

CHAPTER I

INTRODUCTION

“Our modern life-style fosters unfitness.”

Enhancement of performance, yoga is different from other modalities, as so much of the improvement is subtle, and very difficult to test. Yoga optimizes existing fitness regimes both by improving balance, mobility, and flexibility, giving the athlete a greater maximum workload, but also by engaging the mind in a different way, so that the athlete self-regulates a workout to get closer to the edge of the performance envelope. Through injury reduction, it makes financial sense for professional clubs at pretty much any level. Everyday more athletes are learning the multiple benefits and increase in their individual performance by adding yoga to their training. Cycling, Golf, Running, Swimming, Basketball, Football, Tennis...It's hard to find a sport for which yoga hasn't been suggested as a performance or injury-prevention aid.

Yoga will enhance a soccer player's overall performance. Soccer players can benefit from yoga to help improve flexibility, strength and endurance. Soccer players who practice yoga are more likely to be more focused and less likely to be injured during a game. Yoga loosens and prepares your muscles for the strenuous exercise of a soccer game, which can prevent muscle strains and joint stress. The triangle pose stretches players' leg, groin, and shoulder and chest muscles. This yoga pose also strengthens players' knees, ankles and oblique abdominal muscles. The calf muscles are also stretched and strengthened. Soccer players will benefit from strengthening and stretching all the muscles of the lower body. Stand up straight and step forward with the right leg until players feet are about 4 feet apart. Raise one's arms and extend them out to each side of the body. Turn the right foot in 45-degrees and turn the left foot out 90-degrees. Exhale and turn one's torso toward the right. Breathe in. When one exhale, turn one's body farther to the right. Reach down with the left hand and upward with one's right hand. Place one's left hand on the floor outside of one's right foot and look upward toward the ceiling. Hold this pose for 30 seconds to one minute and then repeat on the other side. Soccer players can experience stronger more flexible hip flexors and quadriceps by practicing the pigeon pose. Position one's body on one's hands and knees. Bring one's right knee forward

behind one's right hand. Rotate one's thigh until one's right foot is ahead of one's left knee. Continue to rotate one's hip until the side of one's right leg is flat on the floor with one's knee bent at a 45-degree angle in front of one's body. Slowly stretch one's left leg out behind one's body. Point one's toes so that the top of one's foot is on the floor. Press one's left leg against the floor until one's thigh, knee and shin are touching the floor. Flex one's right foot so that the top of one's foot is perpendicular to one's right shin. Pull your thighs inward toward each other until one's pelvis lifts upward. Try to keep one's pelvis level. Hold the pigeon position for five deep breaths and then switch sides and repeat the exercise.

The benefits of yoga for women soccer players are numerous and include increased speed, agility and flexibility. When choosing yoga poses that complement one's soccer training focus on poses that target the leg muscles specifically. In addition to leg-specific poses, practice several full-body poses that bring strength, balance and flexibility to entire the body. Practice yoga poses that stretch the thigh muscles -- also known as the quadriceps. Strong, flexible quadriceps can help you run faster and get to the ball before one's opponent does. Some yoga poses that stretch the quadriceps are hero pose, low lunge and chair pose. To perform chair pose, stand up straight with one's legs and feet together. Bend one's knees and sit back as if one were about to sit on an invisible chair. Extend one's arms toward the sky, inner arms pressing close to one's ears and palms facing each other. Roll one's shoulders back and lift one's chest. Bring more flexibility to the entire body with full-body yoga stretches. Stretches like downward-facing dog, warrior I and warrior II are great poses to perform after a soccer practice or game. Stretching after exercise helps to decrease injury and delayed onset muscle soreness. Plyometric exercises improve soccer players' explosive speed, power and agility. One can bring plyometric exercises to one's yoga mat by jumping into and out of various yoga poses. In a flowing vinyasa-style yoga class, one's teacher might instruct one to jump from downward-facing dog to the front of one's mat in a forward fold. To jump safely in yoga class, bend one's knees and look forward to one's hands. As one jump, try to land as lightly as possible at the top of one's mat.

