CHAPTER I

INTRODUCTION

“Each soul is potentially divine. The goal is to manifest this divinity within by controlling nature, external and internal. Do this either by work, or worship or psychic control, or philosophy - by one or more or all of these and be free. This is the whole of religion”

- Swami Vivekananda

Yoga is usually defined as union: union between the limited self (jiva) and the cosmic self (atman). Without trying to confuse things any further, we would like to point out that there is an anomaly in this definition. For there to be an aim or goal of union there must first be a state of separation. And in fact this separation does not exist. At this very moment you are united with the cosmic consciousness. Even this statement is not true, for you actually are the cosmic consciousness. So the aim of yoga is not really to unite you with greater self, to make you are already united. It is to make you realize your identity with the greater self, to make you know and tune in with your existing inner nature. (Swami Satyananda Saraswati, 1981)

1.1 YOGA

Yoga is a way of life. It is predominantly concerned with maintaining a state of equanimity at all costs. All yoga schools of thought emphasize the importance of the mind remaining calm, because as the saying goes, only when the water is still can you see through it. Yoga Darshan or Yoga Philosophy also happens to be a valid discipline of Indian metaphysics (Brahma Vidya). It is the result of human wisdom and insight on physiology, psychology, ethics and spirituality collected together and practiced over thousands of years for the well being of humanity.

The basic idea of yoga is to unite the atma or individual soul with the paramatma or the Universal Soul. According to Yoga philosophy, by cleansing one’s mind and controlling one’s thought processes one can return to that primeval state, when the individual self was nothing but a part of the Divine Self. This is the sense encapsulated in
the term samadhi. The aim of the yogi is to be able to perceive the world in its true light and to accept that truth in its entirety.

In Sanskrit, the term ‘yoga’ stands for ‘union’. A yogi’s ultimate aim is to be able to attain this ‘union’ with the Eternal Self with the help of certain mental and physical exercises. It is often said that Hiranyagarbha (The Cosmic Womb) Himself had originally advocated the traditional system of yoga, from which all other yoga schools have evolved. But for all extant knowledge of yoga and its practices, such as yogasanas and pranayama, the entire credit goes to Maharishi Patanjali.

Patanjali systematized the various yogic practices and traditions of his times by encapsulating them in the form of aphorisms in his Yoga Sutra. In this momentous work, he describes the aim of yoga as knowledge of the self and outlines the eight steps or methods of achieving it. These are:

- Amas or eternal vows,
- Niyamas or observances,
- Yogasanas or yoga postures,
- Pranayama or breath control exercises,
- Pratyahara or withdrawal of the senses from distractions of the outside world,
- Dharana or concentration on an object, place or subject,
- Dhyana or the continuance of this concentration—meditation and
- Samadhi or the ultimate stage of yoga meditation.

1.1.1 A UNIVERSAL PRACTICAL DISCIPLINE

Yoga is a psychological, physiological and spiritual discipline that has been an integral part of our Indian culture for centuries. Yoga is a complete science of life that originated about thousands of years ago in India and still been practiced in India for centuries.
1.1.2 PROCESS

Yoga is a process or system that maintains not only the health but also generates a sense of happiness and fulfillment. It also encourages personal growth and development. Yoga brings the mind and body into a mutual state of well being, balance, ease and vibrant alertness.

1.1.3 POSITIVE APPROACH TO HEALTH

The health of the human being is influenced by various factors. Yoga is one of the systems that include all these factors. These factors are regular exercise in the form of physical postures, proper breathing, sufficient rest and relaxation, meditation, positive thinking and balanced diet. Thus Yoga is an important, natural, preventive measure to ensure good health.

1.1.4 SELF THERAPY

Yoga is a self therapy. It is a self therapy in the sense that one can perform this discipline on his own. Yoga involves different breathing techniques and postures which are known as Asanas or postures. Postures, Proper Breathing, Relaxation and meditation are an important part of Yoga.

1.1.5 YOGA PHILOSOPHY

The Patanjali Yoga philosophy, which is one of the six systems constituting Vedic philosophy, is also known as Ashtanga Yoga (the yoga of eight parts or limbs) and is closely related to Sankhya and Vedantic philosophy. Ashtanga Yoga is the practical manifestation of both these philosophies. This practical system attempts to understand the nature of the elusive element we know as ‘mind’-its different states of being, impediments to growth, afflictions and the methods of harnessing it for the achievement of absolute self realization.

While Sankhya philosophy assigns three functions to the mental body-mind (mana), intelligence (buddhi) and false knowledge (mithya jnana)-Vedanta adds a fourth element to this-chitta or conditioned consciousness. But ancient yoga teachers collapse
the category of the mental body with the mind and assigns intelligence and false ego as aspects of that mind with the chitta denoting the various states of the mana or mind. Yoga likens mana and chitta with a lake, which is essentially calm and peaceful but whose basic tranquility is obscured by various insubstantial surface waves. According to the philosophy, there are only two ways of disturbing this serenity and engendering patterns of thought—through sense perceptions (pramana) and when our memory (smriti) gets triggered off.

All other sources of mental activity lead to false knowledge. To quote the most venerable among yoga teachers, Sage Patanjali, who said in his Yoga Sutra: “...when the persons possessing a body mistake by their erring intellect, this very body for the soul (atman), this kind of bondage is wrought by ignorance (avidya); its annihilation is emancipation (moksha).”

The central doctrine of Yoga philosophy is that nothing exists beyond the mind and its consciousness, which is the only ultimate reality. The objective of this philosophy is to uproot misconceptions about the existence of external ‘realities’ from the minds of men. It believes that it is possible to reach this stage of self realization through regular practice of certain yogic meditative processes that bring a complete withdrawal or detachment from all false sources of knowledge and inculcates an inner sense of balanced calm and tranquility.

1.1.6 FIVE STATES OF MIND

Depending on the degree of distraction, Yoga philosophy categorizes the mind under five stages of being:

- Kshipta or disturbed,
- Mudha or stupefied,
- Vikshipta or distracted,
- Ekagra or concentrated and
- Niruddha or the absolutely balanced state of mind.
While the first three stages are negative and cause impediments to the healthy growth of the mind and its horizons, the following two are the desired states of being. When the mind is in its earliest stage of disturbance, it lacks judgment and is generally hyperactive, unable to ignore external stimuli. The next stage of the mudha or stupefied state of mind is distinguished by inertia, lethargy, sluggishness, vice, ignorance and sleep. The state of vikshipta is an advanced stage of the kshipta mind, when it still lacks consistency and is unable to quieten down or reflect.

Ekagra and niruddha are the mental levels at which, the mind almost ceases to be affected by the pains and miseries of mortal existence. They are the calmest and most peaceful states of mind. Ekagra or the tranquil state of mind is as near to inner stillness as one is ever likely to get. This state of mind is highly conducive to concentration and meditation, which is why the yoga system aims at maintaining and developing it as consistently as possible through various yogic meditational practices.

The last stage or niruddha is that rare state of being, where the mind is totally undisturbed and purified by the flow of positive energy. Niruddha is the ultimate desired mental stage in yogic practices. It is at this pristine state alone that we are able to realize the true nature of our souls. These last two states of mind are positive and conducive to meditation. Various yogic practices such as certain yogasanas, pranayama, dhyana, dharana and samadhi are designed for achieving the niruddha state of mind.

1.1.7 FIVE MODIFICATIONS OF THE MIND

The yoga system categorizes the vrittis or forms of thought into five sections:

- Comprehension or Pramana,
- Misapprehension or Viparyaya,
- Conceptualization or Vikalpa,
- Deep Sleep or Nidra and
- Memory or Smriti.

All our thoughts, emotions and psychological states fall within either of these sections. These five are again further subdivided into two mental types:
• Klista and
• Aklista.

While the first type causes afflictions, the next does not. Misapprehension, conceptualization and deep sleep are considered to be the three main causes of various afflictions while the categories of comprehension and memory (of certain kinds) are viewed more positively. These two categories of pramana and smriti are also conducive to meditation and the attainment of kaivalya or detachment from the material world.

Pramana or comprehension is the awareness of one’s true state of existence. The three epistemologies or valid means of knowledge for this category are:

• Pratyaksha or Direct Perception,
• Anumana or Inference and
• Shabda Pramana or Verbal Testimony.

The knowledge gained from either sensory or inner perception, inference and verbal authority are all considered to be true knowledge according to yoga.

Viparyaya or misapprehension is equivalent to ignorance (avidya) in Yoga philosophy. And knowledge borne out of misconceptions such as mistaking a rope for a snake and vice versa are false, leading to afflictions of the greatest kind. Viparyaya gives rise to the following klesas or obstacles to meditation:

• Avidya or Ignorance,
• Asmita or Egoism,
• Raga or Attachment,
• Dvesa or Hatred and
• Abhinivesa or the sense of self-preservation.

The viparyaya category of comprehension is taken to be correct until more favorable conditions reveal the actual nature of the object of comprehension.

Vikalpa or conceptualization is also considered to be a source of avidya or ignorance because it is the comprehension of an object based only on words and
expressions, even though the object is absent. This includes beliefs such as the existence of horned rabbits or winged fairies. It is possible to conceive of such imaginary and purely linguistic categories but nevertheless they are all erroneous knowledge and do not correspond with anything in existence.

