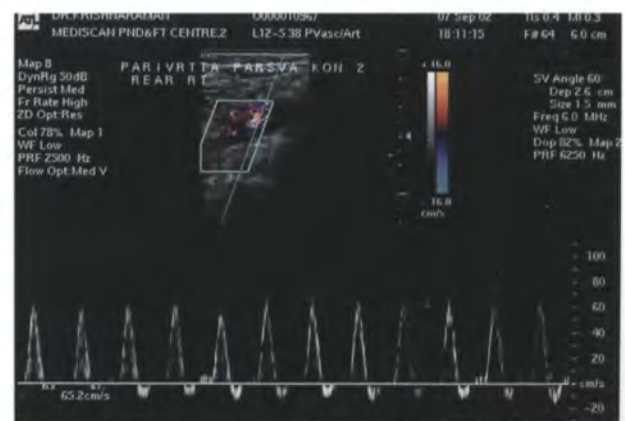
S4a Parivrtta Parsvakonasana 1 left popliteal artery front leg



S4b Parivrtta Parsvakonasana 2 left popliteal artery front leg



S4c Parivrtta Parsvakonasana 1 right popliteal artery rear leg



S4d Parivrtta Parsvakonasana 2 right popliteal artery rear leg

Though there is a lot of strain in the rear leg, yet the flow pattern does not show much change contrary to popular logic.

Virabhadrasana I is a dynamic pose. The hemodynamics of the front leg appears to be similar to Parsvakonasana. In Virabhadrasana I the correct activation of the front leg increases the flow velocity.



Virabhadrasana I

Comments:

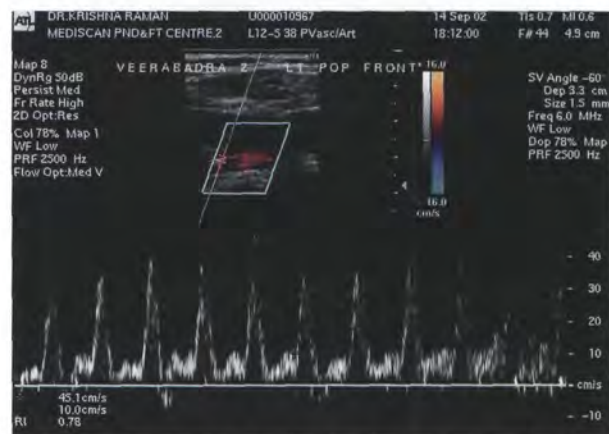
In the correct pose (S5b) there is significant increase in the PSV though the pulsatility appears to be the same.

The rear leg has a peculiar twist when kept straight and this enhances the elasticity of the popliteal artery *circumferentially* which no other Asana achieves. A unique pattern is obtained.

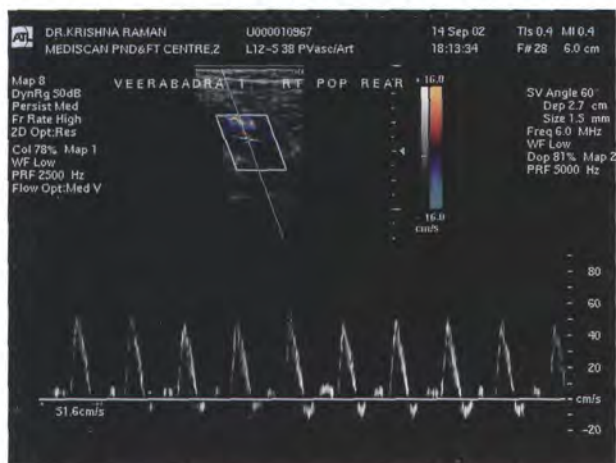
The rear knee should be uncompromisingly straight to benefit the cartilages of the knee. This is one of the finest poses to tone the meniscus but a correct understanding of the mechanics is important. Faulty alignment and pressure can impair knee function.



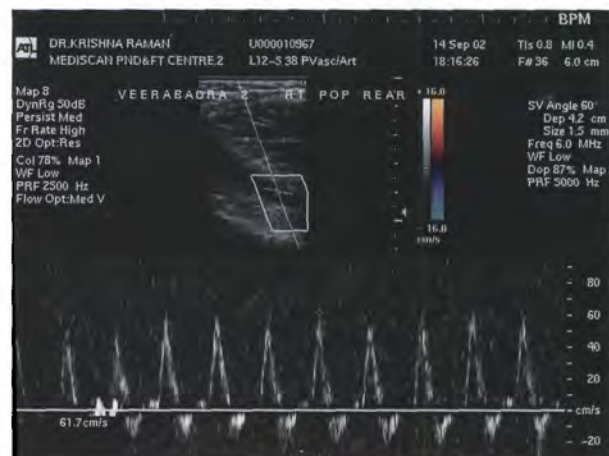
S5a Virabhadrasana I left popliteal artery front leg 1



S5b Virabhadrasana I left popliteal artery front leg 2



S5c Virabhadrasana I right popliteal artery rear leg 1



S5d Virabhadrasana I right popliteal artery rear leg 2

Comments:

In the correct posture (S5d), the waveform is biphasic with increase in the “reversal” component. No significant increase in the PSV is noted.

Virabhadrasana III is a unique pose in that the entire weight of the leg is borne on one leg. The pelvis must tilt forward deeply to produce this effect. The correct “lengthening” of the front leg occurs from the big toe and dorsal spine and this produces even **a reversal of flow**. This reversal indicates a turbulence of blood flow that irrigates the tissues of the leg.

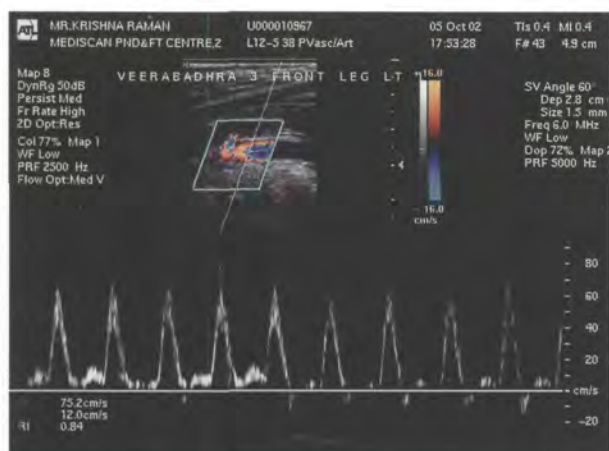
Comments:

In S6b, the correct posture, the flow reversal in early diastole is increased signifying increased pulsatility. However, the PSV is maintained as the vessel diameter is unchanged. In Headstand, this flow pattern appears exaggerated.

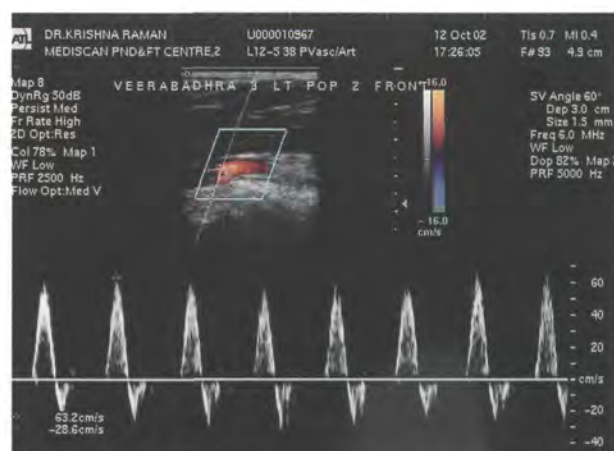
The quadriceps of the rear leg is activated and lengthened. The tendons at back of the inner knee are the key to securing this benefit.



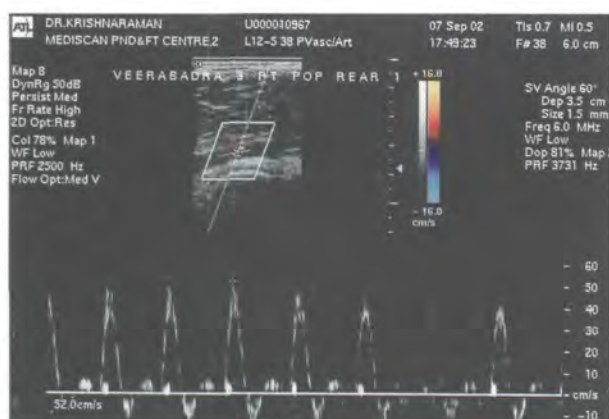
Virabhadrasana III



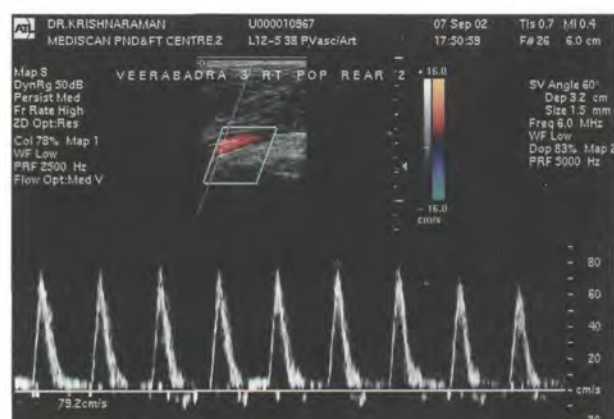
S6a Virabhadrasana III left popliteal artery front leg 1



S6b Virabhadrasana III left popliteal artery front leg 2



S6c Virabhadrasana III right popliteal artery rear leg 1



S6d Virabhadrasana III right popliteal artery rear leg 2

Comments:

In the rear leg, (S6d), we can notice a clear spectral window, which is indicative of a laminar stream of flow. This underlines the importance of correct posture.

In Ardha Chandrasana, the flow pattern is different as one leg is positioned in the air sideward. On the leg that is stable on the ground, the velocity increases when one activates the muscles properly. This depends on the increase in the “depth” of the frontal groin and the elongation of the frontal inner leg muscles.



Ardha Chandrasana

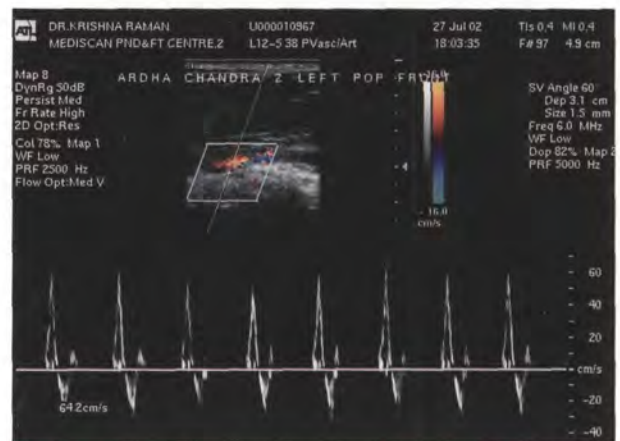
Comments:

The vertical leg in S7b shows a similar pattern to Virabhadrasana III. This reiterates the fact that hemodynamic changes have a predictable pattern in a stretched leg.

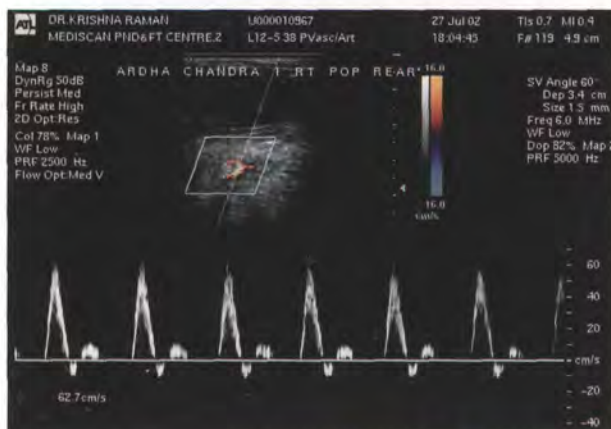
In the leg that is kept in the air (the rear leg), the pattern is different. The muscles of the leg are activated properly from the spine (incorrect S7c and correct S7d).



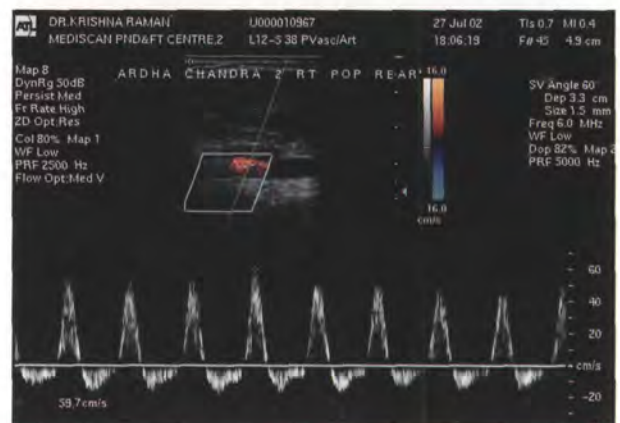
S7a Ardha Chandrasana 1 left popliteal artery front leg



S7b Ardha Chandrasana 2 left popliteal artery front leg



S7c Ardha Chandrasana 1 right popliteal artery rear leg



S7d Ardha Chandrasana 2 right popliteal artery rear leg

Comments:

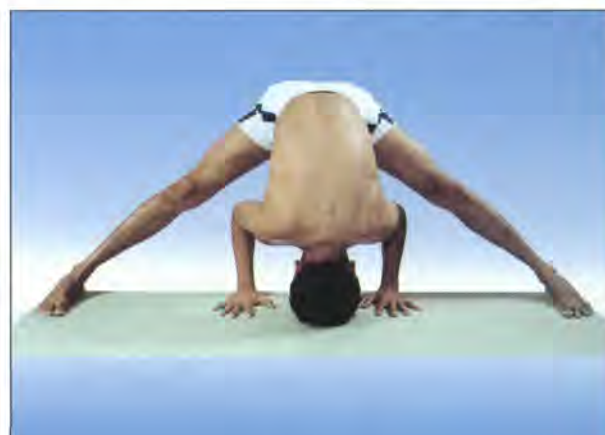
In the rear leg, there is flow reversal throughout diastole in the correct pose (S7d). The flow pattern in the incorrect pose (S7c) resembles that of a normal resting leg!

Let us see the changes in Prasara Padottanasana where the flow dynamics are unique owing to the position of the legs.