Soccer is popular all over the world, and a range of people play it. Yoga is, of course, a wonderful compliment to soccer players of any level. In addition to the exercises for runners, the main area of concern is the knee joint. While kicking, which

can be a sudden, jerky movement, the knee is rotated outward while also bearing weight. This can cause tears in the meniscus (the two pads of cartilage which disperse friction in the knee joint between the lower leg and the thigh). A torn meniscus can cause great pain and limited range of motion. Strengthening the knee joint is paramount to preventing injury. All standing poses help accomplish this. Depending on the pose, different parts of the joint are toned, realigned or massaged. Proper alignment is extremely important, otherwise, more strain could occur. This is why practicing under the guidance of a good yoga instructor is so invaluable. Inversions can be used to teach proper alignment of the knees and also strengthen the muscles. Viparita Karani followed by sputa virasana can be very restful for the legs. Poses such as Virasana and Padmasana tone the cartilage and make the knees supple (*Nov.2012, <http://tampayoga.wordpress.com/category/stretching/>*)

1.1. Tai Chi Motions

Tai Chi movements are characteristically short and compact. The Sun T'ai Chi Research Foundation explains that "stances are upright and natural, with the feet normally being no wider than shoulder width." These movements also incorporate "unique 'open-close' hand movements" that help "to concentrate chi in the Dan tien (the area of abdomen just below the navel), the front of the torso, and especially in the palms of the hands". Most forms of T'ai Chi actually look like a classical dance, soft and flowing, but precise and strong. It must be taught structurally, step by step, as the movements become one with the body. The required stances are natural and the movements are short and compact, therefore the exercise should remain unstressful. T'ai Chi instructor, Vincent Li says that the actions obey the definition of the theory of T'ai Chi -- "The unbending breaks while the yielding survives" (**Hasel, Sep, 2012**).

1.2.The Physical Benefits of Tai Chi

T'ai Chi uses one's internal energy, and channels it to be readily available through internal power. Physically, this internal exercise works muscles and joints to unify breathing and thus "improves the circulation of the blood and the lymphatic gland," increases the power of the immune system, and "balances regulatory functions." T'ai Chi concentrates on harmonizing muscles and blood flow to the heart, due to deep breathing, which in turn allows a "greater amount of oxygen [to be] available for consumption." This circulation is beneficial to the heart as it prevents

many "diseases of the heart and the viscera and inflexibility of the cardiac muscle". "Application of T'ai Chi Chuan", Vincent Li says that T'ai Chi "serves the purposes of strengthening the central nervous system, improving the blood circulation, increasing nourishment to the heart and the viscera and promoting better digestion;" this means it also helps prevent the process of substitution and the contraction of diseases prone to the aged. The H. Won T'ai Chi Institute believes that T'ai Chi can also cure hypertension, ulcers, and other gastrointestinal disorders and complaints. The benefits of T'ai Chi are that it "offers a balanced drill to the muscles and joints of the various parts of the body in the way of complicated actions which, in turn, are regulated by the timing of deep breathing and the movement of the diaphragm"(Hasel, Sep, 2012).

1.3. Physical vs. Mental Benefits of Tai Chi

T'ai Chi is a physical and cognitive exercise, and participants begin to develop emotionally, mentally, and spiritually. Psychologically, this exercise increases communication between the body and the mind and enables one to deal with others more effectively. It reduces stress and creates a calmness and confidence that is displayed throughout everyday life. Relaxation and a feeling of well being are among the first noticeable differences in a T'ai Chi student. This sensitivity should increase as the student becomes more aware of "where tension is held and how to relax and soften". As a form of meditation, T'ai Chi emphasizes complete relaxation of the body and mind. In his T'ai Chi Ch'uan overview, Ron Perfetti says that "as both healing art and martial art, this emphasis on the internal aspect of the study is primary". The focus is more on the "mental and energetic levels," rather than the physical level. Traditional Chinese Medicine believes that being "weak-minded" inhibits anyone from achieving anything; therefore strengthening one's mind is a primary focus in T'ai Chi. There are few scientific studies on the effectiveness of T'ai Chi for improving one's way of life, reducing stress, or increasing energy; however, two studies are found on the Internet about reducing the number of falls in elderly people through T'ai Chi training. The two studies were sponsored by the National Institute on Aging and "are the first involoving. Tai Chi to be reported by scientists in a special frailty reduction program" (Hasel, Sep, 2012).