Deep sleep or nidra is also thought to be a negative modification of the mind. During this mental state the mind is overcome with heaviness and no other activities are present. This state is virtually a withdrawal from the external world, when one is left without any control over one’s consciousness. It is important to note at this point that the dream state and the conscious state are not modifications because while dreaming, our minds are occupied with vikalpa and while awake, the mind is concerned with the categories of pramana and viparyaya.

Smriti or memory is concerned with the evocation of stored impressions, or rather the mental retention of conscious experiences. All these categories are present in the kshipta, mudha and vikshipta states of mind. Ekagra and niruddha are above all such modifications.

1.1.8 NINE IMPEDIMENTS

The above modifications are primarily caused by the nine impediments to a healthy growth and development of the mind. These are:

- Sickness,
- Incompetence,
- Doubt,
- Delusion,
- Fatigue,
- Overindulgence,
- Confusion,
- Lack of perseverance and
- Regression.
These nine conditions are the greatest causes of all sorrows, miseries and pain, which disturb the mind and result in distractions and loss of mental tranquility. All these interruptions produce symptoms such as, mental discomfort, negative thinking, the inability to be at ease in different body postures, and difficulty in controlling one’s breath. The yoga of Patanjali prescribes abhyasa or regular practice and vairagya or detachment as the sole means of conquering such impediments and achieving kaivalya (absoluteness) or self realization. Abhyasa in this case is basically the correct effort required to move toward, reach, and maintain the state of yoga. (http://www.lifepositive.com/body/yoga/yoga.asp, March, 2011).

1.2 HISTORY OF YOGA

Yoga as we identify it today is the product of a complex spiritual evolution that has taken place over centuries, the exact history of Yoga is uncertain. The earliest signs of Yoga can be traced to Stone Age Shamanism, both Shamanism and Yoga has cultural similarities. The shamanistic civilization revered the sacred art of discern the cosmic order through inner vision; they used rituals to create shifts in their perceptual field to communicate with the spirit world. Shamans were the precursors of the Yogis.

The development of yoga can be traced to over 5,000 years ago, evidence of yoga postures were found on stone drawings dating from these times. Archaeological findings from the Indus Valley Civilization, revealed a portrait of a Yogi meditating in what looks like an Asana, it is known as the Pashupati seal. Yoga’s long rich history can be divided into five main periods: Vedic Yoga, Pre-Classical Yoga, Classical Yoga, Post-Classical Yoga and Modern Yoga.

1.2.1 VEDIC YOGA

Vedas are a compilation of hymns and rituals which contain a comprehensive key to cosmic evolution, the Sanskrit word Veda means “knowledge”. The Vedas contains the oldest known Yogic teachings and is considered divine revelation. Teachings found in the Vedas are called Vedic Yoga, this teachings revolves around the through of reuniting the visible material world with the spiritual world transcending the limitations of the mind.
During this time, the Vedic people relied on rishis (Vedic prophets) to teach them how to live in divine harmony, understanding the world.

Later, texts known as the Brahmanas were written as commentaries explaining the hymns of the Vedas. The Aranyakas are texts which details rituals for Yogis living in the seclusion of the forest, most Brahmanas have one or more Aranyakas associated with them.

The actual word “Yoga” was first mentioned in the Rigveda, the Rigveda; which dates back to approximately 1,500 before the Common Era; is a collection of hymns describing the practice of meditation as a discipline.

1.2.2 PRE-CLASSICAL YOGA

The Pre-Classical Yoga period covers an extensive period of approximately 2,000 years; the creation of the Upanishads marks the beginning of this period, they are a huge work containing over 200 scriptures which describes the idea of karma, the cycle of birth and death, the moral causation from past actions and first mentioned the Koshas (one of five coverings of the soul), these explain three subjects: the ultimate reality (Brahman), the transcendental self (Atman) and the relationship between the two.

Around 500 B.C.E., the Bhagavad-Gita was created; it is a beautiful story of a conversation between the God-man Krishna and the prince Arjuna. In the Bhagavad-Gita, three aspects must be brought mutually in our existence: Bhakti (devotion), Jnana (knowledge), and Karma (cause and effect). The Gita then tried to unify the Yogic traditions of Bhakti Yoga, Jnana Yoga, and Karma Yoga searching the sacrifice of the ego through self-knowledge and it is because of this that it has gained importance.

During this time, Yoga found its way into Buddhism too, the Buddha saw that the suffering is caused by desire, greed, and delusion, its Yoga stresses the importance of Meditation and ethics over Physical Postures.

A revered figure named Vyasa, categorized the Vedic hymns into the 4 Vedic texts: Rigveda (“Knowledge of Praise”), Yajurveda (“Knowledge of Sacrifice”),
Samaveda (“Knowledge of Melodies”), and Atharvaveda (“Knowledge of Atharvan”). Atharvan was a legendary Rishi.

1.2.3 CLASSICAL YOGA

The classical Yoga period is defined by the Yoga Sutra, composed by Patanjali. In Patanjali’s sutras; Yoga is presented in a standardized and approachable way; Patanjali has often been called the founder of Yoga because of this work. Patanjali believed that every individual is composed of Prakrti (matter) and Purusha (spirit) and that the goal of Yoga is to free the spirit from the material world. This is in severe dissimilarity to Pre-classical and Vedic Yoga, which signify the unification of the matter and the spirit.

The 195 sutras (words of wisdom) that comprise the Yoga Sutra expound the practice of yoga into an eight-limbed path of self-transcendence, these are:

1. Yama – Self-restraint or ethical conduct
2. Niyama – Personal and religious observance of purity, devotion and study
3. Asana – Physical activity
4. Pranayama – Breath control or regulation
5. Pratyahara – Abstraction of the senses
6. Dharana – Concentration
7. Dhyana – Meditation that leads to Samadhi
8. Samadhi – Absorption in the sublime and blissful awareness

Patanjali’s concept was prevailing for some centuries that some Yogis focused entirely on Meditation and ignored the practice of Asanas.

1.2.4 POST-CLASSICAL YOGA

Yogis of the past had not paid much attention to the physical body as they were focused on meditation and contemplation. A few centuries after Patanjali, Yoga took a turn, the new generation of yoga masters beginning to probe the hidden powers of the human body, developing a system where different exercises, in conjunction with deep breathing and meditation, would help to rejuvenate the physical body, prolong life and
achieve enlightenment. The human body was regarded as the temple of the immortal soul.

The Post-Classical Yoga period gave a dramatic increase in Yogic literature and brought big changes to Yoga, with the developing of Hatha Yoga and other branches of Yoga. During this time Yoga flourished and nowadays is practiced throughout the world. In contrast to classical Yoga, Post-Classical Yoga is focused in the appreciation of the present moment and the affirmation of the unity of everything.

1.2.5 MODERN YOGA

Yoga arrived to the West during the late 1800’s. It can be attributed to many gurus, including Swami Vivekananda, a student of Ramakrishna who was commissioned to attend the 1893 Parliament of Religions in Chicago causing deep impression on the Americans. Other important Yoga gurus include Swami Paramahansa Yogananda, Swami Sivananda Radha, Sri Tirumalai Krishnamacharya, Yogi Swami Sivananda, Swami Satchidananda and Maharishi Mahesh Yogi who popularized Transcendental Meditation in the 1960’s. Dalai Lama is a great yogi from Tibet; he was awarded the Nobel Prize for peace and has inspired many westerners to learn more about Buddhism and Yoga.

Yogi Swami Sivananda taught the Five Principles of Yoga which are:

1. Proper Relaxation (Savasana)
2. Proper Exercise (Asanas)
3. Proper Breathing (Pranayama)
4. Proper Diet
5. Positive Thinking and Meditation (Dhyana)

Yoga now has several different schools or styles, all emphasizing the diverse aspects of the practice. Hatha Yoga practitioners learn to recognize reality and use physical resources in order to achieve self-development. Nowadays, Yoga is the mainly diversified spiritual practice in the planet; it has gained enormously popularity throughout the last few years, and these days over 30 million people follow the Yoga message of peace. (http://www.yogaweb.com/yoga/essentials/history.asp, March, 2011).
1.3 ORIGIN OF YOGA

“Yoga” the very word radiates peace and tranquility. This feeling probably stems from the etymology of the word. The word Yoga is derived from the Sanskrit word ‘Yuj’ which essentially means to join or unite. The union referred to is that of the individual self-uniting with Cosmic Consciousness or the Universal Spirit. Yoga is a means to achieving this goal.

Born in India, almost 26,000 years ago, Yoga is believed to have evolved during the period of the ‘Sat Yuga’, also called the Golden age. This period became known as a time of everlasting peace and abundant blessings, filled with seekers of the Eternal Truth. That is why, probably, even today we associate yoga with sages and hermits.

It was not until the discovery of the Indus-valley civilization, the largest civilization that knowledge about the origin of Yoga surfaced. Excavations give evidence of yoga’s existence during this period; yogi-like figures engraved on soapstone seals have been unearthed. In fact, it was the Aryans, migrating from the north-west, who were instrumental in discovering yoga. (http://www.medindia.net/Yoga-Lifestyle/yoga-origin.htm#ixzz1Dvyb0LXH, March, 2011).