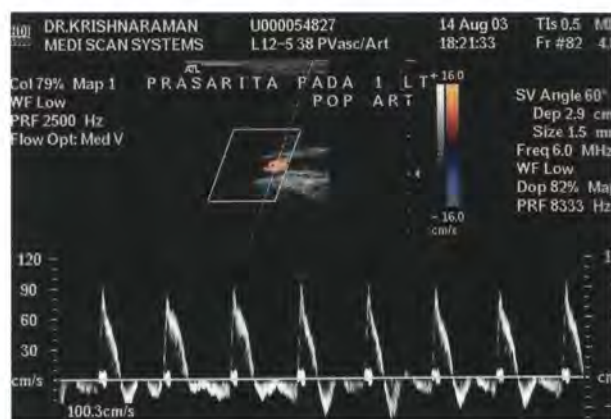
Comments:

The flow velocity waveform shows no significant increase in the PSV but there is significant increase in the velocity of the reversal component(S8b). There is also a marked reduction in the systolic time. This is probably on account of the placement of the legs in a split manner.

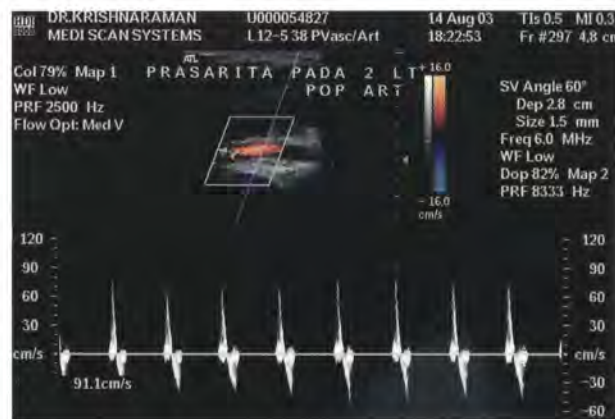
The reduction in blood flow in the legs is very evident on the Doppler machine if this pose is practiced when the legs are tired. This is because of the abducted position of the legs. The audio



Prasara Padottanasana



S8a Prasara Padottanasana 1 left popliteal artery



S8b Prasara Padottanasana 2 left popliteal artery

pattern of this flow on the Doppler machine is unique. If the grip on the pose is lost and the Asana is maintained beyond capacity, the sound pattern changes. The more the gluteal muscles are stretched the better the reversal of flow in the leg muscles.

Dog pose is a neutral Asana and is neither a back nor forward bend. The legs being forced down (from a height) by raising the gluteus then descending the heels, the flow velocity should have increased in the legs. However, this was contrary to what occurred. We noticed a flow reduction. This is not harmful. If the blood supply were always increasing, the body tissues would sag and the arterial walls become weak with the strain. Yoga provides Asanas that increase and decrease blood flow. Opening a tap always is loss of nutrition and wastage, constant closure prevents removal of toxins. Both opening and closure are beneficial.

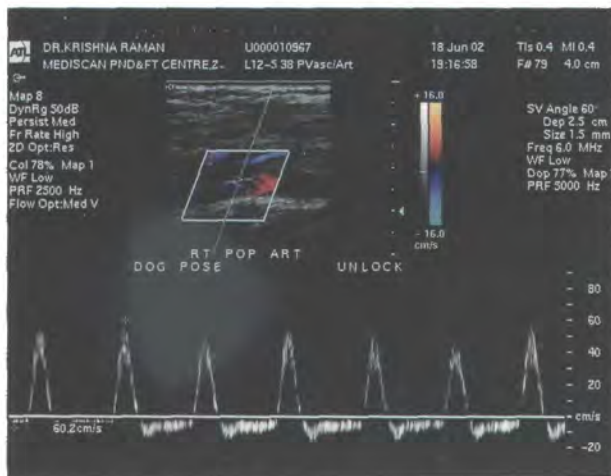
Dog pose may be an intense stretch of the posterior compartment of the legs and yet we do not secure the benefit of Trikonasana or Parsvakonasana. These are points that Yoga practitioners must be conscious of while attempting the poses. Many well-trained habitual Yoga practitioners tend to place the legs and hands too close and contract the spine. Dog pose is one of the finest poses that benefit an athlete to "warm-up". However, a bouncing action of muscle usage must be avoided.



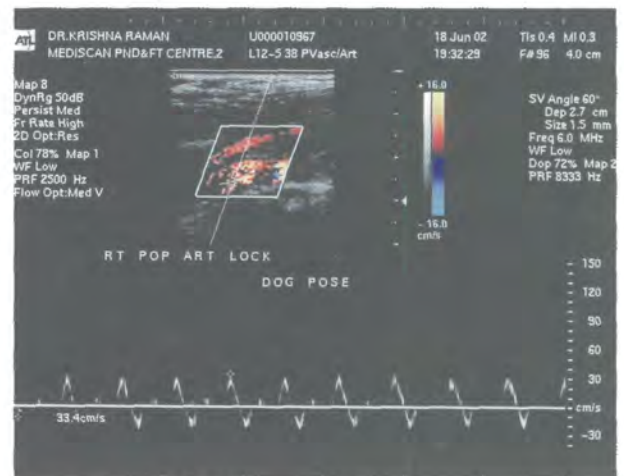
Dog Pose

Comments:

Interestingly, in the correct pose (S9b) there is significant reduction in the PSV signifying reduction in the flow input possibly due to acute kinking of the femoral artery.



S9a Dog pose 1 right popliteal artery



S9b Dog pose 2 right popliteal artery

Parsvottanasana is the next pose in the analysis. The flow changes appear minimal in this pose.

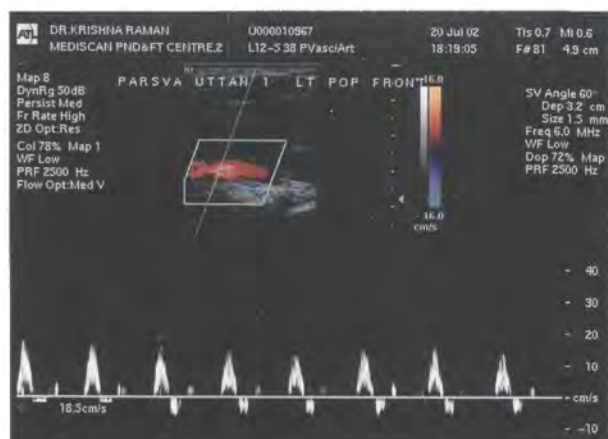


Incorrect stretch of the legs in Parsvottanasana

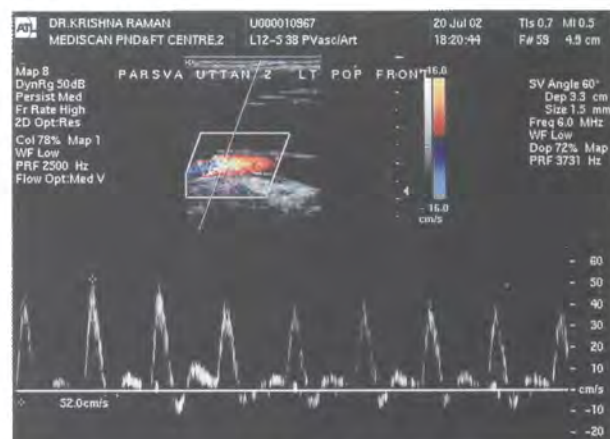


Correct stretch of the legs in Parsvottanasana

An incorrect advice often given to students attempting this pose is not to overstretch the knee by locking the quadriceps muscle. The knee will not be damaged if the practitioner understands how much to stretch and how much pressure to be transmitted to the frontal and back knee. Even a student with hyper-extended knees can be taught not to overstretch and yet lock the knees firmly in the pose. The tendons on the dorsum of the front and back feet need to be very active to balance the strain on the knee. Pelvic alignment is equally important to prevent strain on hyper-extended knees. The key to adjusting the strain on the knee is to adjust the load to an optimum on the medial ligaments of the knee joint.



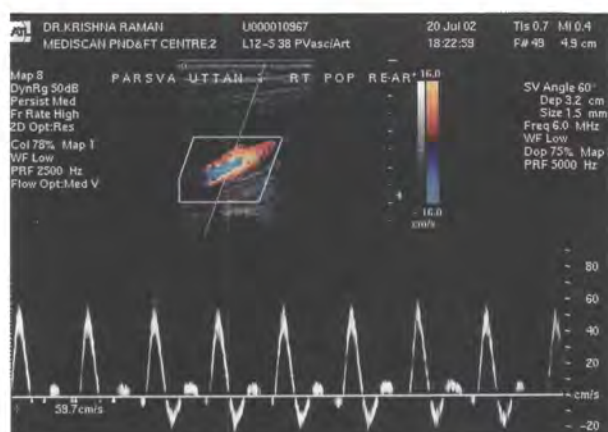
S10a Parsvottanasana 1 left popliteal artery front leg



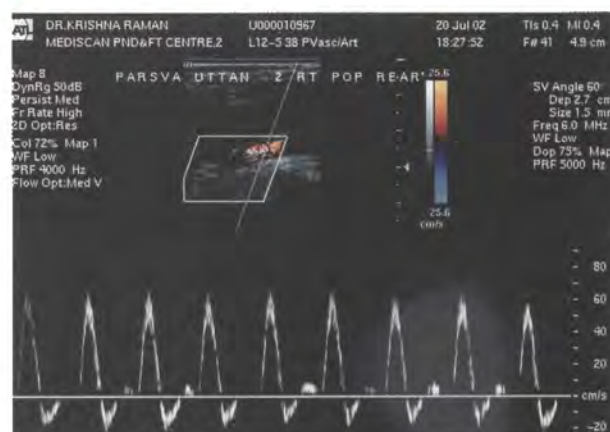
S10b Parsvottanasana 2 left popliteal artery front leg

Comments:

In S10b, triphasicity is maintained. There is no significant increase in the PSV as compared with a resting leg pattern even though this leg is also stretched. This can be explained by the fact that in this pose there is no change in the diameter of the popliteal artery.



S10c Parsvottanasana 1 right popliteal artery rear leg



S10d Parsvottanasana 2 right popliteal artery rear leg

Comments:

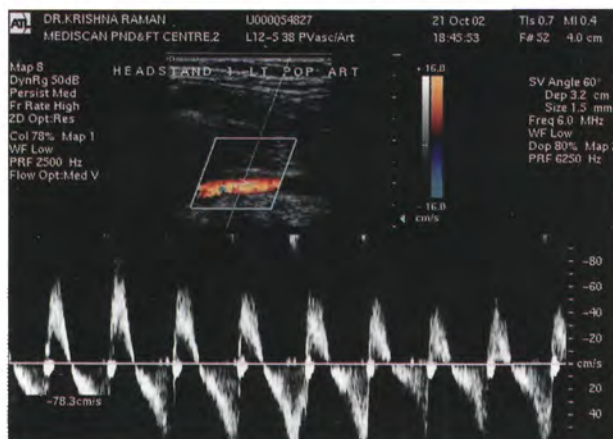
In the rear leg, the flow velocity change (between the right and wrong poses) remains negligible (S10d).

In spite of an intense stretch on the legs, there is no change in the flow pattern. One would tend to feel that the stretch of the hamstrings would have appreciably enhanced the circulation of the legs. Yet, we see something to the contrary. The “good” feeling that we experience after a healthy stretch is not necessarily due to better blood flow. Neurogenic mechanisms play a role in that sensation of “lightness” felt after a good stretch. Better tissue perfusion after the stretch is released might account for this, as a well-stretched muscle tends to relax better after the stretch. Yoga poses provide benefit both during and after their performance. Neurogenic mechanisms that play a vital role in muscle physiology can be hampered if stretches are done with too much force. A “warm down” is never used in Yoga. We use sequential “counter poses” to remove strain completing with Savasana. This Asana is also done by carefully adjusting all muscles groups to prevent uneven stress in the recovery stage.

Let us analyze the flow patterns of the popliteal artery in Headstand.



Imaging the popliteal artery in Headstand



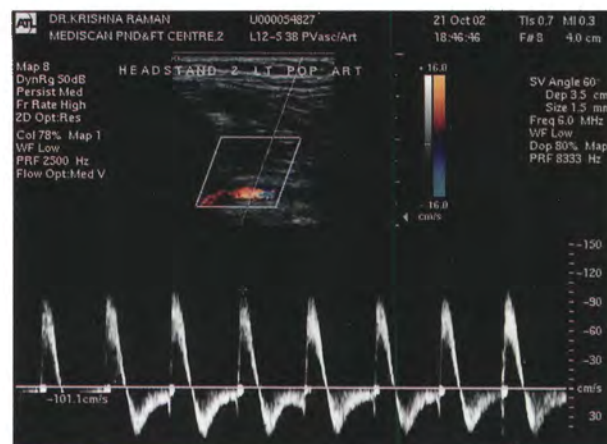
S11a Headstand 1 left popliteal artery

The differences in flow velocity are evident in the Shoulderstand 2 (S12). The velocity is slightly greater than that of Headstand as the posterior part of the legs have to be vigorously activated in Shoulderstand. Arterial flow patterns may demonstrate changes only if significant changes occur in body anatomy. In Headstand, the dispositions of the leg muscles are very different from Shoulderstand.

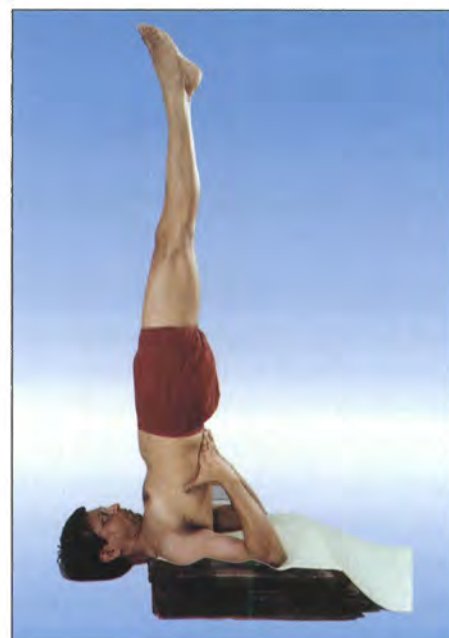
Note the healthy increase in blood flow in the legs in Headstand 2. In addition, the flow pattern is different (from Tadasana) even in the incorrect pose with the legs inert! The inward turning and ascension of the legs upwards against gravity is responsible for the healthy blood flow increase. The body adapts to the inverted posture by altering the arterial flow to the extremities.