Specific Benefits of Tai Chi- Joint Problems

T'ai Chi has different methods for curing many different ailments and/or problems. Joint problems are usually very receptive to T'ai Chi training. Arthritis and rheumatism are common ailments of T'ai Chi students before they begin instruction. However, this exercise is most beneficial as a preventative therapy. Ron Perfetti explains that T'ai Chi is emphatically joints oriented [and] the basic idea is that the joints govern movement in the body, both physical and energetic. By experiencing T'ai Chi, all the joints of the body, as well as muscles, profit. T'ai Chi helps arthritis and rheumatism by the improvement of circulation due to a strengthening and expanding of range of movement of the joints (**Hasel, Sep, 2012**).

Back Problems

Ron Perfetti also says that some of the greatest responses he has seen to T'ai Chi have been from people suffering from back problems. The study of T'ai Chi stresses the importance of moving the trunk as a whole; therefore it helps to break the habit of twisting one's back, which reduces tension and compression in the discs and vertebra. Moving from the pelvis and allowing the legs to hold more body weight reduces much of the discomfort in the back. This quality of movement, which enhances circulation throughout the body, is also advantageous for increasing blood circulation throughout the veins. Traditional Chinese Medicine evaluates one's health "in term's of quality and amount of circulation; the better one's circulation, the better one's health" (**Hasel, Sep, 2012**).

Stress Reduction

Another very useful aspect of T'ai Chi is its aid in the reduction of stress. Stress affects people in many different ways; however, it is usually expressed through stiffness and/or pain in the body. Ron Perfetti relates that "anxiety, worry, fear, and a host of related negative mental states can and do cause serious physical symptoms including increased blood pressure, impaired organ functions, and accumulated tension in the muscles and joints which can lead to arthritis and other joint afflictions". T'ai Chi's entire body experience commands relaxation and a cleared, focused mind. Through deep breathing, proper posture, and muscle relaxation, this exercise is calming and focuses on connecting one with one's body, while stress tension and feelings are overcome (**Hasel, Sep, 2012**).

1.4. Health Benefits of Tai Chi

Many health benefits of tai chi are now well documented. Research now shows several health benefits of regular practice tai chi practice: Improves cardiovascular function, Reduces blood pressure and cholesterol, Improves balance and reduces falls, Is safe for arthritis sufferers, Improves symptoms of some types of arthritis, Slows the rate of Osteoporosis, Reduces risks of injury, Aids with asthma and other breathing problems, Improves immune function, Improves flexibility and strength, Improves endurance, Reverses symptoms of ageing and Can aid in weight loss (**Tai chee chwan, Sep, 2012**).

1.5. Tai Chi Training and Sports Performance

The nature of Tai Chi makes it possible to practice it every day, without the need for the longer recovery time necessary for other exercises and sports. Not only that, tai chi can aid in reducing the recovery time necessary for athletes of other sports. The nature of the movements seems to help reduce inflammation, improve the circulation of blood and lymph, massage the muscles and internal organs, and aid with natural myofascial release. Tai Chi has been shown to improve athletic performance in marathon runners, triathletes, soccer players, martial artists, and other athletes. Some studies show a 15 - 20 minute session of tai chi immediately increasing weight lifters' one rep maximums by up to 25 per cent. Teams from hockey, rugby, football, and other sports are starting to incorporate tai chi principles to improve results. Elite runners are using tai chi principles to improve their times (**Tai chee chwan, Sep, 2012**).