1.4 TYPES OF YOGA

Various Types of Yoga benefits the human body and mind mentally, physically and spiritually. While the ultimate goal of yoga is to unify body, mind and soul, there are different ways to achieve this aim. These various ways constitute the different types of yoga. Yoga is broadly divided into eight types, namely Bhakti Yoga, Hatha Yoga, Jnana Yoga, Karma Yoga, Kundalini Yoga, Mantra Yoga, Bahiranga Yoga and Swara Yoga. Most of these kinds had been practiced in India since ages unknown. Certain factors, like, origin, history, style, technique and significance, differentiate one branch of yoga from the other. Through the development of one’s body, mind and psychic potencies, these ultimately lead to physical strength and further on to spiritual consciousness. Hence the final aim of all kinds of yoga is primarily the same: salvation. Most of the types of yoga also involve the usage of different poses or yoga asanas, meditation and breathing exercises or Pranayamas.
1.4.1 BHAKTI YOGA

One of the ancient branches of yoga is the Bhakti Yoga. As his apparent from its name, this type of yoga stresses on ‘bhakti’ or love and devotion to the Almighty. Bhakti Yoga has its roots in the Bhagawad Gita. The individual performing this type of Yoga purely concentrates on the existence of Almighty. The practitioner learns to show love, compassion to the creatures co-existing with him/her, apart from intensely worshipping the Lord. Bhakti Yoga can be practiced in a number of ways, like praising the God by singing, reading religious books, chanting slogans, listening to prayers and by watching religious movies. There are nine forms of Bhakti yoga, namely Sravana (hearing about God); Archana (worship of God); Kirtana (singing of the glory of God); Sakhya (cultivation of the friend-Bhava); Smarana (remembering God’s name and presence); Vandana (prostration); Padasevana (service of God); Dasya (cultivating the Bhava of a servant); and Atmanivedana (surrender of the self).

1.4.2 BAHIRANGA YOGA

The first written reference to Bahiranga yoga can be found in Sadhana Pada, the second chapter of Maharishi Patanjali’s Yoga Sutras. Also known as Ashtanga Yoga or eight-limbed Yoga or Raja Yoga, this type of yoga aids an individual in alleviating himself or herself from the emotional and mental conflicts. It also helps a person to co-exist peacefully with other creatures and the environment. The eight limbs or elements that comprise Bahiranga yoga include Yama (principles or moral code); Dharana (concentration on objects); Pranayama (yoga breathing); Niyama (personal disciplines); Pratyahara (withdrawal of senses); yoga asana (postures); Dhyana (meditation); and Samadhi (salvation). This type of yoga is perfect for those who are yet to develop spiritually.

1.4.3 KARMA YOGA

Karma in Sanskrit means action. This, too, is an ancient type of yoga that has been derived from the teachings of Lord Krishna compiled in Bhagawad Gita. Karma yoga, thus, emphasizes on unselfish services. “Karmanye Badhikarosthe Maa Foleshu Kodachano, Maa Karmofolohetu Bhurmate, Sangohosto Kormoni” forms the crux of this
form of yoga. Technique like Karma Yoga helps in reducing Ahamkara. It purifies one’s heart, and helps to attain the knowledge of one’s own self. The aim of a Karma Yogic (one, who performs Karma Yoga) is to practice his duty without expecting any rewards in return.

1.4.4 KUNDALINI YOGA

Practice of Kundalini Yoga leads an individual to enlightenment. Known as one of the spiritual sciences, this kind of yoga awakens the Kundalini, the central point of prana (life force. The concept of Kundalini has been an integral part of ancient Hindu philosophy. Kundalini Yoga aims at attracting the untapped energy or the Kundalini that remains coiled at the base of the spine, by using a set of technique that uses the individual’s mind, senses and body. Apart from the physical postures or the Asanas, the person performs meditation, chants mantras and awakens each of the seven chakras of the body. The Asanas are coordinated with the hold of breath control.

1.4.5 HATHA YOGA

It was during 15th century that Hatha Yoga was founded by Yogi Swatmarama. The Hatha Yoga Pradipika mentions this type of yoga in details. This type of Yoga is all about the combination of two extremes, namely ‘ha’ (the Sun, regarded as the positive current) and ‘tha’ (the Moon, regarded as the negative current). This type of Yoga involves the presentation of physical postures, namely asanas, breathing exercises or Pranayamas, meditation, mudras and purification procedures known as ‘Shatkriyas’ Thus Hatha yoga purifies the body and prepares an individual for the meditation. The final aim of Hatha Yoga is to achieve salvation through Samadhi. In several ways, Hatha Yoga is similar to Ashtanga yoga.

1.4.6 JNANA YOGA

Jnana (Gnana) yoga is another type of yoga in India that has been mentioned in Bhagawad Gita. Krishna emphasized the significance of jnana or knowledge stating that it enables an individual to comprehend his own self and his activities. However it was developed to its present form by Adi Shankara. Jnana Yoga, thus, is the Yoga of true
knowledge and aims to detach the person from all the temporal things of the life. The person practicing it attains tranquility, control over his/her mind, sense, faith, ability for concentration and the endurance to withstand the play of opposites by Mother Nature. By practicing Jnana Yoga, the individual can also exercise self-control and remains focused in his work.

1.4.7 MANTRA YOGA

Mantra Yoga, as the name suggests, makes use of mantras to attain a peace of mind and increase the concentration power. It has its roots in the Vedas. The mantras are chanted by the individual in a thoughtful and intense way, in order to attain certain goals. Mantra Yoga helps to remove a number of disorders, including emotional ailments and the problems of anxiety, stress and tension. It enhances the person’s self-confidence and has a positive impact on the psychology of an individual. AUM, the mystical syllable, is recommended in Mantra yoga to bring about a change of consciousness. Besides this Mantra yoga is also an integral element in Tantra.

1.4.8 SWARA YOGA

Dating back to the Vedic period Swara Yoga refers to the control of the life force through breathing. Shiva Svarodaya, an ancient Indian manuscript mentions this type of yoga. Swara Yoga is derived from the word Swara in Sanskrit that means sound or musical note; it also means the incessant flow of air through one nostril. It is said that by practicing Swara yoga an individual can find out about the consequence of his or her actions.

Another form of yoga is the Kriya yoga. Though relatively a newer concept, it is said that Kriya yoga has been mentioned in Gita. However, it was Lahiri Mahasaya who taught the technique of Kriya yoga. The different types of yoga, thus, can be helpful for different people as every individual differs from the other and so does his temperament and need. Thus, each type of Yoga practice can provide an answer to the practitioner’s questions and relieve his mind and soul from such unanswered queries. (http://www.indianetzone.com/42/types-yoga.htm, March, 2011).
1.5 AIM OF YOGA

In accordance with its nature atman is completely spiritual; hence spiritual culture is natural to it. However, due to the results of previous actions performed in ignorance of their consequences, the atman remains incarcerated in the physical body and its energy, consciousness becomes shrouded in the darkness of ignorance, life after life. Ignorance causes us to forget our true identity as spiritual beings and hence makes us attached to temporary, non-essential matter. This results in the psyche coming in the grip of an intrusive type of fear that is never far away and always ready to attack. Thus the aim of yoga is to situate the atman in its original, constitutional position, i.e. freedom from false identification with the transitory physical body and mind. When this occurs the mind becomes free from fear, anxiety, suffering and delusion. Just as the fish cannot remain longer than a few minutes outside water, the atman, the spirit soul cannot remain happy in this transient mundane abode, not its natural habitat.

The spirit soul is immortal, so it is constantly searching for an eternal abode full of bliss. Sage Patanjali directs the beginner’s attention to another important point to be considered. Every individual is unique, possessing her/his unique nature and character shaped by the individual’s karma, results of previous actions. This personal nature must be taken into account when engaging in yoga practice. The intrinsic nature of every individual’s spiritual soul is all the same the nature every individual is born with varies, even if sometimes only slightly. Specific practices may not suit certain individuals. Time required to accomplish a task will indeed vary from individual to individual. Which aspects of a certain practice require more attention and which less, or where are the mental blocks, etc. etc.

The reason for such advice is that going against the grain of one’s nature will result in inner conflict and frustration. Thus we are advised in the scriptures not to perform the duties of a person of a different nature and occupation, even if we can execute it well. It is far better to perform one’s own duties according to one’s nature and occupation even if not performed well. For example, a student with a sharp memory learns just by hearing and does not require long study-hours after school. If other students
try to imitate him, most will probably fail in the exam. So, the yoga novice must try to find out his/her nature and character, and only then proceed. Practice of yoga to attain a degree of perfection may require a better part of a life or even the entire life. Half way through the practice to detect that one has not taken the right decisions on what to practice will indeed lead to immense disappointment. It means to plan the right strategy of conducting life by integrating yoga. (http://www.cyberastro.com/articles/the aim-of-yoga3.asp, March, 2011).