Comments:

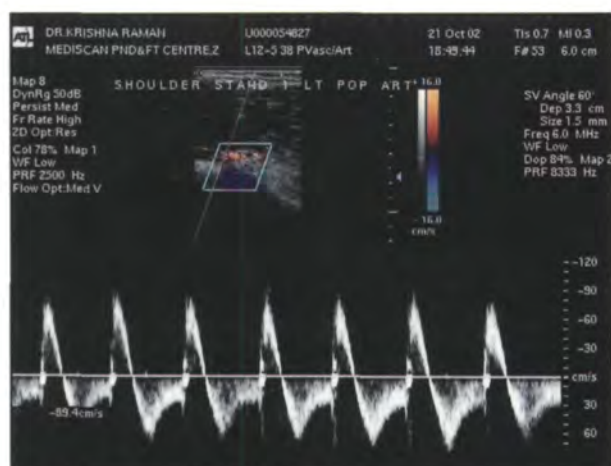
In the correct Headstand (S11b), there is a remarkable flow reversal throughout diastole. The vessel lumen becomes narrow.



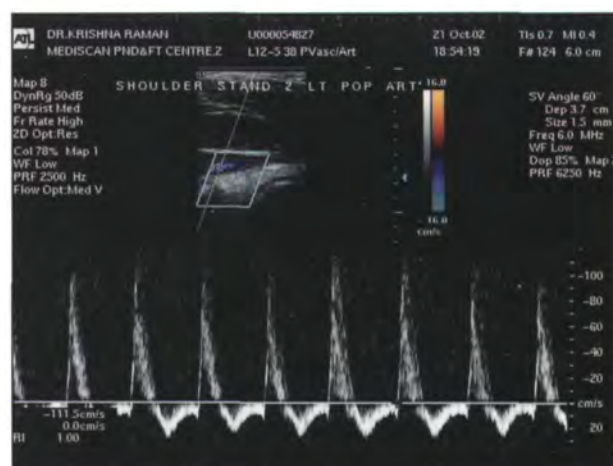
S11b Headstand 2 left popliteal artery



Shoulderstand



S12a Shoulderstand 1 left popliteal artery



S12b Shoulderstand 2 left popliteal artery

Comments:

In the correct pose (S12b), there is increase in the PSV. Flow reversal is seen in diastole as in Headstand.

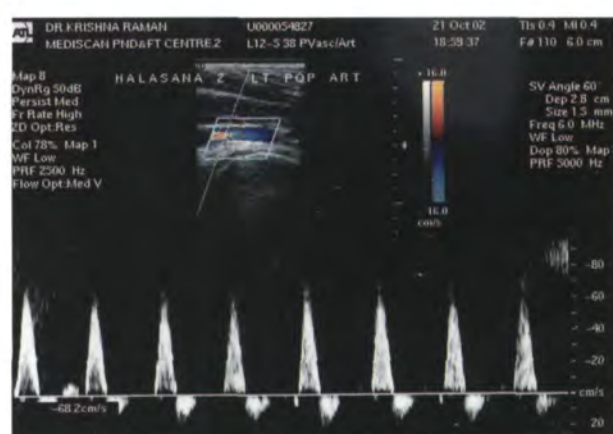
The difference is evident in Halasana (S13) also with changes in flow velocity in Halasana 2. The hip joints in Halasana have to be pushed healthily upwards to achieve this increased blood flow. The muscles at the back of the *inner* knees have to expand well.



Halasana



S13a Halasana 1 left popliteal artery



S13b Halasana 2 left popliteal artery

Comments:

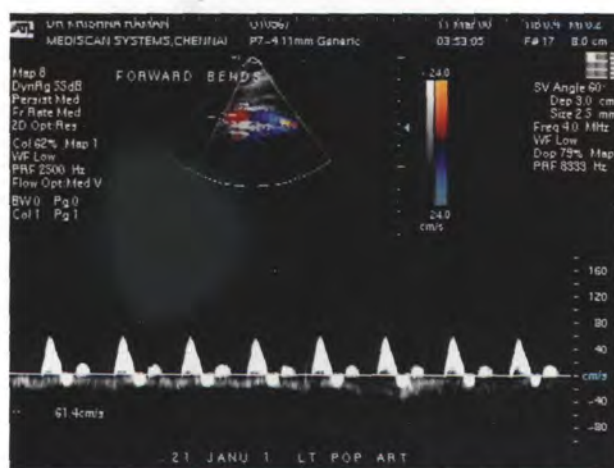
In Halasana, there is an increase in the PSV (S13b) without change in the vascular bed impedance indicating stretching of the popliteal artery.

This demonstrates that we need not conclude that only standing poses increase the flow velocity in the legs. Inverted poses are equally beneficial (if not better) for this purpose.

Let us study the flow changes in the popliteal artery in forward bends like Janu Sirsasana and Paschimottanasana. In these poses, we stretch and compress the abdomen with the legs being intensely stretched.



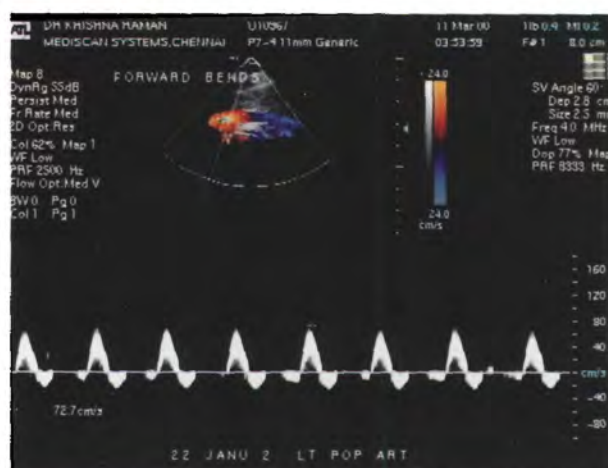
Janu Sirsasana



S14a Janu Sirsasana 1 left popliteal artery

Comments:

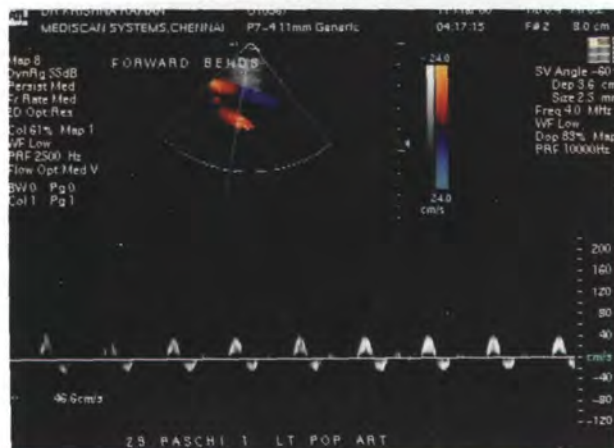
In this pose, there is no significant increase in the PSV (in the legs) or the waveform pattern, even though the popliteal artery is stretched S14b. This is obviously an unusual pattern as compared to the previous situations where the popliteal artery is also stretched. This is due to the fact that the femoral artery receives reduced input due to a kink in the area of the inguinal ligament.



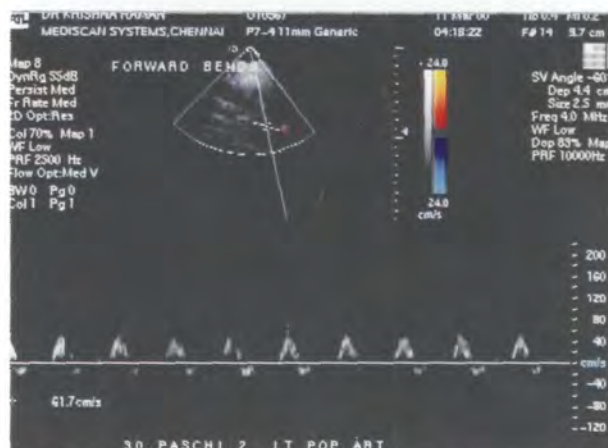
S14b Janu Sirsasana 2 left popliteal artery



Paschimottanasana



S15a Paschimottanasana 1 left popliteal artery



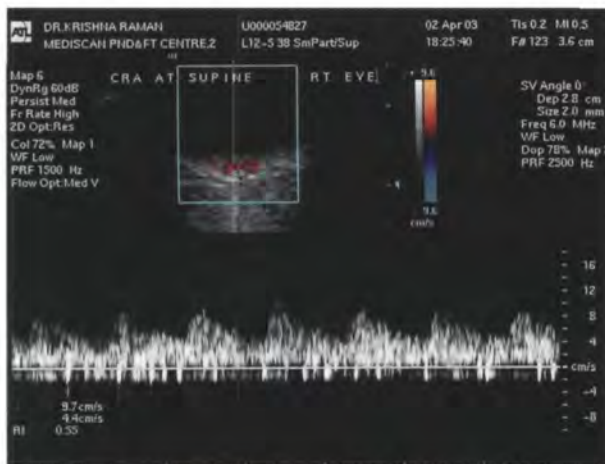
S15b Paschimottanasana 2 left popliteal artery

Comments:

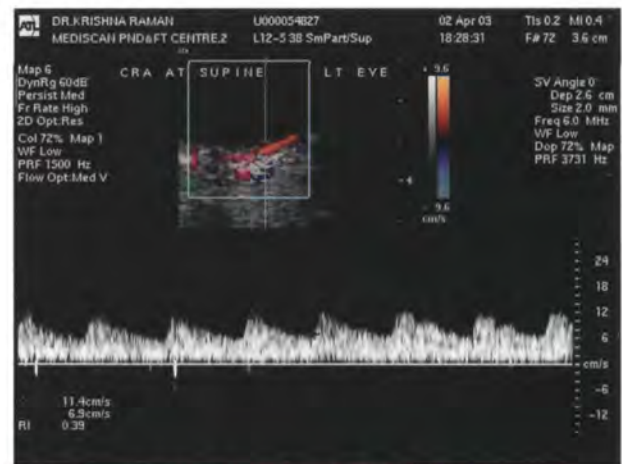
In Paschimottanasana, the flow pattern is similar to Janu Sirsasana and the same explanation can be given for the waveform pattern (S15b).

Flow velocities in the eye in response to dynamic exercise have shown to be constant in the central retinal artery (CRA) and reduced in the ophthalmic artery⁶. Both are compensatory mechanisms to protect the eye. Other studies have shown sub-maximal exercise to increase the velocity in the ophthalmic artery. All these are studies done before and after the exercise bout. With Yoga, we can study the vascular changes (if any) as we practice the pose.

In the central retinal artery, the velocity of flow (compared to the supine posture) does not increase much in Headstand (S18), Shoulderstand or half Halasana (S19 and S20). This confirms auto-regulation of the blood flow in the CRA. This auto-regulating capacity is lost as we age. Habitual exercise of the right stimulus can prevent this. The common understanding is that Headstand improves the blood flow to the eye. In several Yoga books, we often see similar comments such as “Headstand provides pure and better blood flow to the eye”. This assumption may be incorrect.



S16 Central retinal artery supine right eye



S17 Central retinal artery supine left eye



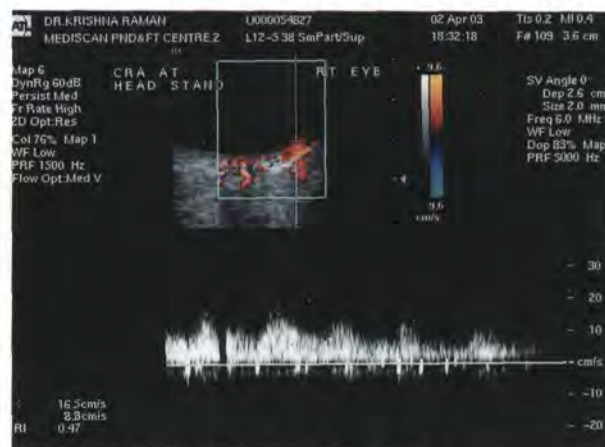
Headstand



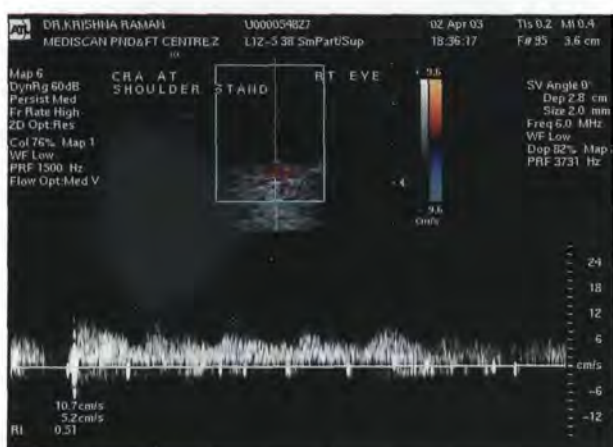
Shoulderstand



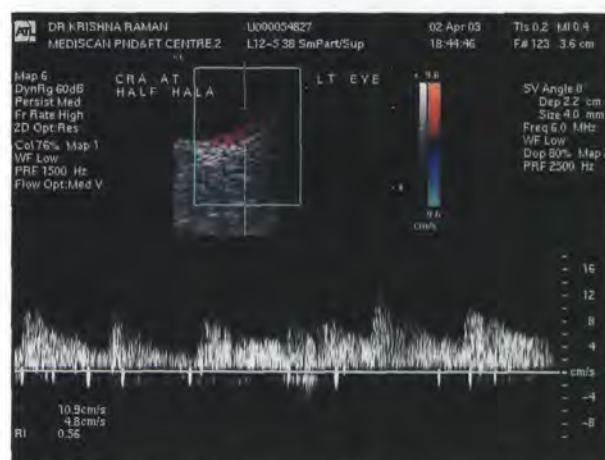
Half Halasana



S18 Central retinal artery in Headstand



S19 Central retinal artery in Shoulderstand



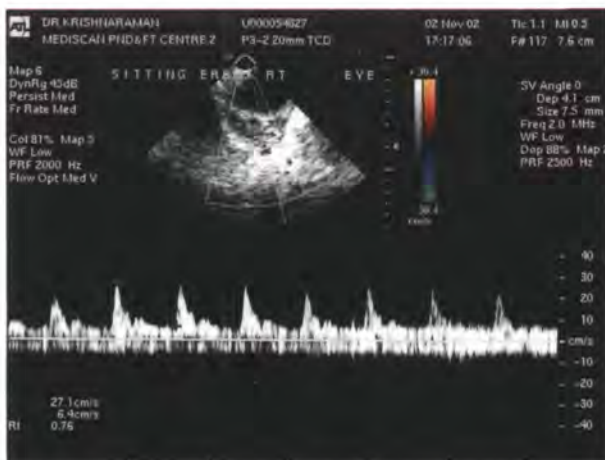
S20 Central retinal artery in half Halasana

Comments:

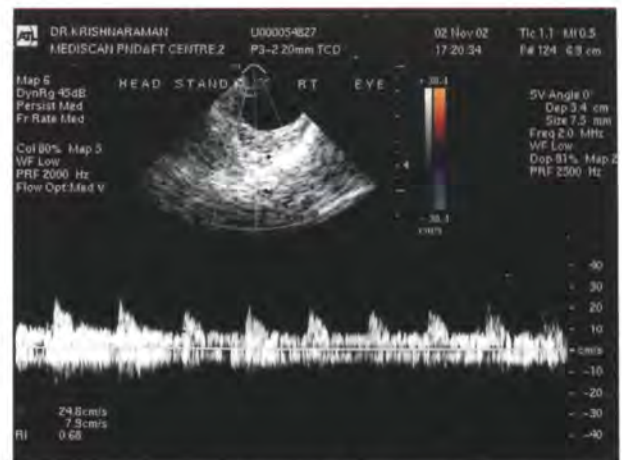
The flow velocities in the CRA show no significant change during Headstand, Shoulderstand and Halasana even though there should be an alteration due to gravitational forces. This helps to explain the remarkable auto-regulatory function in the vessels supplying the brain.

Considering the ophthalmic artery, correct practice of inversions **does not increase the arterial pressure in the eye while performing them**. The scan (S21) on the left shows the flow velocity in the ophthalmic artery in the sitting erect posture and the one on the right (S22), in Headstand done correctly. Spinal alignment is the key to prevent increase in eye pressure beyond a point. The placement of the head determines the pressure in the eyeball and the artery. The reasons for the lack of pressure increase are several and too technical to be discussed in this book.

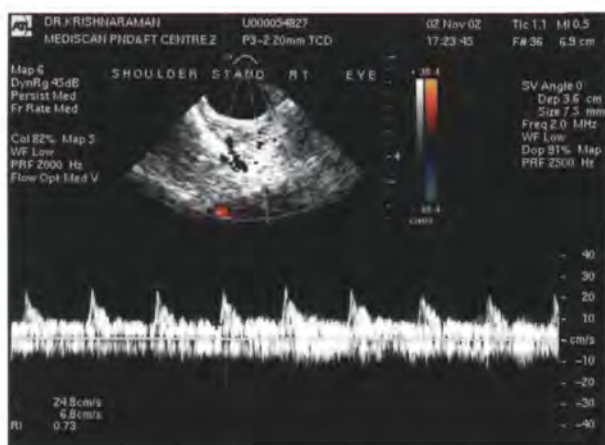
The “relaxed” feeling that occurs in the cranio-facial area might be explained by neurogenic mechanisms. The facial structures are very touch sensitive and minute alterations in skin and muscle flow are perceived very well. Branches of the external carotid artery supply many parts of the face and we have seen alterations in the carotid artery flow in the inverted poses. These alterations might have secondary neurogenic responses that might account for a soothing feeling on completion of the pose. The facial skin must descend from the forehead towards the bridge of the nose. The muscles of the lower jaw must not drop down but rather ascend to meet the upper jaw.



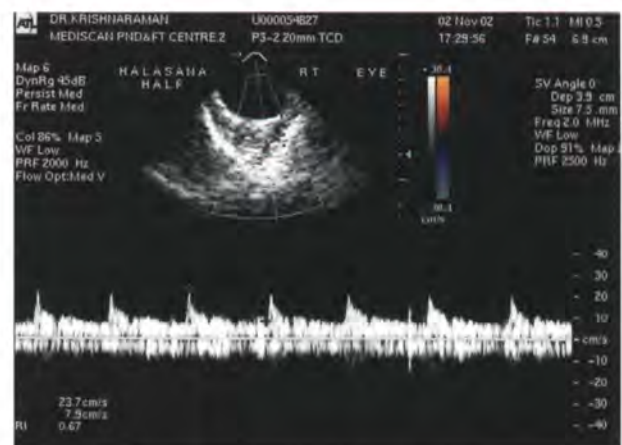
S21 Right ophthalmic artery sitting erect



S22 Right ophthalmic artery in Headstand



S23 Right ophthalmic artery in Shoulderstand



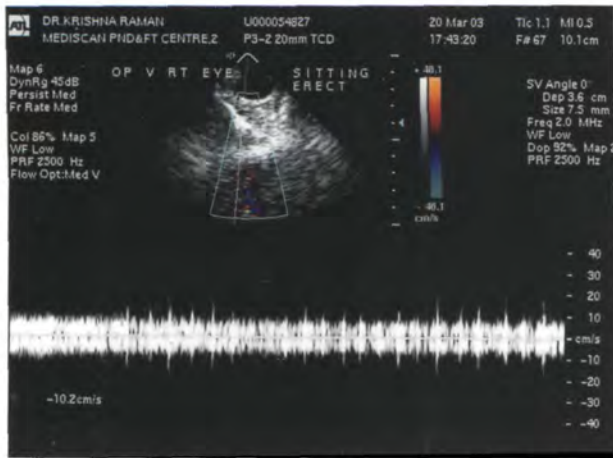
S24 Right ophthalmic artery in half Halasana

Practitioners who feel a tension in the eye while performing this Asana are definitely incorrect in technique. Half Halasana (S24) is very restful for the eye and we can see that the velocity does not alter compared to the erect posture that is the ideal effect. This is a soothing pose for chronic migraine and tension headaches accompanied by eye pain. The weight of the body, borne by the stool provides for relief.

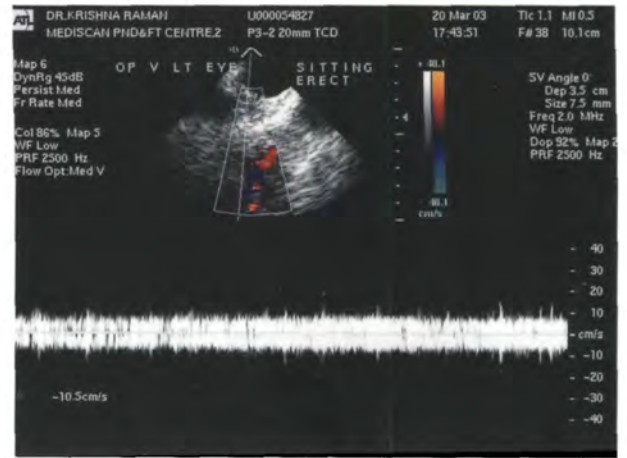
Comments:

In all the above three postures (S22, S23 and S24), there is no change in velocity in the Ophthalmic artery confirming the auto-regulatory mechanisms.

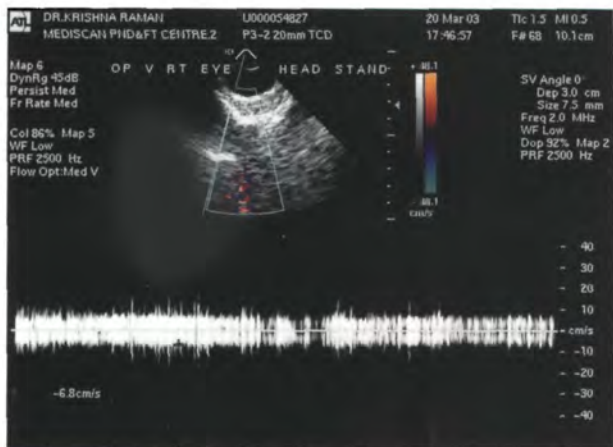
The velocity does not increase in the ophthalmic veins too. This might be a compensatory adjustment to protect the eye. At this juncture, it is important to highlight that several studies have shown that intraocular pressure increases in the head down position. **Similar changes definitely occur with yogic inversions contrary to popular thought.** Yet the eye does not suffer deleterious effects (except in those predisposed to it). Such persons must avoid inversions until certified medically fit. The compensatory mechanisms that protect the eye are yet to be understood. Yoga practice must not include Headstand alone, but Shoulderstand and forward bends. There might be many levels of compensation that prevent rise in pressure. Forward bends are very beneficial probably working through neurogenic mechanisms. These mechanisms are the cause for relief for those suffering chronic headaches with an ophthalmic component.



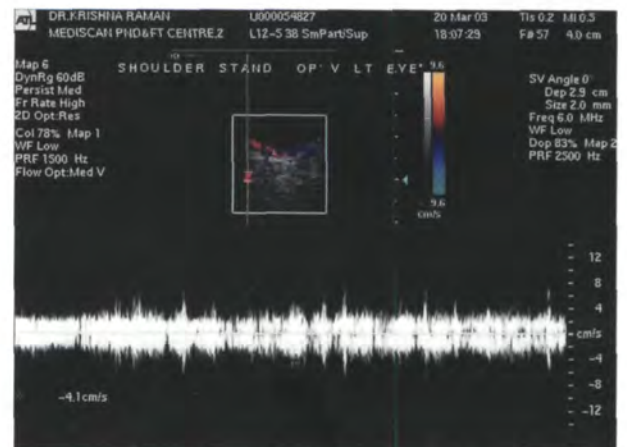
S25 Ophthalmic vein sitting erect right eye



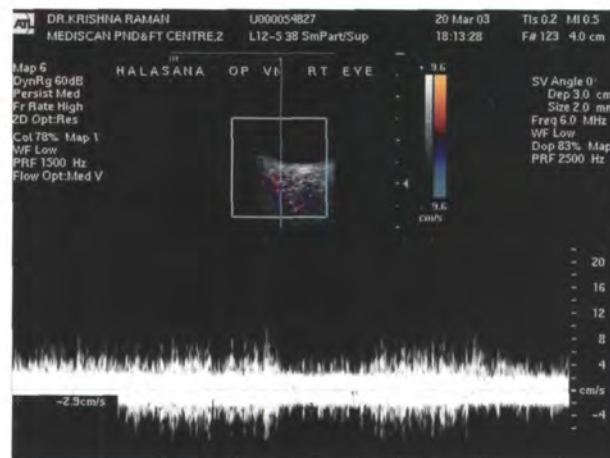
S26 Ophthalmic vein sitting erect left eye



S27 Ophthalmic vein in Headstand right eye



S28 Ophthalmic vein in Shoulderstand left eye



S29 Ophthalmic vein in Halasana right eye

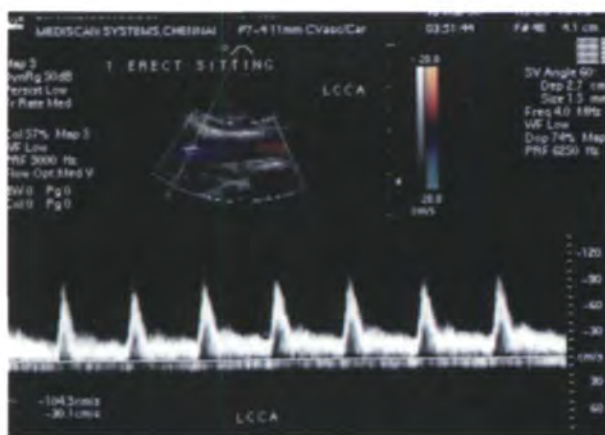
Comments:

In scans S27, S28 and S29 there is no change in velocity in the ophthalmic vein.

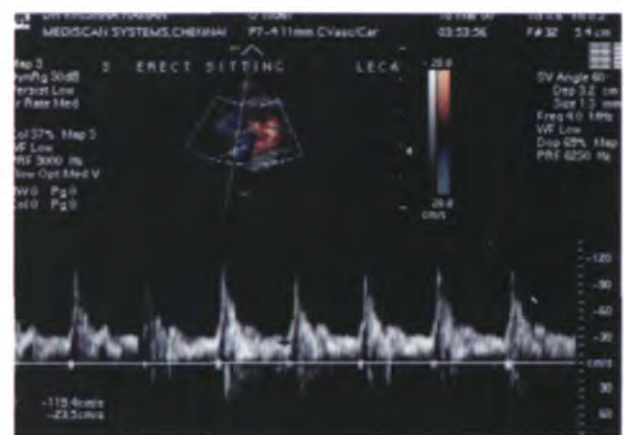
During dynamic exercise, there are complex flow changes in the carotid arteries and the brain. In the common carotid artery, treadmill exercise has shown to increase flow velocity⁷. Again, in the common carotid, rowing ergometer exercise has shown to reduce flow velocity⁸. In the external, internal carotid artery and middle cerebral artery supine exercise has shown to increase flow velocity at moderate strain. This decreases with the higher intensity of exercise in the same vessels⁹. We know that posture influences carotid and cerebral artery flow¹⁰. However, the understanding of cerebral hemodynamics is still incomplete with conflicting studies.

Let us consider flow changes in the left common, left external and left internal carotid (LCCA, LECA, LICA) arteries and anterior, middle and posterior cerebral arteries (ACA, MCA, PCA) in inverted poses and compare them to the sitting erect posture. In Yoga poses, the flow patterns in these arteries are different from that of conventional exercises.

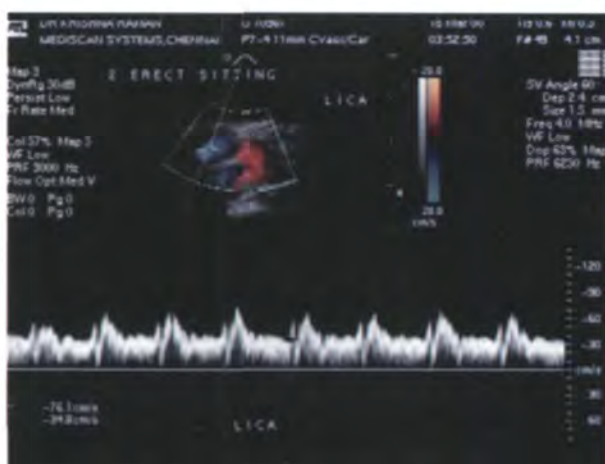
The scans below comprise the flow changes of the carotid arteries in the sitting (erect) posture (S30-S32).