1.6 NEED AND IMPORTANCE OF YOGA

The intermediate and advanced students, who insist on continuing their practices, get more and more of the taste of this great 5000+ year old wondrous way of life. Yoga is for the body, mind and spirit. You learn to use your body, breath and mind to stretch, relax and energize yourself

1.6.1 IMPORTANCE OF YOGA

- Brings down stress and enhances powers of relaxation
- Boosts physical strength, stamina and flexibility
- Bestows greater powers of concentration and self-control
- Inculcates impulse Control
- Helps in rehabilitation of old and new injuries
- Intensifies tolerance to pain and enhancing mental clarity
- Boosts functioning of the immune system
- Enhances posture and muscle tone
- Improves blood circulation
- Results in healthy, glowing skin
- Cleanses and improves overall organ functioning
- Bestows peace of mind and a more positive outlook to life
- Infuses a sense of balance and internal harmony

Best of all, Yoga is highly therapeutic. Some of the ailments proven to be relieved, reversed and even healed through the practice of Yoga are acidity, allergies, alzheimer disease, anemia, anger, anxiety, arthritis, asthma, back pain, bronchitis, cancer,
carpal tunnel syndrome, chronic fatigue, colitis, common cold, constipation, depression, diabetes, epilepsy, eye problems, facial wrinkles, gastro-intestinal disorders, headaches, heartburn, hemorrhoids, hepatitis, high blood pressure, hypertension, immune-deficiency, impotence, menopause, menstrual cramps, migraines, multiple sclerosis, muscular dystrophy, nervous tension, obesity, osteoporosis, prostate, enlargement, sciatica, skin problems, sleep apnea, slipped disk, sterility, stiffness, stress, insomnia, intoxication, thyroid problems, kidney stones, stuttering and stammering, urinary tract disorders for women, vaginal infections and many more...

So, if Yoga has varied and immense physical benefits, what exactly is Yoga? Yoga is a 5000 year old science whose teachings were first imparted not in a classroom or Gurukul, but on the battle field. In the epic Mahabharata, the sage, Lord Krishna is first said to have imparted the teachings of Yoga to his despondent student Arjuna. Around 1500 years later, another sage, Patanjali, went on to enunciate, for the benefit of humankind and eternity, the way to reach the summom bonum of life through a series of 195 aphorisms (sutras) in his epic treatise The Yoga Sutras of Patanjali.

Derived from the Sanskrit root “Yujir Yogey” meaning to unite, to yoke, to join, to put together, Yoga is not about mind over body. On the other hand, Yoga is about developing harmony between them. In Yoga, you use your mind to perceive (diagnose) and guide (heal) your body. Never control, let alone force it!

Yoga is a way of life, a conscious act, not a set or series of learning principles. The dexterity, grace, and poise you cultivate, as a matter of course, is the natural outcome of regular practice. You require no major effort. In fact trying hard will turn your practices into a humdrum, painful, even injurious routine and will eventually slow down your progress. Subsequently, and interestingly, the therapeutic effect of Yoga is the direct result of involving the mind totally in inspiring (breathing) the body to awaken.

Contrary to popular – or unpopular – perception, Yoga positions are not about how far you can reach to touch your toes or how many repetitions you can perform. It is all about paying attention to how your body feels; how it moves without that excruciating
pain or agony! Yoga is all about breathing correctly about integrating that breath into your being. Conscious Yoga doesn’t call for you to force or strain your never or sinew. Meaning to say, right Yoga is learning how to do things right, do less that gets you more!

Ironically, by doing less - correctly - Yoga enhances your strength, energy, vitality, flexibility and levels of endurance. Accordingly, your body and mind start to become more balanced until, eventually; you find it takes so much less energy to move through the day. Yes, any and every one can do less…and get a lot, lot more. (http://www.yogawiz.com, March, 2011).

1.7 HEALTH BENEFITS OF YOGA

Yoga has both preventive and therapeutic benefits. It has been shown to offer both physical and mental benefits to the body and the mind.

The many physical benefits of hatha yoga are: it improves flexibility and muscle joint mobility; strengthens, tones, and builds muscles; corrects posture; strengthens the spine; eases back pain; improves muscular-skeletal conditions such as bad knees, tight shoulders and neck, swayback and scoliosis; increases stamina; creates balance and grace; stimulates the glands of the endocrine system; improves digestion and elimination; increases circulation; improves heart conditions; improves breathing disorders; boosts immune response; decreases cholesterol and blood sugar levels; and encourages weight loss.

The mental benefits include: it increases body awareness; relieves chronic stress patterns in the body; refreshes the body by relieving muscle strain; relaxes the mind and body; centers attention; sharpens concentration; and frees the spirit.

Western doctors and scientists are discovering additional health benefits of hatha yoga. Studies have shown that it can relieve the symptoms of several common and potentially life-threatening illnesses; such as arthritis, arteriosclerosis, chronic fatigue, diabetes, AIDS, asthma and obesity. Many believe it even fends off the ravages of old age.
1.7.1 SCOPE OF YOGA EXERCISE

A near-perfect fitness routine, hatha yoga provides the means for people of any age not only to get and stay in shape but also to develop balance, coordination, and a sense of centeredness. It renews, invigorates, and heals the body - stretching and toning the muscles, joints, and spine and directing blood and oxygen to the internal organs (including the glands and nerves). Yoga is distinctly different from other kinds of exercise. It generates motion without causing strain and imbalances in the body. When practiced correctly, hatha yoga has no such negative effects on either the inner or outer body.

When done with dedication and purpose, hatha yoga can be a quite demanding, yet an immensely rewarding type of exercise. While not inherently aerobic, it involves almost every muscle in the body and challenges the body to work in a different and often more passive way. Since the limbs function as free weights, resistance is created by moving the body’s center of gravity. This strengthening gives way to endurance as poses are held for longer periods of time. Unlike conventional forms of exercise, such as weight training, walking, biking or hiking, hatha yoga stresses quality of movement over quantity. A consistent hatha yoga practice can quiet the mind and refresh the body, bringing health, relaxation, and happiness.

1.7.2 YOGA BENEFITS FOR ALL AGES

As well as being fun for children, learning yoga develops self-discipline and can enhance their physical and mental health. Asanas are good for developing coordination and help to improve concentration and memory. Regular practice can enable young people to keep their natural flexibility for many years.

It can help teenagers to keep their youthful flexibility and give them the inner strength to say no to negative influences. Older people often find that gentle yoga exercises allow them to retain mobility and may relieve problems such as arthritis and poor circulation. During pregnancy, yoga promotes good health in both mother and unborn child. Yoga asanas lessen the effects of such problems as overweight, backache,
and depression. Most women who practice yoga find that it can make labor easier and shorter. Although some asanas have to be modified during pregnancy, their essence is perfectly suited to this time of expanded self-awareness. Pregnancy is also a very good time for meditation.

Everyone can benefit from following a regular yoga routine, as it counteracts many of the problems suffered in modern life. Asanas release the physical tensions caused by hours of sitting, deep breathing gives vitality by increasing the supply of oxygen to the brain and meditation enhances the powers of concentration. Yoga improves strength and flexibility in the mind as well as the body, and aids relaxation. Yoga can enable one to relax fully, and promotes sound sleep; it also improves digestion and stimulates circulation. It frees the practitioner physically and mentally, often heightening intuition and creativity.

**1.7.3 YOGA AND SPORTS**

Yoga postures are the physical positions that coordinate breath with movement and with holding the position to stretch and strengthen different parts of the body. Asana practice is the ideal complement to other forms of exercise, especially running, cycling and strength training, as the postures systematically work all the major muscle groups, including the back, neck, and shoulders, deep abdominal, hip and buttocks muscles and even ankles, feet, wrists and hands.

By their very nature, asanas affect major and minor muscle groups and organs as they simultaneously import strength, increase flexibility and bring nourishment to internal organs. Although most poses are not aerobic in nature, they do in fact send oxygen to the cells in the body by way of conscious deep breathing and sustained stretching and contraction of different muscle groups.

Whatever sport you choose to practice, yoga can enhance and complement your ability. Most sports build muscular strength and stamina, often in specific areas of the body. Yoga can help to check any imbalance in muscular development and will enable both your body and your mind to function more efficiently. If your body is flexible and
supple you will be less prone to sports injuries, as your joints will be kept lubricated. Skiing demands mental alertness as well as good balance. Yoga asanas strengthen your muscles, release physical tension and improve your concentration and poise. Yoga makes your limbs balanced, strong and relaxed.

Golfers may be prone to one-sided or uneven muscle development. Yoga asanas can strengthen weak areas and ease muscular tension. The standing poses improve balance and muscle flexibility. Yoga breathing techniques help swimmers to breathe in a relaxed way when exercising.

For bicyclists, back bends can relieve any stiffness caused by bending over handlebars. Because a cyclist’s back stays in one position for long periods, the muscles may become tense. This can be remedied with stretches. Gentle stretching exercises also ease stiffness in the legs and shoulders. Yoga asanas will also improve flexibility.

Racket sports often involve intense physical effort. Yoga practice can help players to relax and replenish their energy after strenuous games. It also promotes calm, clear thinking, even in situations that call for fast reactions. Asanas for joint mobility can make hips and shoulders more flexible. (http://www.yogaforbeginners.com/html/benefits01.htm, March, 2011).

1.8 OBJECTIVES OF YOGA IN PHYSICAL EDUCATION

Health, physical fitness and emotional stability are the objectives which bring yoga and physical education on a common platform for the benefit of human individual. Health is a more general and comprehensive term conveying the ‘feeling of well-being’, while physical fitness is a more specific term. Physical fitness is the capacity of an individual to perform a given task at a particular time. Health and physical fitness are not static. They are always changing they follow the law can be maintained only by carefully selected physical activities which are called ‘exercise’. The utility of the particular exercise program can be evaluated only in forms of the effects that one obtained in promoting a particular factor of physical fitness. Through constant practice of yoga, one can overcome all difficulties and eradicate all weakness pain can be transmitted in to
bliss, sorrow in joys, and failure into success and sickness into perfect health. Determination, patience and persistence lead one to goal.

1.8.1 YOGA AND HUMAN BODY

Yoga and Human Body are integrally linked as several practices can cure the human anatomy of diseases.

Yoga is integrally linked with the wellbeing of human body. Though it is said that the final aim of yoga is to achieve moksha or nirvana, several yogic practices are instrumental in maintaining good health. Real comfort lies in good health and this is an essential component for happiness as well. Those who practice yoga as a daily ritual would experience great deal of peace and joy. However, in order to comprehend the health problems relating to human body, preliminary knowledge of anatomy and physiology are necessary. The knowledge of anatomy and physiology forms the basis for the study of biological sciences. Even for a common man, to understand the health problems and to find their solutions, preliminary understanding of this subject will be helpful. At present, the human existence is challenged by the stress disorders or the psychosomatic diseases such as hypertension, hyperacidity, insomnia, heart diseases, diabetes, asthma, etc. To combat these diseases an individual can always resort to yoga as it has therapeutic value. It has the potential to tranquilize and balance the mind.

While delving into the history of yoga it has been observed that the yogic practices have evolved with passing time with a specific purpose of influencing various psycho-physiological functions. These ancient concepts seem to have been based more on an empirical approach and therefore have less objectivity, when they are compared to the modern scientific concepts which are based on experimental, analytical and objective approaches. The yogis have arrived at these concepts by introspection, in the form of subjective experiences accompanying various Yogic practices like Asanas, Pranayama etc. which influence different functions of the body. At the same time, they also used the knowledge of anatomy, as recorded in various Ayurvedic texts. A famous treatise on surgical aspects of Ayurveda called Sushruta Samhita mentions specifically that ‘the
anatomical description given in that work is not only for the practitioners of Ayurveda but is also for the students of Yoga’ (vide Sutra sthana III. 17).

According to yoga the body and mind is never considered as made up of two separate entities. They are rather looked upon as one single composite unit. Similarly the structure of the human body and its function also, are not considered as two separate things but were rather treated as the two aspects of the same organism. There were basic concepts according to which the ancient yogis comprehended the nature of the human being, its dynamism, and its body structure and function. One of them is the Pancha Kosha. A human being is considered existing and carrying out his or her activities simultaneously at five different levels or planes. The term used for these levels is ‘Kosha’, which literally means the cocoon or the sheath. Pancha Kosha, therefore, means the five different levels of existence and operation. A human being is said to exist, simultaneously, on the level of physical body, on the level of physiological-vegetative functions, on the level of emotion and memory, on the level of intellect and on the level of pure consciousness. Through the Yogic practices, such as, Asanas and Pranayama one becomes aware of these different koshas which, in turn, enables man to the correct understanding of one’s own nature.

Prana or life force is responsible for the various functions being carried out within the body. Pranashakti is responsible for the vegetative functions, but at the same time it steers the subtler psychological functions, too. The yogic practices which try to affect Pranic or the vegetative-physiological activities are obviously considered to affect the mind as well and bring about internal awareness. Another element is the Kundalini, the evolutionary energy. According to this concept there is a higher and potentially very dynamic aspect, to this Pranashakti, which in normal circumstances is never called into action. This aspect remains in the dormant state known as ‘kundalini’. Through the yogic practices when it is stimulated, it is awakened and reaches to its highest possible spiritual potential. Awakening one’s kundalini brings about spiritual enlightenment accompanied by significant psycho-physiological changes.

Besides these, the ancient yogis also considered the concept of Nadi while comprehending the human anatomy and the impact of yoga on it. The Pranashakti which
works all over the body, uses some specific channels through which it moves. These channels or passages are known as Nadis. According to the ancient scriptures there is not a single part in the human body which has not been contacted by anyone of these Nadis. In one of the Hatha Yoga texts it is mentioned that there are three hundred fifty thousand Nadis in the body reaching each and every part of the body. Lastly, the Chakras are six nodal points or centers that are responsible for the different levels of consciousness as well as for the control of various internal organs.

With the passage of time and scientific development the view regarding the structure and function of the body became more objective and more analytical in nature. As per the modern view human body shows a remarkable organizational unity which helps in carrying out all its activities in a coordinated and integrated manner. For the specific function there are different types of cells, evolved specially to carry out that function. These cells when form separate specialized group, it is known as tissue. Different tissues come together to form various organs, and different organs come together to form various systems of the body. The functioning of all these systems collectively contributes in what is called as body function. Thus it is essential to realize that the body function is ultimately a collective function of each and every cell which constitutes the body. The proper functioning of each individual cell, therefore, is the most important factor for the survival of the body as a whole.

There are essentially nine systems that are responsible for structure and function in the human body. The Skeletal system and the Muscular system are the principal systems responsible for the movement. The Nervous system and Endocrine system are principally involved in the organization and control of the whole body. Respiratory system and Cardiac system are responsible for making the oxygen and nutrients available for the whole body. Digestive system and excretory system are responsible for making the nutrients available for the body as well as for expelling out the unwanted waste matter from the body. Ultimately the Reproductive system concerns itself with the propagation of the species.

The structure and the function of the body are closely linked with each other. The structure is more defined and is more durable but nonetheless it undergoes changes with
the passage of time. On the other hand, the function is more elusive and goes on showing
the constant fluctuation. During the growth or decay with a change in the structure, the
function changes; similarly in some conditions change in the function can alter the
structure as well. This dynamic inter-relationship between structure and function is an
important factor in understanding the nature of living organism. One feature that
distinguishes human beings from the other beings is their self-consciousness. This is the
single most important factor which can influence whole of the human activities. This
increases enormously the complexity in the nature of human being too.

These systems in the human body are often affected by a number of diseases. In
order to treat them and to keep the body hale and hearty, an individual can always resort
to yoga. The yogic practices heal the body as well as the mind. Practicing yoga can cure,
respiratory disorder, digestive disorders, increase blood circulation and ensure proper
functioning of the heart. However, according to the different systems a particular yogic
practice is suggested. Hence, it is safer to consult a yoga practitioner before initiating into

1.9 PHYSIOLOGICAL ROLE OF YOGA

From my own, limited, view, the central premise of yoga understanding of human
physiology concerns the intake of prana with the breath, as well as the prana contained in
physical food and liquids.

(Kent, 1997) defines prana as the “motivating force of living matter”, it is also
referred to as the Life Force, “Chi”, in China or “Ki” in Japan.

In simple terms yoga tradition maintains that the human body consists not only of
the physical structure but also the electrical emanations from the whole being, with
varying degrees of density, known collectively as the aura, in a ratio of 2/3 physical and
1/3 electrical. The densest radiation of the aura consists of the enteric which is contained
inside the astral body, and extends just a few inches out from the skin, and the finest
radiation forms the outer level of the aura, called the causal body. (In some religious
disciplines this is also referred to as the nerve body and/or the akashic record.) The full
extension of the aura is usually judged to be approximately 3 ft. but is variable according to process, general health and spiritual enlightenment.

Within the astral body, probably at the etheric level, are the “subtle revolving vortices of energy” (Sturgess, 1997) known as the chakras. These are the transformers “which receive, assimilate and distribute prana” (Sturgess, 1997) to the physical body through their connections with the endocrine and nervous systems. Sturgess describes prana as flowing first to the higher brain centers then filtering down through the six main chakras which are closely connected to the 3 central nadis, which form part of the so-called “subtle” nervous system permeating the physical body and the aura. (These central nadis, running the length of the spine and the skull probably correspond with the “Governing Vessel”, and the ascending dorsal section of the “Great Central Channel (meridian)”, from the Chinese Acupuncture tradition. (Gach, 1981).

Whilst prana itself is a pure cosmic ‘fuel’, it is affected by the environment it appears into and as it moves through the chakras it connects with each individual’s particular characteristics. The interplay of thoughts, attitudes, feelings, behavior patterns, habits and actions, as well as the social and environmental stresses the individual is subject to, will all have an effect (or warp factor) on the quality and quantity of prana actually absorbed. So unremitting stress, “artificial values stemming from acquisitiveness and self-interest” (Iyengar, 1995), alienation from spiritual purpose and the many and varied strains of an unnatural way of 21st century life, will all help to diminish the value of the prana received. The human vehicle then ends up running on low octane or polluted energy causing malfunction and ‘dis ease’, with resultant physical manifestations in vulnerable areas.