S30 LCCA sitting erect



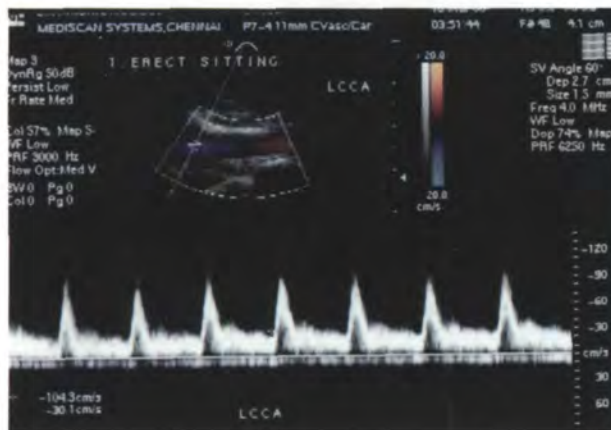
S31 LECA sitting erect



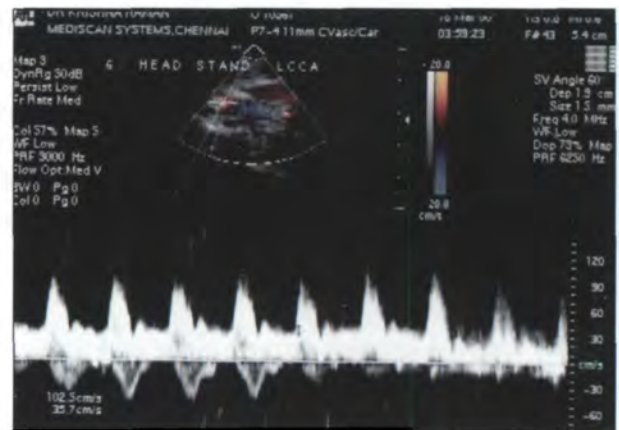
S32 LICA sitting erect



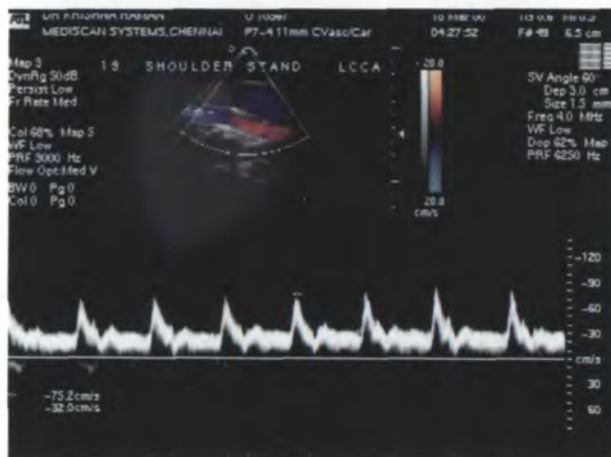
Imaging the carotid arteries in Headstand



S30 LCCA sitting erect



S33 LCCA in Headstand



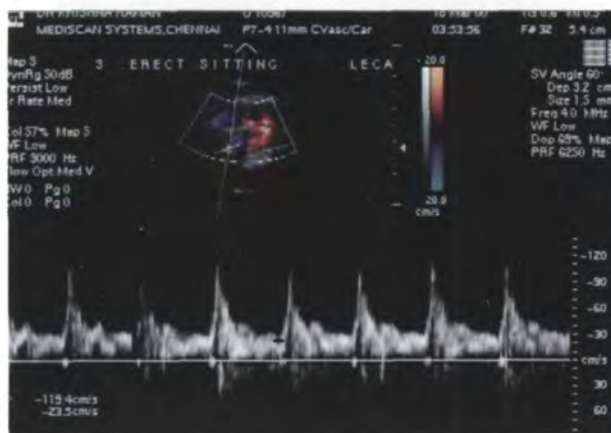
S34 LCCA in Shoulderstand

Comments:

In scan S33, there is no change in the flow velocity but there is a significant change in the shape of the spectral waveform that is evidenced by a deep notch in the early part of diastole.

In S34, there is a reduction in the bed impedance in the common carotid artery in the Shoulderstand. This is explained by the fact that the common carotid artery supplies both the internal and external carotids, and we have noticed the change in the impedance in the external carotid (S35) which is reflected in the common carotid artery.

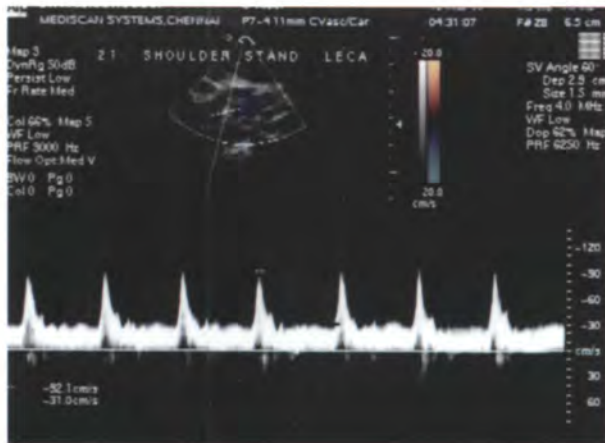
This is because of the chin lock. However, the chin lock is without tension and the sternum must lift to meet the chin. A habit of clenching the jaw must be avoided.



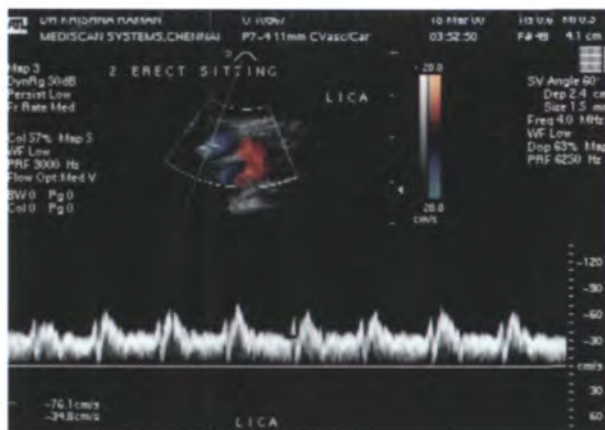
S31 LECA sitting erect



S35 LECA in Headstand



S36 LICA in Shoulderstand

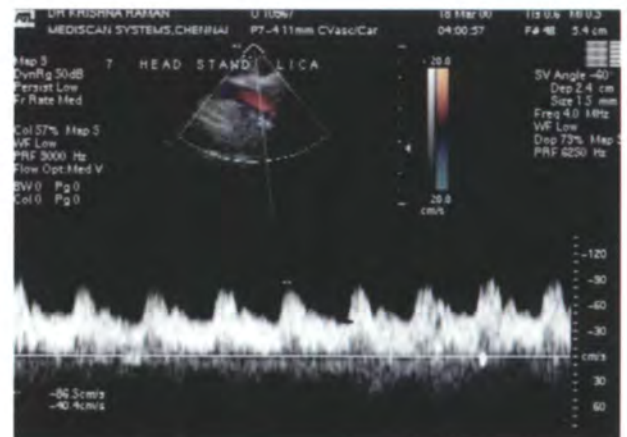


S32 LICA sitting erect

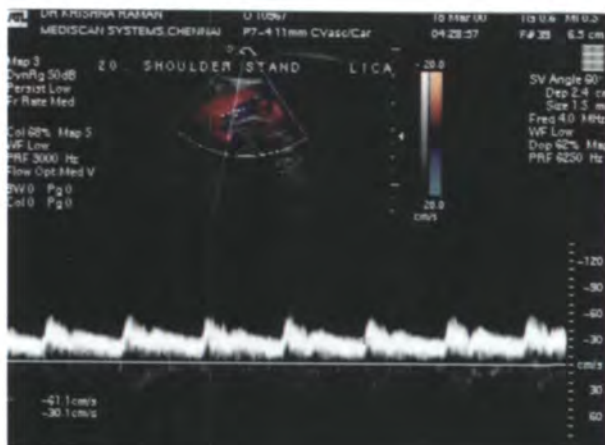
Comments:

In the scans S31 and S35, there is still a negligible change in the systolic velocity but there is a change in the vascular bed impedance as evidenced by the increased diastolic flow in Headstand versus the sitting erect posture.

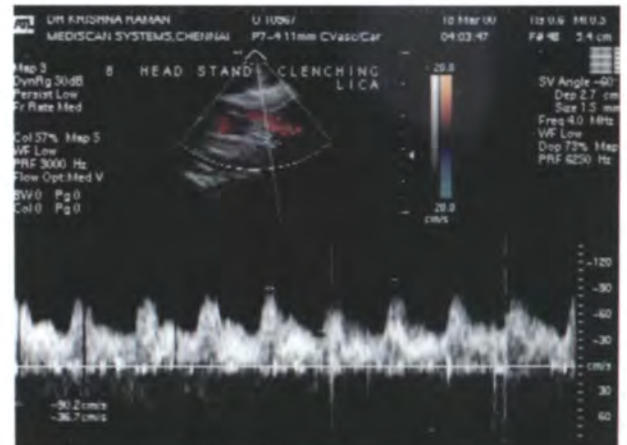
In S36, (in the LECA) a reduction in the bed impedance is noticed which further substantiates the fact that the vascular bed changes are noticed in the peripheral vessels supplying the muscles



S37 LICA in Headstand



S38 LICA in Shoulderstand



S39 LICA in Headstand with the jaw clenched

Comments:

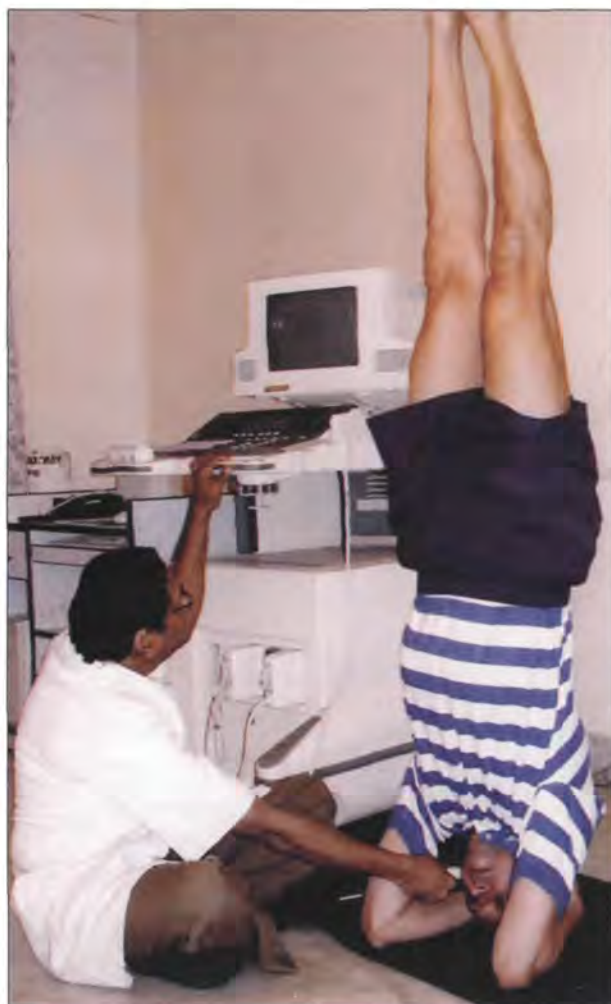
Comparing S32 and S37, there is not much of change in the velocity and bed impedance in the internal carotid artery. This again illustrates that the intracranial vascular bed does not alter in relation to these poses. In S38, there is no change in the velocity or the impedance signifying that intracranial vessel flow does not change with these Yoga postures. In S39, there is no change in the flow pattern in this pose in spite of the tension on the jaw and neck muscles.

This again helps us understand that the *intracranial flow is always stable in healthy individuals*. It is possible even for unhealthy individuals to auto-restore this regulatory capacity with yogic poses done under medical supervision. The deltoid muscles have to be raised for proper spacing in the neck area so that the carotid arteries are not pressurized. The pose is safe for all including hypertensives, though such patients will need prior preparation with other postures before they can be allowed to practice inverted poses.

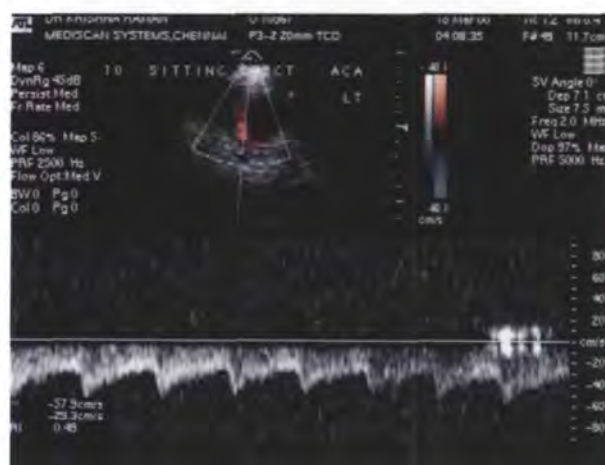
The cerebral arteries have a capacity to protect the brain from excessive pressure, which is known as auto-regulation. Physical stress like a moderate bicycle exercise causes flow changes in the middle cerebral artery with an increase in velocity initially¹¹.

Resistance exercises like leg presses tend to increase cerebrovascular resistance¹². Walking on a treadmill increases the velocity initially before it normalizes¹³. Yoga is unlike these systems as the initial rise is very negligible. There is hardly any change in the flow velocity in the cerebral arteries from the erect posture to the inverted pose.

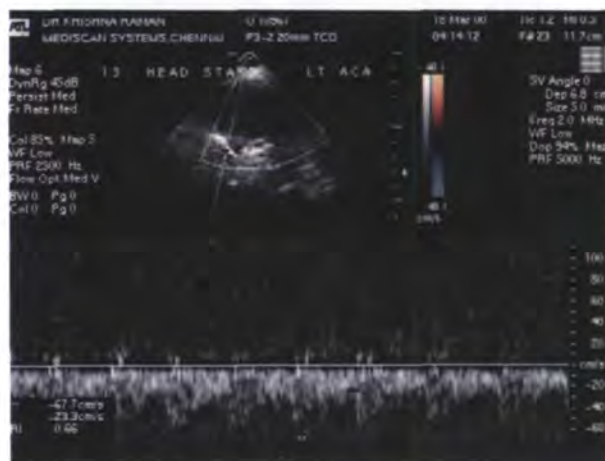
In the next few scans, we shall see the flow patterns in the left anterior cerebral artery, middle cerebral artery and posterior cerebral artery (ACA, MCA and PCA) in the erect posture compared to inverted poses.



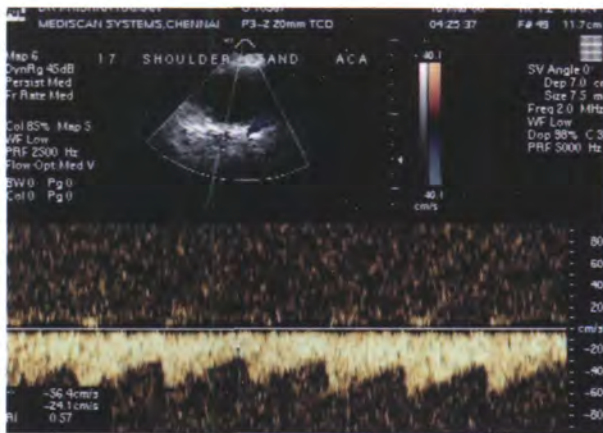
Trans-cranial imaging of the cerebral arteries in Headstand.



S40 Left ACA sitting erect



S41 Left ACA in Headstand



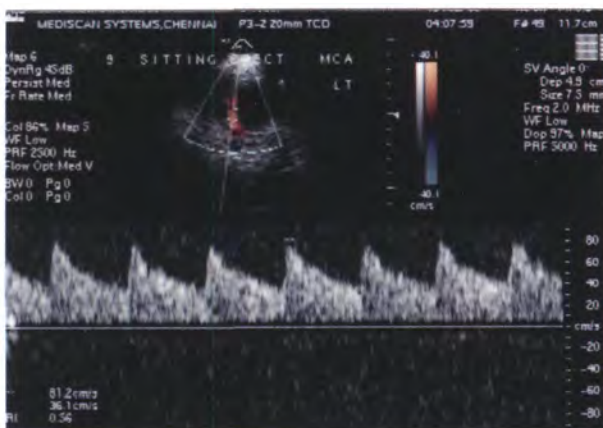
S42 Left ACA in Shoulderstand

Comments:

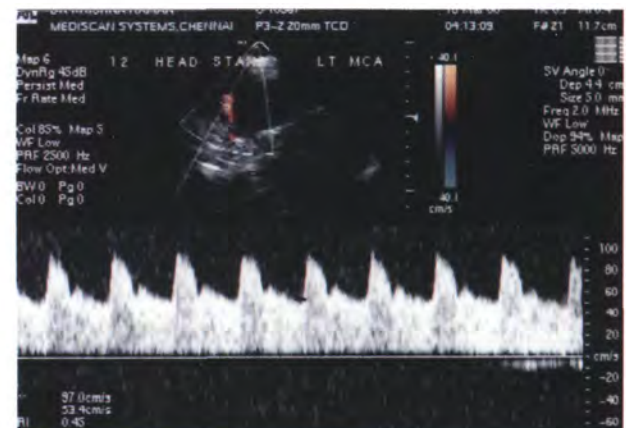
In S41, there is no significant change in the flow velocity or spectral pattern in Headstand in the anterior cerebral artery.

In S42, there is not much change in velocity of spectral shape in the ACA in Shoulderstand. The wave form appears brighter due to spectral broadening.

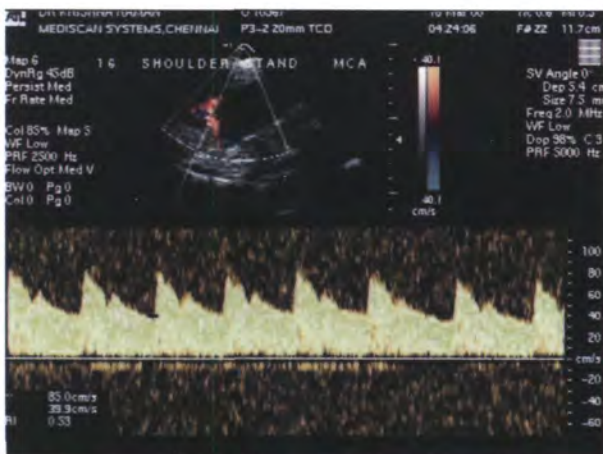
This is probably on account of the chin lock and the forehead being placed higher than the carotid arteries.



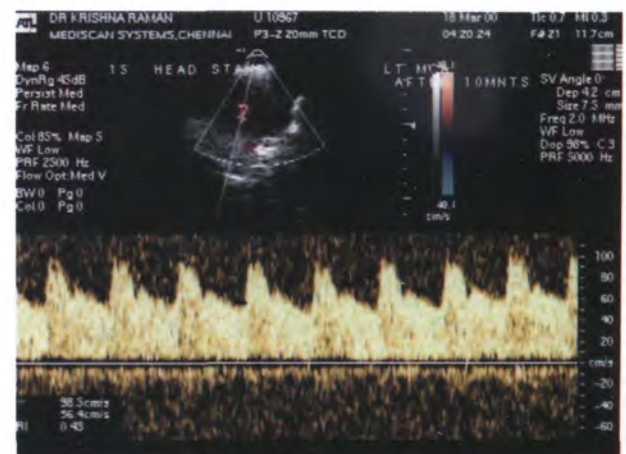
S43 Left MCA sitting erect



S44 Left MCA in Headstand



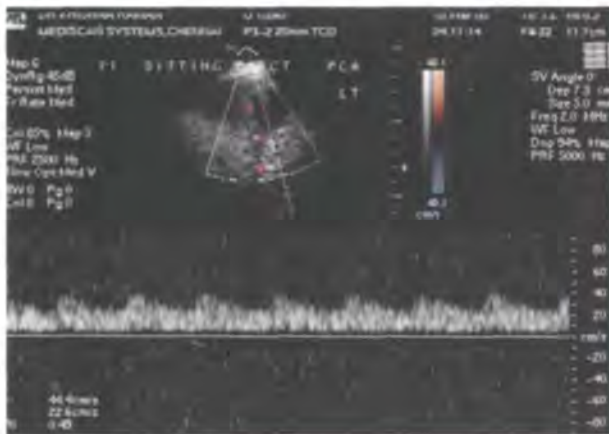
S45 Left MCA in Shoulderstand



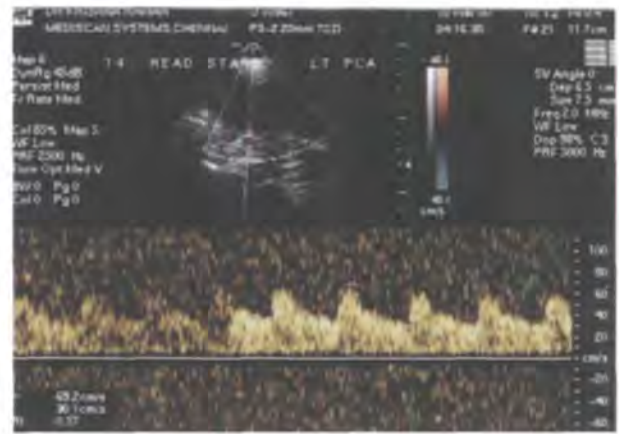
S46 Left MCA in Headstand during the 10th minute

Comments:

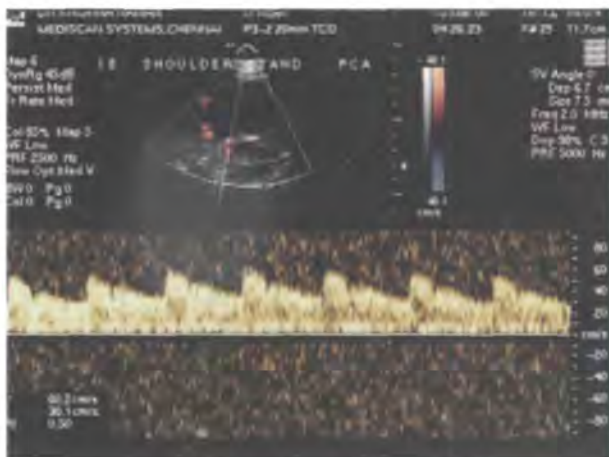
In Headstand (S44), there is no significant change in the flow velocity but there is a change in the spectral pattern. The change in the flow spectrum appears to be maintained even after 10 minutes confirming auto-regulation of blood flow even after a period of time (S46). In S45, there is no significant change in the velocity of flow in the MCA but there is a change in the waveform shape as evidenced by the early diastolic notch. The waveform appears brighter due to spectral broadening.



S47 Left PCA sitting erect



S48 Left PCA in Headstand



S49 Left PCA in Shoulderstand

Comments:

In S48, there is no appreciable change in either velocity or flow pattern in the PCA.

In S49, there is a marginal increase in flow velocity, which may possibly be due to the supine position of the head in this pose.

In general, physicians and Yoga teachers are wary of Headstand as they feel that the velocity of blood flow in the brain increases in the upside position. This is quite a myth as we can see. If such an increase occurs, the technique is at fault. If an elderly person desires to practice Headstand, one must prepare the body with Asanas like Dog pose, Uttanasana with the head resting on a support and seated forward bending Asanas. Then over a period, Headstand can be taught. The same logic applies to hypertensives. The scans above (S44 and S48) confirm that Headstand is not deleterious to the brain. Hypertensives can safely practice this (in a graded manner) on the ceiling ropes.

The scan (S46) shows that even after ten minutes there is no change in flow pattern in Headstand in the MCA. This highlights the importance of correct practice. Schools of Yoga who are not clear about maintaining proper timing in inverted poses should realize that moderation is a good principle. To attempt Headstand for three hours (as is advised by a school of thought) is very deleterious! The person will suffer systemic hypertension and nervous exhaustion. Excessive practice of Headstand may not be necessary.

In Shoulderstand, the blood flow appears to be preferentially directed to the posterior part of the brain. ***To sum up, in the intracranial vessels, there is no appreciable change in either velocity or spectral pattern (except in Headstand).*** Inverted postures are anti-aging to the brain as a healthy exercise is provided to the cerebral arteries in the poses. Patients with medical ailments need special guidance to achieve the poses. There is no contraindication in an absolute sense.

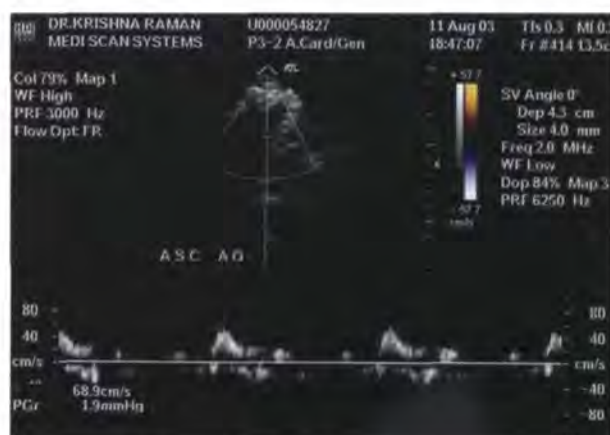
We next observe the flow changes in a major artery in the body-the aorta in different Asanas. It has been shown that in physically active women, central arteries like the aorta are less stiff¹⁴. This is important, as blood flow would be compromised if this artery became less compliant. Research has shown that ergometer exercise constricts the aorta helping push blood to the extremities¹⁵. It has also been demonstrated that endurance athletes show a morphological adaptation of the major abdominal arteries in their body with chronic training¹⁶. Such changes do not occur in habitual practitioners.

The flow pattern in the ascending aorta during intense aerobic exercise has shown to be one of increased flow velocity¹⁷. With aging, the flow parameters dwindle at rest or when subject to exercise testing¹⁸. Hence, the need to exercise is stressed. Yoga is gentle on the aorta and a massaging action is predominant owing to the varied geometry of the poses.

Below I have discussed the circulatory dynamics in back bends. Anatomically, the aorta comprises an ascending, arch and a descending part. The names denote the part of the aorta under imagery. The scans S50 and S51 denote the flow in the ascending aorta in the resting stage and during the Asana. The aorta is a major blood vessel emanating from the heart supplying the body and the heart.



Urdhva Mukha Svanasana



S50 Ascending aorta resting flow



S51 Ascending aorta in Urdhva Mukha Svanasana

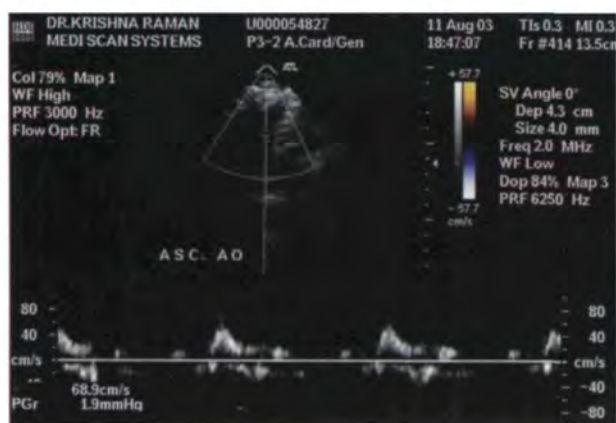
Comments

There is a marginal increase in PSV (S51) with alteration in the shape of the waveform pattern denoting a good spectral window indicative of laminar flow.

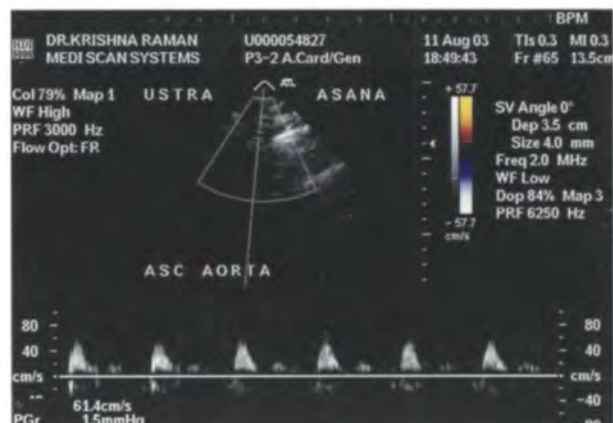
This could reiterate the need for back bend practice for cardiac patients and as a preventive for cardiac disorders. Yoga poses may help achieve a laminar flow (with habitual practice), which is lost in diseased states. However, the benefits have to be worked out.

Back bends are unique to Yoga-the benefit being derived from sustaining the posture (unlike gymnastics). The spinal alignment in these poses is also different from those of gymnastic exercises.

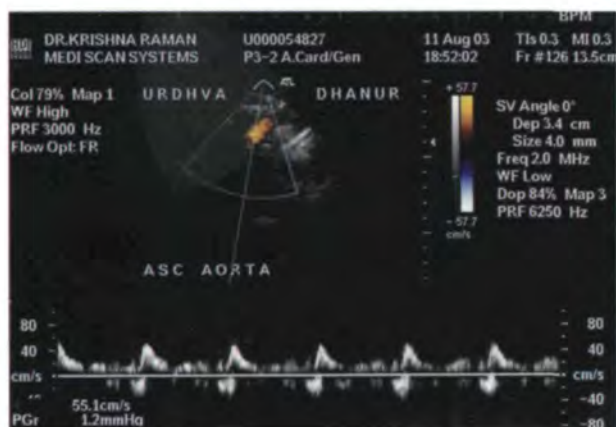
In Ustrasana the backward movement of the dorsal spine changes the mechanics; the aorta is compressed less.