Yoga is sometimes referred to as the science of religion with the view that the human body is a vehicle for the spirit and soul (perhaps best viewed as the passenger and chauffeur!) It offers a number of tools with which to tune and rebalance the ‘vehicle’, so that it is able to attract the appropriate level and quantity of prana, and fulfill the human function. Asana and pranayama techniques “cleanse the body of tensions, toxins and impurities and release energy blocks, which impede the harmonious flow of energy in the
Meditation techniques have several benefits. For example, not only do they allow a deeper connection to the inner life, which can lead to greater understanding of the actual causes of a person’s ‘disease’, they also allow an increase in the connection to, and sharing of, the higher levels of the life force, which are themselves healing and enlightening to the body, mind, soul and spirit.

Yoga, it is believed, has been evolving and practiced for at least 3 thousand years, and inevitably many schools and disciplines have emerged differing in detail but with the central themes remaining intact. These understandings have arrived during states of deep meditation and resultant ‘in tuition’. This has come about through connection to what Tara Patel describes as the “vast mind realm” and which in yoga literature is referred to as the “watershed of knowledge” within the ultimate state of meditation, samadhi. In psychological terminology this might be described as the higher end of the bar of Jung’s collective unconscious, or the super conscious. In some ancient writings this can be referred to as the “astral light” of which there are said to be 7 levels, from high to low.

It is perhaps difficult for western minds schooled in the scientific disciplines of bio medicine to accept this yoga view of human physiology. However, as evidence emerges demonstrating the existence of the energy field surrounding the physical structure and the links between states of mind, breath and body, together with the increasingly apparent health benefits of asana, pranayama and dhyana techniques, perhaps a meeting place of the views can be found? After all it could be said that the rod of healing has two ends and that bio medicine approaches from the Prakrti (Supreme Matter) perspective whilst yoga (and perhaps other alternative or complementary remedies) approach from the Purusa (Supreme Spirit) view. Without doubt, the physical and electrical worlds mingle and affect each other; in the words of Mehta “the interaction of prakrti and purusa results in creation”.

In terms of the healing use of yoga, it would certainly seem to come within the scope of Antonovsky’s ideas of providing salutogenic solutions, ie finding ways for people find meaning for their life, and to cope with and help manage, (or even perhaps
identify the causes of and possibly combat) their own particular manifestation of ‘dis
ease’ with our way of life in the 21st century. (Yogi Ramacharaka, 1904).

1.10 HEALTH

Health is the general condition of a person in all aspects. It is also a level of
functional and/or metabolic efficiency of an organism, often implicitly human.

At the time of the creation of the World Health Organization (WHO), in 1948,
health was defined as being “a state of complete physical, mental, and social well-being
and not merely the absence of disease or infirmity”.

Only a handful of publications have focused specifically on the definition of
health and its evolution in the first 6 decades. Some of them highlight its lack of
operational value and the problem created by use of the word “complete.” Others declare
the definition, which has not been modified since 1948, “simply a bad one”.

In 1986, the WHO, in the Ottawa Charter for Health Promotion, said that health is
“a resource for everyday life, not the objective of living. Health is a positive concept
emphasizing social and personal resources, as well as physical capacities”. Classification
systems such as the WHO Family of International Classifications (WHO-FIC), which is
composed of the International Classification of Functioning, Disability, and Health (ICF)
and the International Classification of Diseases (ICD) also define health.

Overall health is achieved through a combination of physical, mental, emotional,
and social well-being, which, together is commonly referred to as the Health Triangle.
(WHO, 1986).

1.11 FLEXIBILITY

In general, flexibility means the range of movements around the skeletal joints of
the body. The flexibility is not a general body character but it is specific to each body
region. If a person is highly flexible shoulder, it does not necessarily mean that he/she
will have good knee flexibility or hip flexibility. Even it is possible that one shoulder
joint is more flexible than the other. For a good physical fitness, it is essential that a person has quite flexible joints and is able to maintain his or her body flexibility. The flexibility component of physical fitness enables the person to have free body movements, better coordinated movements requiring lesser work and to handle greater stress with lesser changes of injury.

1.12 IMPORTANCE OF FLEXIBILITY

Flexibility is the ability to execute a wide range of movement in the joints while for repetition of work done in natural speed. Flexibility is most important flexibility helps to move bodily parts easily, takes less time, energy to perform a task. Elasticity in muscle reduces tension and provides maximum length.

1.13 MUSCULAR STRENGTH

Muscle strength refers to the amount of force a muscle can produce with a single maximal effort. Size of muscle cells and the ability of nerves to activate them are related to muscle strength. (Scott, 2008).

1.14 IMPORTANCE OF MUSCULAR STRENGTH

The development of strength is generally understood to be the ability of an individual to use muscular force in order to overcome an external resistance or to counter external forces acting on the body. The shoulder strength can be determined by the individual performance in poll-ups for boys.

The traditional way of building strength is to get the muscles into action by increasing the resistance offered by them. Strength is necessary for good appearance strength is basic to good performance in skills strength valued highly as a measure of physical fitness, physical strength , determines one’s abilities capacities and potentialities that an individual does exhibit. There are various other factors such as arm strength, grip strength, back and leg strength and so on. Which determine the physical strength as a
whole? Among them arm strength is an important factor. There are number of physical exercises and activities which develop arm strength to a great extent.

1.15 CARDIO VASCULAR ENDURANCE

Cardio vascular endurance is also frequently called cardio-respiratory endurance, cardiovascular fitness, aerobic capacity, and aerobic fitness or is sometimes more broadly termed “endurance” although endurance may also refer to the ability of the muscle to do repeated work without fatigue. It is also one of the five components of physical fitness.

While all physical activities involve some level of cardiovascular support, cardiovascular endurance typically refers to the ability of a person to perform activities that raise the heart to a training level and maintain that level for a sustained period of time, typically 10-15 minutes. A “training level” is typically expressed as percentage of a person’s maximum heart rate (RMR), usually between 60-80 percent of an individual’s RMR. (Matt, 2008).

1.16 BENEFITS OF CARDIO VASCULAR ENDURANCE

As a person improves their cardio vascular endurance, a number of beneficial adaptations take place in the body, including:

- **Increased Heart Size (volume and weight):** Improves the strength and pumping capacity of the heart
- **Increased Blood Plasma Volume:** Enhances oxygen transport and temperature regulation during exercise.
- **Decrease in Heart Rate:** Lowers both resting and exercise heart rate, reducing stress on the heart
- **Increases Heart Stroke Volume:** Allows the heart to expel more oxygen-rich blood during each “pump”
• **Increased Cardiac Output**: Improves the ability of the heart to pump blood throughout the body. This represents the most significant overall adaptation in cardiovascular function due to improvements in cardio-respiratory endurance.

• **Improved Oxygen Extraction**: Increases the amount of oxygen tissues are able to extract from circulating blood.

• **Better Blood Flow & Distribution**: Muscles and tissue require less blood because of improved delivery, extraction and utilization of oxygen. Less blood is needed by the muscles because their ability to deliver, extracts, and use oxygen increases.

• **Lowered blood pressure**

• **More Efficient Pulmonary Function**: Because the body can better utilize available oxygen, a person with better cardio-respiratory endurance doesn’t need to take as many breaths during exercise. This keeps you from getting “winded” - whether that’s climbing stairs or running sprints. ([http://the-exercise-site.com](http://the-exercise-site.com), March, 2011).

### 1.17 RESTING HEART RATE

Resting heart rate is a person’s heart rate when they are at rest: awake but lying down, and not having immediately exerted them. Typical healthy resting heart rate in adults is 60–80 bpm, with rates below 60 bpm referred to as bradycardia and rates above 100 bpm referred to as tachycardia. Note however that conditioned athletes often have resting heart rates below 60 bpm. Tour de France cyclist Lance Armstrong has a resting HR around 32 bpm, and it is not unusual for people doing regular exercise to get below 50 bpm. Other cyclists like Miguel Indurain and Alberto Contador have reported resting heart rates in the mid-20s.

Heart rate is measured by finding the pulse of the body. This pulse rate can be measured at any point on the body where an artery’s pulsation is transmitted to the surface - often as it is compressed against an underlying structure like bone - by pressuring it with the index and middle finger. The thumb should not be used for
measuring another person’s heart rate, as its strong pulse may interfere with discriminating the site of pulsation. (Barry, 1982).

1.18 IMPORTANCE OF RESTING HEART RATE

Here’s more to attaining optimum fitness than just exercising. In fact, to get an effective workout many things must be considered. One of the most important factors is your heart rate. Heart rate is the number of times your heart beats per minute. Reach what’s called your Target Heart Rate and the body becomes a calorie burning machine. Miss it and your workout may have been all for naught. Proper heart rate is so significant to fitness that trainers monitor it when helping clients achieve their fitness goals. It is a gauge of the body’s cardiovascular level. Much like how a car isn’t fully efficient until the engine has warmed up; your workout hasn’t fully begun until you’ve reached your target heart rate.

When at your target range, you get maximum benefit from your workout. Your body is in fat burning mode. In this zone you are effectively working out. Outside of it you are wasting your time. So how do you calculate your target heart rate? It varies by age. But generally speaking, a person’s Target Heart Rate is: 220 minus their age multiplied by .75 - or multiplied by .85 for increased intensity. (Barry, 1982).

1.19 VITAL CAPACITY

Vital capacity is the maximum amount of air a person can expel from the lungs after a maximum inspiration. It is equal to the inspiratory reserve volume plus the tidal volume plus the expiratory reserve volume.

A person’s vital capacity can be measured by a pyrometer which can be a wet (LMAO) or regular pyrometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. The unit that is used to determine this vital capacity is milliliters.
1.20 IMPORTANCE OF VITAL CAPACITY

- The vital capacity and the residual volume are two values that help physiologists determine the health of the pulmonary system.
- These quantities capture the ability of an individual to transport oxygen through the lungs to the rest of the body.
- Serious respiratory diseases can decrease the vital capacity to as low as 500 ml, barely enough to maintain life.
- The vital capacity is easily measured by taking a deep breath and expiring into a pyrometer.

1.21 VO₂ MAX

Fitness can be measured by the volume of oxygen you can consume while exercising at your maximum capacity. VO₂ max is the maximum amount of oxygen in milliliters, one can use in one minute per kilogram of body weight. Those who are fit have higher VO₂ max values and can exercise more intensely than those who are not as well conditioned. Numerous studies show that you can increase your VO₂ max by working out at an intensity that raises your heart rate to between 65 and 85% of its maximum for at least 20 minutes three to five times a week. A mean value of VO₂ max for male athletes is about 3.5 liters/minute and for female athletes it is about 2.7 liters/minute. (Swain, 1994).

1.22 IMPORTANCE OF VO₂ MAX

VO₂ max to its highest possible levels; increased volume and increased intensity. Studies show that sedentary people can improve VO₂ max by over twenty percent when they begin a running program of 25 miles per week. By increasing mileage to 50 miles per week, VO₂ max is improved a further ten percent. Unfortunately there are diminishing returns of VO₂ max increases with increased mileage, so drastic improvements will not occur indefinitely. Based on the available research, it seems that maximal VO₂ max gains are achieved with a weekly running volume of 60 to 90 miles. Although increases in weekly mileage have shown to be particularly effective at
increasing VO₂ max, it is important to remember that mileage should be increased gradually, with careful attention towards preventing over-training and injury. Also, VO₂ max improvements only occur if you are keeping running intensity the same as you increase your mileage. If you increase your mileage, but slow down your daily running pace, little improvement will occur in VO₂ max.

1.23 RBC COUNT (RED BLOOD CELL COUNT)

Red Blood Cells carry oxygen to all parts of the body through hemoglobin. Red Blood Cells (RBCs) are the most numerous cells in the blood and give blood its characteristic color. They are responsible for normal oxygen transport from the lungs to the rest of the body. Since they lack the machinery for cell division (in particular, they lack a nucleus), they are incapable of dividing or repairing themselves and must be continually produced and removed. Almost all vertebrates have evolved elaborate systems for controlling the production and removal of RBCs, and most of hematology is devoted to the study of RBCs in health and disease.

1.24 IMPORTANCE OF RBC COUNT (Red Blood Cell Count)

Red blood cells perform the most important blood duty. A single drop of blood contains millions of red blood cells which are constantly traveling through your body delivering oxygen and removing waste. If they weren’t, your body would slowly die.

Red blood cells are red only because they contain protein chemical called hemoglobin which is bright red in color. Hemoglobin contains the element Iron, making it an excellent vehicle for transporting oxygen and carbon dioxide. As blood passes through the lungs, oxygen molecules attach to the hemoglobin. As the blood passes through the body’s tissue, the hemoglobin releases the oxygen to the cells. The empty hemoglobin molecules then bond with the tissue’s carbon dioxide or other waste gases, transporting it away.

Over time, the red blood cells get worn out and eventually die. The average life cycle of a red blood cell is 120 days. Your bones are continually producing new blood
cells, replenishing your supply. The blood itself, however, is re-circulated throughout your body, not being remade all of the time.

Since the human body is continually making more blood, it is safe for healthy adults to donate blood. The blood is then stored for use in emergency situations. Initially after giving blood, the donor may feel some momentary lightheadedness due to the loss of oxygen-rich red blood cells and blood sugar. The body quickly stabilizes itself. ([http://www.fi.edu/learn/heart/blood/red.html](http://www.fi.edu/learn/heart/blood/red.html), March, 2011).

1.25 WBC COUNT (WHITE BLOOD CELL COUNT)

A type of blood cell functions as a defender against bacteria, viruses, fungi, and other foreign invaders. They are a vital component to the immune system. A reduced amount of white blood cells (WBC) in the body makes a person more susceptible to infection. This can be a common side effect of chemotherapy. People who have a low WBC count need to be especially cautious to avoid infection. A high amount of white blood cells in the body can indicate the presence of an infection or also a blood disease, like leukemia. ([Lisa Fayed, 2009](http://www.fi.edu/learn/heart/blood/red.html))

1.26 IMPORTANCE OF WBC COUNT (White Blood Cell Count)

WBCs play a vital role in defending us against various infections and foreign particles. They are produced from hematopoietic stem cells, which are multi potent cells located in the bone marrow, and found all over the body. There are different types of white blood cells, each of which is assigned a particular function:

- Neutrophils - Defend our body against bacteria
- Eosinophil’s - Defend our body against parasites
- Basophils - Function in allergic reactions
- Monocytes - Kill bacteria and destroy damaged cells
- Lymphocytes - Play an important role in producing antibodies

The importance of white blood cells in our body can be realized by the simple fact that even a common cold can turn lead to fatal diseases like pneumonia for a person with

1.27 PLATELETS COUNT

The main function of platelets, or thrombocytes, is to stop the loss of blood from wounds (homeostasis). To this purpose, they aggregate and release factors which promote the blood coagulation. Among them, there are the serotonin which reduce the diameter of lessened vessels and slow down the hematic flux, the fibrin which trap cells and forms the clotting. Even if platelet appears roundish in shape, they are not real cells. In the smears stained by Giemsa, they have an intense purple color. Their diameter is 2-3 µm about; hence they are much smaller than erythrocytes. Their density in the blood is 200000-300000 /mm³.

1.28 IMPORTANCE OF PLATELETS COUNT

Platelets are specialized cells that are important components of blood. The primary function of platelets is to prevent excessive internal or external bleeding after an injury. Platelets help to temporarily seal off the site of a wound by breaking away from other platelets and sticking to the exposed, damaged edges of blood vessels. The process by which platelets stop adhere to vessel walls to stop bleeding is known as hemostasis. When an individual experiences an abnormally high or low platelet count due to one of several blood disorders, emergency conditions such as hemorrhaging or excessive clotting can result.

Compared to red and white blood cells, platelets are very small and light. When blood flows through a vessel, the light weight platelets are forced to the perimeter of the blood stream, where they surround the other blood cells and make contact with the vessel walls. Normally, platelets slide easily along these walls, which are known as the endothelium. When a cut, puncture, scrape, or internal injury causes the endothelium to tear apart, however, the platelets work to clot the blood and prevent it from continually exiting the wound. (http://www.wisegeek.com, March, 2011).
**1.29 BIO-CHEMICAL VARIABLE**

Biochemistry deals with the chemistry of living organism. Protoplasm is the basis of all forms of life. In its different characteristics to the chemical composition, organization and chemical process in these many different forms of protoplasm. *(A.C. Deb, 1990)*.

**1.30 BLOOD GLUCOSE**

The main sugar that the body makes from the food in the diet is Glucose. It is carried through the bloodstream to provide energy to all cells in the body. Cells cannot use glucose without the help of insulin.

Glucose is a simple sugar (a monosaccharide). The body produces it from protein, fat and, in largest part, carbohydrate. Ingested glucose is absorbed directly into the blood from the intestine and results in a rapid increase in blood glucose. Glucose is also known as dextrose. *(Jennifer Money, 2004)*.

**1.31 IMPORTANCE OF BLOOD GLUCOSE**

Glucose is better known to many as sugar. Maintaining a normal level of blood glucose is important for brain function as well as providing the body with energy and keeping metabolism up. Glucose comes from carbohydrates such as bread, pasta, cereal and fruit. During digestion carbohydrates are broken down in the stomach into glucose.

Blood sugar levels can depend on (1) overeating (2) unhealthy eating (3) lack of exercise (4) stress (5) medication and (6) by disease or infection. Now you’re probably thinking, “What’s the best way to combat all that?” A healthy diet and exercise will help you maintain normal blood sugar levels. Choosing the right foods to eat and exercising regularly will balance your blood sugar levels so they don’t skyrocket on you. This doesn’t mean you can’t enjoy all the foods you’ve loved your whole life. There are natural and safe substitutes that will allow you to keep the “sweet” in your diet. *(Jennifer Money, 2004)*.
1.32 BIOLOGICAL IMPORTANCE OF LIPIDS

- In the body, fat serves as an efficient source of energy when stored in adipose tissue.
- It serves as an insulating material in the subcutaneous tissues and around certain organs.
- The phosphatides of blood platelets are involved in the production of thromboplastic activity in the early stages of blood clotting.

1.33 IMPORTANCE OF CHOLESTEROL

“Raising good cholesterol levels demonstrated a nearly first order relationship with event risk reduction, meaning that risk of heart attack fell immediately and continuously with a steady increase in HDL-C level,” Kara’s concluded. “The LDL-C showed a ‘threshold effect,’ where lipid levels had to be improved considerably before having a large impact on risk reduction”. (Kevin, 1991).