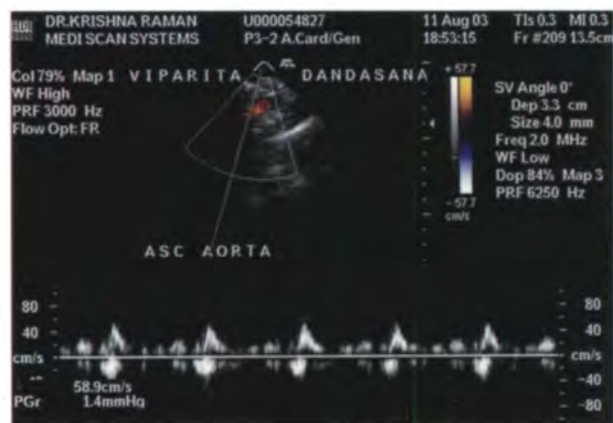
S50 Ascending aorta resting flow



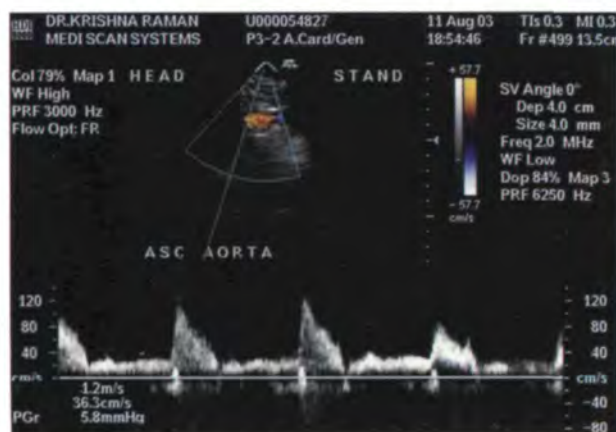
S52 Ascending aorta in Ustrasana



S53 Ascending aorta in Urdhva Dhanurasana



S54 Ascending aorta in Viparita Dandasana



S55 Ascending aorta in Headstand

Comments:

In S52, there is no change in PSV or spectral pattern but there is a change in the heart rate and reduced systolic time. Similar to Urdhva Mukha Svanasana, there is a marginal increase in PSV with alteration in the shape of the waveform pattern denoting a good spectral window indicative of laminar flow in S53. In S54, except for an increase in heart rate no other change is seen in the flow pattern. This might indicate that Urdhva Dhanurasana may be more useful in altering aortic flow patterns than Viparita Dandasana. In Headstand, there is almost a 100% increase in PSV and increase in the diastolic velocity indicating increased flow in the ascending aorta (S55).



Ustrasana



Headstand



Urdhva Dhanurasana



Viparita Dandasana

Back bends are the “Aerobics” of Yoga. Though the heart rate increases, the strain is negligible. In all the above scans denoting the effects of the two backward bending asanas, the effect is secured only if the sternum is thrust open *without hyperextension of the lumbar spine*. If the lumbar spine is stretched further, the dorsal spine will collapse and aortic flow will be hampered. In Viparita Dandasana, a Headstand effect is achieved as the body is inverted. An untainted back bend effect is hence nullified. ***All backward bending Asanas may probably help maintain the shear forces of blood flow*** in the aorta and prevent loss of arterial compliance as we age. The cardiac muscle is also provided with an anti-aging effect. Headstand may be more useful than back bends to improve blood flow in the aorta. However, from another viewpoint, back bends may be beneficial as they provide a shear effect that Headstand cannot. Hence, it is useful to practice both groups of Asanas for health.

Yogic bio-dynamics is a holistic science and this can be easily ratified by the use of ultrasound. The practitioner should be aware of the implications of correct alignment. More research will educate us of the deeper working of the yogic system.

Divine guidelines from Bhagawan Sri Sathya Sai Baba

- ❁ Become aware that you are temple of God, that your limbs are the holy vessels that are consecrated for service therein, that your deeds are the fruits, your thoughts the flowers, your words the music, with which worship is consummated every moment.



- ❁ Yoga sastras declare that certain asanas have to be done in order to remove the widening circles of mental agitations and purify the mind; also to steady faith and establish jnana and arouse kundalini shakthi latent in man. Yoga is chitta vritti nirodaha, the cutting of all agitations on the lake of one's inner consciousness. Nothing should cause a wave of emotion or passion on the calm surface or in the quite depths of one's awareness. This state of equanimity is the hallmark of jnana. Sadhana is the drug and vichara or enquiry is the regimen that will cure man of all waywardness and agitation. In this ashanthi (peacelessness) that is confounding the world, you must seek prashanthi (the higher spiritual peace); in that prashanthi you can visualise prakanthi, the all embracing param jyothi, is experienced; in that param jyothi the universal eternal absolute, the Paramatma is experienced.



- ❁ Yoga is defined by Patanjali has the nirodaha (control) of the vrttis (agitations) of the chitta (consciousness). If the mind is stilled and free from the waves produced by the wind of desire, then he becomes a yogi; and the lord is the highest yogi for he is the ocean that is unaffected by the waves that agitate the surface. Yoga of this type is the best means of attaining the Yogeshwara; not breath control, but sense control is the best prescription.



- ❁ People can live longer and be more healthy if only they eat the minimum. Regular prayers twice a day will give strength and courage which can withstand illness. When someone offers you a glass of water you say immediately, "Thank you". How much more gratitude should you evince to God who watches you and wards off all the harm threatening to overwhelm you. Activity must be dedicated to God, the highest God. Then it will provide health of body and mind.



- ❁ The person who has achieved Yoga is superior to the person who is the master of ritual karma; so strive, O, Arjuna to become a yogi, to attain that high and holy status. But this is not all you have to do. There is a status higher than even this. Whoever fixes his entire consciousness in Me, whoever earnestly meditates on Me, to the exclusion of everything else, he is superior to all. He is a Maha Yogi.



A quick reference on the Doppler flow analysis of important Asanas is enclosed below:

Asana	Right popliteal artery (cm/sec)	Left popliteal artery (cm/sec)	Comments
Tadasana	30.3	25.3	Standing erect resting
Tadasana on footrest	43.4	46.4	Asana done properly
Utthita Trikonasana 1		44.6	Done on left side, front leg
Utthita Trikonasana 2		57.1	Done on left side, front leg
Utthita Trikonasana 1	50.6		Done one left side, value rear right leg
Utthita Trikonasana 2	91.5		Done one left side, value rear right leg
Parivrtta Trikonasana 1		48.3	Done on left side front leg
Parivrtta Trikonasana 2		73.9	Done on left side front leg
Parivrtta Trikonasana 1	92.7		Done on left side, value on rear right leg
Parivrtta Trikonasana 2	82.7		Done on left side, value on rear right leg
Utthita Parsvakonasana 1	52.0		Done on right side, front leg
Utthita Parsvakonasana 2	70.3		Done on right side, front leg
Utthita Parsvakonasana 1		57.1	Done on right side, value rear left leg
Utthita Parsvakonasana 2		59.7	Done on right side, value rear left leg
Parivrtta Parsvakonasana 1		54.5	Done on left side front leg
Parivrtta Parsvakonasana 2		89.0	Done on left side front leg
Parivrtta Parsvakonasana 1	93.4		Done on left side, value rear right leg
Parivrtta Parsvakonasana 2	65.2		Done on left side, value rear right leg
Virabhadrasana I (1)		26.8	Done on left side front leg
Virabhadrasana I (2)		45.1	Done on left side front leg
Virabhadrasana I (1)	51.6		Done on left side, value rear right leg
Virabhadrasana I (2)	61.7		Done on left side, value rear right leg

Asana	Right popliteal artery (cm/sec)	Left popliteal artery (cm/sec)	Comments
Tadasana	30.3	25.3	Standing erect resting
Virabhadrasana III (1)		75.2	Done on left side front leg
Virabhadrasana III (2)		63.2	Done on left side front leg
Virabhadrasana III (1)	52.0		Done on left side, value rear right leg
Virabhadrasana III (2)	79.2		Done on left side, value rear right leg
Ardha Chandrasana 1		56.1	Done on left side front leg
Ardha Chandrasana 2		64.2	Done on left side front leg
Ardha Chandrasana 1	62.7		Done on left side, value rear right leg
Ardha Chandrasana 2	59.7		Done on left side, value rear right leg
Prasasrita Padottanasana 1		100.3	Incorrect Asana
Prasasrita Padottanasana 2		91.1	Correct Asana
Parsvottanasana 1		18.5	Done on left side front leg
Parsvottanasana 2		52.0	Done on left side front leg
Parsvottanasana 1	59.7		Done on left side, value rear right leg
Parsvottanasana 2	60.0		Done on left side, value rear right leg
Dog pose 1	60.2	86.2	Right leg
Dog pose 2	33.4	40.9	Right leg
Headstand 1	120.0	78.3	Asana done incorrectly
Headstand 2	146.8	101.1	Asana done correctly
Shoulderstand 1	137.9	89.4	Asana done incorrectly
Shoulderstand 2	166.7	111.5	Asana done correctly
Halasana 1	55.6	44.6	Asana done incorrectly
Halasana 2	72.2	68.2	Asana done correctly

Asana	Right popliteal artery (cm/sec)	Left popliteal artery (cm/sec)	Comments
Dandasana	40.0	34.0	Sitting erect resting
Janu Sirsasana 1		61.4	Done on left side front leg
Janu Sirsasana 2		72.7	Done on left side front leg
Paschimottanasana 1	59.2	44.6	Asana done incorrectly
Paschimottanasana 2	65.8	61.7	Asana done correctly

Asana	Right central retinal artery	Left central retinal artery	Comments
Supine	9.7	11.4	Savasana
Headstand	16.5	12.8	Asana done correctly
Shoulderstand	10.7	15.0	Asana done correctly
Half Halasana	11.9	10.9	Asana done correctly

Asana	Right ophthalmic artery	Left ophthalmic artery	Comments
Sitting erect	27.1	27.4	Resting posture
Headstand	24.8	19.2	Asana done correctly
Shoulderstand	24.8	19.8	Asana done correctly
Halasana	24.4	18.1	Asana done correctly
Half Halasana	23.7	21.8	Asana done correctly

Asana	Right ophthalmic vein	Left ophthalmic vein	Comments
Sitting erect	10.2	10.5	Resting posture
Headstand	6.8	4.1	Asana done correctly
Shoulderstand	3.3	4.1	Asana done correctly
Half Halasana	2.9	2.9	Asana done correctly

Asana	Left common carotid artery (LCCA)	Left external carotid artery (LECA)	Left internal carotid artery (LICA)	Comments
Sitting erect	104.3	119.4	76.1	Resting posture
Headstand	102.5	95.9	86.5	Asana done correctly
Headstand			90.2	Jaw clenched in Headstand
Shoulderstand	75.2	92.1	61.1	Asana done correctly

Asana	Anterior Cerebral artery (ACA)	Middle Cerebral artery (MCA)	Posterior Cerebral artery (PCA)	Comments
<i>Sitting erect</i>	57.9	81.2	44.4	<i>Left side resting</i>
Headstand	67.7	97.0	69.2	Asana done correctly
Headstand		98.5		Asana done correctly-reading during the 10th minute
Shoulderstand	56.4	85.0	60.2	Asana done correctly

Asana	Ascending aorta (cm/sec)	Comments
<i>Sitting erect resting</i>	68.9	<i>Resting</i>
Urdhva Mukha Svanasana	85.2	Asana done correctly
Ustrasana	61.4	Asana done correctly
Urdhva Dhanurasana	55.1	Asana done correctly
Viparita Dandasana	58.9	Asana done correctly
Headstand	120	Asana done correctly

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Index

A

Abdomen 58, 60, 83, 109, 114, 133
 Abhyasa 7, 26
 Acetabulum 80, 92
 Achilles' tendinitis 96
 Acne 116
 Adductors 72
 Adrenal glands 23
 Adrenaline 21
 Aerobic exercise 142
 Aerobics 21, 42, 75, 100, 102, 173
 Ahimsa 3, 136
 Alcohol 51, 63, 87
 Allergy 30, 61
 Alopecia 116
 Altitude 23, 53
 Alveoli 22, 56, 58
 Amenorrhoea 112
 Anaemia 56, 105
 Aneurysms 84
 Angina 103, 116, 133, 134
 Anorexia Nervosa 107
 Antioxidant 21, 31, 36, 55
 Anuloma 57
 Apnoea 135
 Archery 100
 Ardha Chandrasana 70, 80
 Ardha Navasana 83
 Arogya 47
 Arthritis 20, 29, 30, 80, 83, 87, 89, 90, 91, 92, 94, 95, 96, 137
 Ashtanga 9, 55
 Ashwini Mudra 64
 Asians 92
 Aspirin 48, 102
 Asthma 10, 26, 31, 106
 Athlete 14, 22, 47, 100, 103, 114, 118, 131, 134
 Atma 36, 52
 Atrophy 21, 95, 122
 Aurobindo 3, 50, 134
 Autonomous system 23
 Ayurveda 28, 29, 30, 41, 48

B

Bacteria 28, 59, 126
 Bakasana 50, 113
 Baldness 74, 116
 Ballistic stretching 147
 Bandha 42, 57, 60, 64, 65, 66, 73, 77, 89, 96, 102, 106, 107, 108, 110, 114, 120, 121, 122, 132

Basketball 99
 Behaviour 5, 6, 56
 Beta-endorphin 120
 Bhagawad Gita 7
 Bharadvajasana 73, 74, 80, 81, 86, 88, 90, 97
 Bhekasana 94
 Bhogi 26
 Biomechanics 39, 51
 Blount's disease 93
 BMI 52
 Bowleg 80, 93, 96
 Brahmacharya 3
 Breathlessness 22, 45, 56, 60, 61, 63, 133
 Bronchitis 106
 Buddha 3
 Bursitis 91, 92

C

Calcium 31, 87, 92
 Cardiac output 141
 Cataract 125
 Caucasian 92
 Cauda Equina 90, 99
 Cerebral 52, 70, 79, 98, 122, 123
 Cerebral palsy 98, 123
 Chandra Bhedana 41, 59
 Chanting 10, 48, 90, 135
 Chemotherapy 30, 129
 Chess 100
 Chiropractic 86
 Cholesterol 26, 45, 101, 102
 Chondromalacia Patellae 94
 Cirrhosis 108
 Climate 23, 47, 48, 61, 62, 106, 118, 126
 Coccyx 76
 Colitis 110
 Colon cancer 20, 34
 Computer 87, 125
 Concentration 11, 42, 47, 119, 120
 Conception 47, 51, 79, 85, 112, 114
 Condyles 67
 Consciousness 5, 6, 9, 46, 59, 128
 Constipation 7, 110, 111
 COPD 20, 65, 106, 131
 Counter pose 51, 54, 76, 77
 Cramps 43, 48, 86, 92, 112, 113, 131
 Creatinine 111
 Cricket 100
 Cruciate 42, 93, 94
 Cycling 86, 93, 94
 Cystocele 128

D

Dead spaces 58
 Dehydration 43, 52, 56, 100

Dementia 122
Depression 28, 121, 122
Dhanurasana 51, 82, 83, 89, 90, 100, 102
Dharma 14
Diabetes 8, 10, 63, 103, 105, 111, 119, 132, 133
Diastolic 167, 172
Diastolic pressure 141
Digestion 56, 62, 73, 107
Disc 42, 85, 88, 89, 90, 91, 99, 127, 134
Discus 29, 31, 56, 100, 130
Divine Grace 3, 46
DOMS 41
Doppler 52, 67, 72, 105
Dynamism 9, 43, 49, 72
Dysfunctional uterine bleeding 113

E

Eardrum 39, 76
Ego 4, 12, 26, 44, 54, 112, 129
Ehlers-Danlos syndrome 84
Eka Pada Sarvangasana 77
Elixir 34
Emphysema 106, 131
Endometriosis 113
Endorphin 120
Episiotomy 115
Ergonomics 99
Euthanasia 33
Exhalation 49, 56, 57, 58, 59, 60, 61, 63, 64, 66, 105, 119, 121

F

Failed Back Syndrome 90
Fatigue 7, 23, 39, 43, 48, 55, 56, 57, 92, 95, 100, 101, 103, 120, 128, 131, 136
Femoral artery 156
Fibromyalgia 86, 137
Fibrosis 99, 108, 109
Fissure 110, 111, 117
Fitness 24, 35, 45, 52, 59, 60, 65, 93, 103, 123, 131
Flat feet 96
Football 10, 99
Fundamentalism 47

G

Gall Bladder 50, 109, 110, 143, 144
Gall-stone 20, 109
Ganglion 89
Genu valgum 93
Genu varum 84, 93
Geriatric 13, 14, 24, 52, 79, 92, 128
Ghee 45
Giddiness 26, 66, 70, 123
Glaucoma 42, 52, 65, 103, 104, 124

Glucosamine sulphate 94
Glucose 20, 35, 109, 110, 118, 119
Gluteus 67, 70, 77, 82, 89
Grace 3, 7, 9, 10, 12, 43, 46, 47, 127, 134
Greenhouse 53
Groin 40, 41, 45, 53, 67, 69, 72, 74, 76, 79, 80, 81, 92
Gymnasts 83
Gyroscope 39

H

Haemangioma 128
Haemorrhage 104
Haemorrhoids 110, 111
Halitosis 60, 61
Hallux Valgus 97
Hamstring 46, 54, 67, 68, 69, 71, 72, 81, 86, 90, 97, 131, 136
Hanumanasana 80, 81
Hatha Vidya 45, 46
Hatha Yoga 3, 6, 9, 21, 24, 36, 39, 42, 44, 52, 54, 63
Hazard 39, 51, 104, 133
HDL 20
Headache 26, 63, 65, 66, 71, 73, 78, 79, 82, 136
Healer 134, 135
Health insurance 32, 33
Heart Failure 35, 137
Heart failure 20, 35, 103
Heart rate 22, 103
Heat 27, 42, 47, 48, 100, 101
Hemodynamic 142
Hepatitis 108, 109, 131, 137
Hepatitis C 108, 137
Hernia 83, 85, 108, 115, 116
Hiatus Hernia 108
Hiking 101
HIV 21
Hockey 99
Homeopathy 28, 29, 30, 110, 111, 133
HRT 87
Humility 13
Hypermetropia 124
Hypertension 105, 106, 111
Hypertensives 27, 36, 61, 104
Hypochondriac 19, 20
Hypoglycemia 110, 119

I

IHD 20
Indigestion 56
Infarction 102
Infertility 114
Inguinal ligament 160
Inhalation 49, 56, 57, 58, 59, 60, 61, 62, 63, 64, 119

Injuries 40, 50, 67, 75, 80, 83, 87, 99, 103
Insomnia 8, 63, 121, 133, 134
Insulin 10, 20, 110, 133
Intercourse 115, 116
Intra-cranial 58
Intra-uterine device 114
Intracranial 168, 170
Iron 30, 105
Irritable bowel syndrome 110

J

Jacuzzi 49
Javelin 50, 100
Jet lag 63, 123
Jogging 21, 22, 42, 50, 88, 94, 100, 132
Juvenile 56, 98

K

Kali Yuga 10, 129
Kapalabhati 62
Kapotāsana 40, 53, 102
Karma 12
Karnapidasana 77
Keloid 117
Kipling 12
Kirtan 10
Knees 22, 67, 68, 80, 93, 94, 95, 96
Kosha 41, 42
Krishna 7
Kumbhaka 57, 63, 64
Kundalini 65, 66
Kyphosis 87, 98

L

Lactate 118, 119
Lactation 115
Laminar 153, 171, 172
Leucorrhoea 113
Ligaments 23, 42, 86, 91, 93, 94, 100, 120
Linoleic acid 31
Lipids 8, 20, 21, 35
Liposuction 85
Lordosis 81, 82, 83, 84, 87, 91, 98
Lumbar 46, 53, 68, 71, 72, 73, 77, 81, 82, 83, 84, 85, 87, 91, 98, 99
Luxation 92

M

Maha Mudra 65, 66, 72, 73, 131
Malleolus 81, 96
Mantra 10, 57
Marathon 51, 103
Marfan's syndrome 84
Matsyasana 76, 77

Meditation 3, 5, 6, 11, 12, 25, 27, 42, 47, 48, 57, 120, 135
Meniscus 93
Menopause 31, 35, 115
Menorrhagia 76, 112
Menstruation 76, 112, 113, 115
Migraine 65, 82
Milk abscess 115
Miscarriage 20
Mood 120, 122
Mountain 46, 101
Mudras 5
Mula Bandha 57, 60, 64, 65
Mulabandhasana 96
Multiple Sclerosis 123
Myopia 7, 124

N

Nadi Shodhana 3, 57, 59, 61, 64, 100, 101, 123, 126
Nadis 34, 62, 63
Nauli 64, 65
Nausea 47, 62, 79
Navasana 83, 89, 91
Neutral poses 54, 136
Night blindness 125
NSAIDS 53
Numbness 54

O

Obturator 72
Oesophagitis 107
Oil 26, 31, 48, 49, 71, 111, 116, 117, 121
Oil bath 48, 49, 116, 117
Orthostatic 22
Osteoarthritis 94, 95, 96
Osteoporosis 87, 92, 137
Otitis Media 104
Overtraining syndrome 43
Ovulation 112
Oxygen 58

P

Padmasana 74, 77, 80, 81, 92, 93, 94, 95, 96, 127, 128
Palpitation 26, 32, 66, 133
Panacea 102, 137
Paraplegia 99
Parasurama 6
Parighasana 71
Parivrtta Ardha Chandrasana 80
Parivrtta Janu Sirsasana 71, 108, 109, 144, 145
Parkinson's disease 21, 36, 122
Parsva Pindasana 77

Parsva Sarvangasana 77
Parsva Urdhva Padmasana 77
Parsvottanasana 69, 96
Patanjali 4, 5, 6, 7, 9, 10, 11, 19, 33, 41, 46,
47, 59, 66, 76, 136
Peri-arthritis 87, 89
Perineum 65, 83
Peripheral resistance 141
Petechiae 75
Pharyngitis 127
Pincha Mayurasana 82
Pindasana 77
Piriformis 72
Pisiform 82
Polio 86, 98
Popliteal artery 50, 51, 77
Prana 65, 66
Pranic healing 134
Prasad 3, 4
Pratyahara 5, 19, 27, 42, 47, 107
Pregnancy 31, 35, 112, 114, 115, 131
Prema 14
Primrose Oil 31
Pro-opiomelanocortin 120
Procidentia 128
Proprioceptive stretching 147
Prostate 111
Prosthesis 95
Puberty 31, 54, 116
Pyrexia 53

R

Radiation 116, 128
Rajas 7, 19
Rajasic 7
Rama 10
Ramakrishna 3
Ramana Maharishi 4, 6, 134
Rectocele 128
Renunciation 12
Ribs 58, 69
Rogi 26
RSI 87

S

Saburi 3
Sacro-iliac 67, 71, 72, 91
Sacro-ilitis 91
Sadhana 11, 33, 41, 76, 122, 134
Sai Baba of Shirdi 3
Salabhasana 76, 77, 89, 90, 131
Saliva 60
Salt 7
Sama 9, 19, 20, 46, 47, 57, 61
Sathya 14

Satsang 51
Sattva 19
Sattvic 7, 8
Sauna 49
Savasana 27, 48, 49, 53, 57, 60, 64, 116, 118,
119, 120
Scar 20, 54, 90, 91, 99, 102, 108, 115, 117, 127
Scoliosis 73, 84, 98
Scuba 101
Semen 29, 32, 65, 132
Serotonin 28
Sesame 48, 49
Shankaracharya 134
Shanti 14
Shooting 100
Shot put 100
Shower 9, 48
Sinuses 59, 126
Sinusitis 65, 126
Sitali 41, 57, 59, 100, 101, 107, 116, 117, 124
Snoring 60, 61
Sperm 114
Sphincter 64, 65
Spirulina 31
Spondylitis 88, 123
Spondylolisthesis 89, 91
Spondylosis 79, 88, 133
Sprinter 60, 103
Spur 97
Sraddha 3
Sraddha and Saburi 3
Static stretching 147
Stroke 8, 21, 24, 36, 74, 101, 105
Stroke volume 141
Supta Padangusthasana 72, 81, 91, 101, 104,
105, 115, 123
Supta Virasana 24, 76, 81, 84, 89, 91, 100,
101, 104, 106, 107, 108, 109, 112, 113, 117
Surrender 3, 4, 7, 9, 10, 12, 13, 25, 34, 46,
129, 137
Surya Bhedana 41, 59
Sutra 5, 6, 19, 25, 33
Swimming 7, 20, 21, 42, 93, 115, 117, 137
Systolic 167
Systolic pressure 141

T

Tai Chi 92, 105
Tamas 7, 19
Tamasic 7
Tapas 3
Teitz's syndrome 89
Tennis 47, 100
Thrombosis 104, 105, 137
Thyroid 23, 118, 121

Tinnitus 126
 Tivram 10
 Tongue 53, 71, 75, 137
 Transcendental 11
 Trapezius 51, 67, 71, 74, 75, 76, 82
 Trataka 122, 124
 Treadmill 21, 93, 100, 103, 168
 Trigeminal Neuralgia 123
 Trikarana Shuddhi 11
 Triphasic 142
 Trochanter 69, 81, 91

U

Uddiyana 57, 60, 64, 65, 73
 Uddiyana Bandha 57, 64, 73
 Ujjayi 57, 61, 65, 76, 121
 Ulcer 105, 108, 110
 Ulna 82
 Urdhva Hastasana 100
 Urdhva Mukha Svanasana 40, 89, 92
 Urdhva Prasarita Padasana 83, 89, 91, 115
 Urea 111
 Uttana Mayurasana 77
 Uttana Padasana 83
 Uttanasana 45, 48, 50, 69, 73, 78, 81, 96,
 104, 119, 120, 122, 125, 135

V

Vaginitis 115, 116
 Vagus 11, 63, 70, 71, 106
 Vagus nerve 11
 Vairagya 7, 26
 Valgus 84, 93, 96, 97
 Varicose 104, 105
 Vascular 21, 22, 36, 52, 58, 59, 63, 77, 101, 132
 Vasistha 5, 10, 25, 28, 33, 34, 36, 132
 Vasodilators 102
 Vasomotor 7, 20, 126
 Vegetarian 8, 134
 Vertebral artery 75
 Vertigo 79, 123
 Vibrancy 46, 47, 49
 Viloma 57, 59, 106
 Violence 3, 14, 56
 Viparita Chakrasana 40, 50, 82, 102
 Viparita Dandasana 40, 106, 107, 108, 109, 121
 Viparita Karani 24, 52, 79, 100, 101, 105, 107,
 109, 110, 114, 115, 120, 121, 122, 129, 132
 Visama 57, 61
 Viswamitra 6
 Vitamin 31, 86, 105, 125
 Vivekananda 3, 10, 46
 Vocalist 61
 Voltage stabilizer 24
 Volumetric 58

Vrtti 9, 46, 57, 61

W

Weight training 20, 35, 86, 94, 95, 100, 116
 Whiplash 88

Y

Yoga Vasistha 10
 Yogic attitudes 9

A quick reference to “Issues on Yoga and Medicine”

General Queries on Asanas	Q1 - Q66	Page 39
Issues on Pranayama	Q67 - Q123	Page 56
On Breathing in Asanas	Q124 - Q126	Page 66
On Standing poses	Q127 - Q152	Page 66
On Forward bending poses	Q153 - Q167	Page 71
On Twisting poses	Q168 - Q175	Page 73
On Inverted poses	Q176 - Q201	Page 74
On Seated poses	Q202 - Q212	Page 79
On Supine poses	Q213 - Q216	Page 81
On Balancing poses	Q221 - Q230	Page 82
On Back bending poses	Q221 - Q230	Page 82
Issues on the Musculo-skeletal system	Q231 - Q243	Page 84
Issues on Orthopedics	Q244 - Q293	Page 86
Issues on Spinal problems	Q294 - Q306	Page 97
Issues on Sporting events	Q307 - Q317	Page 99
Issues on the Cardio-vascular system	Q318 - Q336	Page 101
Issues on Respiratory Medicine	Q337 - Q339	Page 106
Issues on the GI tract	Q340 - Q358	Page 107
Issues on the Renal system	Q359 - Q360	Page 111
Issues on Urology	Q361	Page 111
Issues on the Reproductive system	Q362 - Q387	Page 112
Issues on Skin ailments	Q388 - Q396	Page 116
Issues on Endocrinology	Q397 - Q402	Page 117
Issues on Neurology	Q403 - Q424	Page 119
Issues on Ophthalmology	Q425 - Q437	Page 124
Issues on ENT	Q438 - Q444	Page 125
Issues on General Surgery	Q445 - Q451	Page 127
Issues on Immunology	Q452 - Q454	Page 128
Issues on Oncology	Q455 - Q457	Page 128
Miscellaneous Issues	Q458 - Q487	Page 129

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