1.34 IMPORTANCE OF LIPOPROTEINS

- To transport and deliver the lipids to tissues.
- Lipoproteins (combinations of fat and protein) and glycoprotein (fat and carbohydrate) are essential for maintaining cellular integrity. (David, 1998).

1.35 IMPORTANCE OF HIGH-DENSITY LIPOPROTEIN (HDL)

Also known as “good” cholesterol, HDLs are large, dense, protein-fat particles that circulate in the blood picking up already used and unused cholesterol and taking them back to the liver as part of a recycling process. Higher levels of HDLs are associated with a lower risk of cardiovascular disease because the cholesterol is cleared more readily from the blood.
1.36 IMPORTANCE OF LOW-DENSITY LIPOPROTEIN (LDL)

Low-Density Lipoprotein is also known as “bad” cholesterol, LDLs are large, dense, protein-fat particles composed of a moderate proportion of protein and a high proportion of cholesterol. Higher levels of LDLs are associated with a greater risk of cardiovascular disease. (Robert, 1997).

1.37 REASON FOR THE SELECTION OF THE TOPIC

- There is a very lesser research is taking place in the field of yoga. Though the number of articles has been under taken on motor ability and physiological variables but no attempts has been made to find out the effect of hematological and bio-chemical variables among college men students.
- Yoga Practices are much needed techniques for the all-round development of the college men students.

1.38 OBJECTIVES OF THE STUDY

- To find out the influence of two different yogic practices namely Swami Satyananda Saraswati and Swami Vishnudevananda on motor ability, physiological, hematological and bio-chemical variables among college men students.
- To find out the best technique of yogic practices to improve the selected dependent variables among college men students.

1.39 STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of varied packages of yogic practices on selected motor ability, physiological, hematological and bio-chemical variables among college men students.
1.40 HYPOTHESIS

It was hypothesized that

1. There would be significant improvement difference in the selected motor ability, physiological, hematological and bio-chemical variables due to the influence of varied packages of yogic practices than the control group among college men students.

2. There would be significant improvement difference between the (varied packages of yogic practices) Satyananda Saraswati yogic practices and Swami Vishnudevananda yogic practices group on selected motor ability, physiological, hematological and bio-chemical variables among college men students.

1.41 SIGNIFICANCE OF THE STUDY

Yoga is very useful for stress reduction, to improve motivation and also for the reduction of sports competitive anxiety. Yoga has some effects on the Physiological factors of the person.

College students are the future citizens of any country. Their excellence in all fields of life is the need of the hour.

Yoga practice is very essential as because they remove not only all kind of Problems but also a complete transformation of man.

1. This study may be helpful to identify the suitable packages of yogic practices to improve the motor ability, physiological, Hematological and Bio-Chemical variables among college men students.

2. This study will create significant health awareness among people especially college men students.

3. This study would help many to avoid medicine to make themselves fit and to maintain one’s own physical health.
4. This study may help the coaches and trainers to include appropriate yogic practice for the sports men.

5. This study may help to formulate a suitable yogic practice for college men students.

1.42 DELIMITATIONS

1. The subjects of this study were confined to 90 college men students from Rajapalayam Raju’s College, Rajapalayam Tamilnadu during the academic year 2010 – 2011.

2. The age of the subjects ranged between 18 and 25 years.

3. The selected subjects were divided into three equal groups namely Satyananda Saraswati and Swami Vishnudevananda yogic practices and control groups.

4. The duration of the training period was restricted to twelve weeks and the number of sessions per week was confined to five.

5. The Satyananda Saraswati and Swami Vishnudevananda yogic practices training were considered as independent variables.

6. The criterion variable selected for this study was confined to the following:

1.42.1 DEPENDENT VARIABLES

a. MOTOR ABILITY VARIABLES

   i. Flexibility
   ii. Muscular Strength
   iii. Cardio Vascular Endurance.

b. PHYSIOLOGICAL VARIABLES

   i. Resting Pulse Rate
   ii. Vital Capacity
   iii. VO₂ Max.
c. HEMATOLOGICAL VARIABLES

i. RBC Count (Red Blood Count)
ii. WBC Count (White Blood Cell Count)
iii. Platelets Count.

d. BIO-CHEMICAL VARIABLES

i. Blood Sugar
ii. High Density Lipoprotein (HDL)
iii. Low Density Lipoprotein (LDL)

1.42.2 INDEPENDENT VARIABLES

(i) Experimental Yogic Practices - Swami Satyananda Saraswati Yogic Practices
(ii) Experimental Yogic Practices - Swami Vishnudevananda Yogic Practices
(iii) Control Group - No training

1.43 LIMITATIONS

1. Certain factors like life style, body structure, personal habits, family heredity, and motivational factors were not taken into consideration in this study.

2. Certain factors like diet, environmental and climatic conditions, and economical background were not taken into consideration. The day to day routine works were not controlled.

3. The attitude of the subjects and effort put in by them in performing the test were not controlled.

1.44 MEANING AND DEFINITION OF THE TERMS

1.44.1 TRAINING

Training is a pedagogical process, based on scientific principles, aiming at preparing sportsmen for higher performance in sports competitions. (Green, 1978).
1.44.2 YOGA

The word yoga is derived from the Sanskrit root yuj meaning to bind, join, attach and yoke, to direct and concentrate one’s attention on, to use and apply. (Iyenkar, 1995).

1.44.3 EXERCISE

Exercise is physical activity that is planned, structured, and repetitive for the purpose of conditioning the body. Exercise consists of cardiovascular conditioning, strength and resistance training, and flexibility. (Robert, 1997).

1.44.4 FLEXIBILITY

Flexibility is the ability of an individual to move the body and its parts through a wide range of motion without strain to the articulations and muscle attachment. (Johnson and Nelson, 1984).

Flexibility is defined as the range of movement available in a joint or group of joints. (Alter, 2004).

Flexibility is the ability to execute movements with greater range. (Singh, 1991).

1.44.5 MUSCULAR STRENGTH

Muscular strength is defined as the maximum amount of force a muscle can produce in a single effort. It is generally measured by a single maximal contraction. (Heyward 2002).

1.44.6 CARDIO VASCULAR ENDURANCE

Cardio vascular endurance is the ability of the cardio vascular system to deliver sufficient blood to the muscles to sustain intense activity for any period of time.

Cardio vascular endurance is the ability of the heart, lungs and blood vessels to deliver oxygen to working muscles and tissues, as well as the ability of those muscles and tissues to utilize that oxygen. (Heyward, 2002).
1.4.4.7 RESTING HEART RATE

The number of the heart rate frequency is defined as the frequency of heartbeats in one minute when a player is in resting condition. (Barry, 1982).

1.4.4.8 VITAL CAPACITY

The volume of air can be expelled by a forced expiration after a forced inspiration. (Murugesh, 1991).

1.4.4.9 VO₂ MAX

VO₂ max is the maximal oxygen uptake or the maximum volume of oxygen that can be utilized in one minute during maximal or exhaustive exercise. It is measured as milliliters of oxygen used in one minute per kilogram of body weight. (Elizabeth Quinn, 1998).

1.4.4.10 RED BLOOD CELL COUNT

RBC count is a blood test that tells how many red blood cells (RBCs) you have. RBCs contain hemoglobin, which carries oxygen. How much oxygen your body tissues get depends on how many RBCs you have and how well they work. (Zuckerman, 2007).

1.4.4.11 WHITE BLOOD CELL COUNT

WBC count is a blood test to measure the number of white blood cells (WBCs). White Blood cells help fight infections. They are also called leukocytes. There are five major types of white blood cells: Basophils, Eosinophil’s, Lymphocytes (T cells and B cells). (Bagby, 2007).

1.4.4.12 PLATELET COUNT

A platelet count is a test to measure how many platelets you have in your blood. Platelets help the blood clot. They are smaller than red or white blood cells. (McMillan, 2007).
1.44.13 BLOOD SUGAR

A sugar manufactured by the body from carbohydrates which serves as the body’s main source of fuel. (Scott, 2008).

Glucose is a monosaccharide (simple sugar) that is the basic form of energy for the body. It is made up of carbon, oxygen, and hydrogen and is essential for cellular function. Normal glucose levels should be between 80 and 150 - depending on the time of day. Hypoglycemia occurs when glucose levels are below 80. (Nicole Galan, 2010).

1.44.14 HIGH DENSITY LIPOPROTEIN (HDL)

High density lipoprotein is small containers made of fat and protein that carry cholesterol to the liver where it is removed from the body with bile. HDL is also called good cholesterol because having a high level of HDL may decrease your risk of cardiovascular disease. LDL cholesterol is the bad cholesterol that increases your risk of cardiovascular disease. (Jegtvig, 2008).

1.44.15 LOW DENSITY LIPOPROTEIN (LDL)

Low density lipoproteins, or LDL, are a combination of cholesterol and a protein that circulate through the body and carry cholesterol from the liver and small intestine to other tissues and cells in the body that need it. It is also referred to as the “bad cholesterol”. (Moll, 2008).