A three-month intervention of TC exercise was conducted with 30 healthy college students enrolled in a university class. TC was practiced twice a week for one hour over the course of three months. Multidimensional physical (PHD) and mental health (MHD) scores were evaluated with the SF-36v2 health survey questionnaire before and after the intervention. The outcome showed that three of the four mental health variables significantly improved after the TC intervention. Improvement was reported in vitality (representing a sense of energy and freedom from fatigue), role mental/emotion function (representing the limitations in usual home or work activities because of emotional problems), and mental health. Additionally, the overall mental health dimension, which is a combination of the four mental health variables, also

significantly improved. These results suggest that a TC program can improve the physical and mental health of college students. TC provides positive psychological benefits to its practitioners including children, teenagers, young adults, older adults, and those with a variety of chronic health conditions. These psychological benefits are reported to include reductions in mood disturbances, sadness, anger, and confusion, as well as improvements in sleep quality, mood states, happiness and overall psychological well-being. (Wang, et al., 2004).

1.6. Yoga – A Brief Overview

Yoga is an art of life. It is a science of life; it is a kind of exercise to attain spiritual growth. It brings about a holistic development in man. It paves the way for self confidence and principled living. It is the science of controlling the mind which is responsible for one's action. Once a person controls his mind, and his five senses he will be free of all distractions and hence make him more productive. Though it is not a magic pill, consistent and systematic practice of his art will make man more healthy and agile – yoga is truly a boon from our ancestors.

Yoga is a systematic practice for the realization of higher perceptions. It is the science of life and an ideal way of living, providing rhythm to the body, melody to the mind, harmony to the soul and thereby symphony to life. In short, yoga is a way to achieve total health, peace, bliss and wisdom. Physical, mental and spiritual aspects of yoga help to make one's life purposeful, useful and noble. Thus yoga is an art, science and philosophy, which influence the life of man at each level. Therefore, the effects of yoga must be felt in every movement of our day-to-day lives.

Yoga, which means discipline, was developed in the year 300 by an Indian Hindu named Patanjali. It is an ancient Indian science which teaches man how to live in unity within himself and with those around him. It is recognized as one of the most important and valuable heritages of India. Its purpose is to stretch the muscles, strengthen the body and increase concentration. It can also help you relax, if you have trouble doing that. No wonder this ancient discipline has become popular among modern entertainers and athletes. Depending on who practices it, yoga can be simply a set of exercises or a total way of life. It has been growing in popularity with unbelievable rapidity over the years. Today the whole world is looking towards yoga for answers to the various problems the modern man is facing.

Yoga is a way of life. People who practice yoga are called “yogis”. They try to use this discipline to reach a high level of consciousness. It is an integrated system of education for the body, mind and inner spirit. This art of right living was perfected and practiced in India thousands of years ago but, as yoga deals with universal truths, its teachings are valid today as they were in the ancient times. Yoga is a practical aid, does not belong to one religion and its techniques could be practiced by the Buddhists, Jews, Christians, Muslims, Hindus and the Atheists alike. Yoga is union with all¹. It brings peace to the human being by physical practices with or without a toner on spiritualism. They respect certain abstentions (things not to do), such as not lying, stealing, being greedy or harming other people. They also practice certain observances (things to do), such as being clean, content, self-controlled, studious and devoted.

As we live in the age of modern science and technology, our lifestyle has become very fast. It is also becoming very hard and difficult to live a natural and normal life because of the changing scenario of the world. The very air is becoming unfit for human consumption. Our cities are growing noisier, dirtier and congested. All these do create tension. The mind is always under strain due to various social evils. When we are under stress, our digestion is not proper and we may suffer from some fairly serious ailments like Asthma and Spondylitis etc., and yoga comes to our rescue at this juncture.

In the treatment of almost all the chronic disorders and ailments, yoga can assist in a big way, when practiced along with other streams of treatment. However it is not a panacea for all health problems. It has its own limitations. At the same time, it cannot cure the acute infective disorders of traumas. Obviously it is not possible to carry out surgical operations with its help. But it can definitely help in the post operational therapy, under able guidance.

The key to the whole problem is “self help”, first of all, everyday one should learn how to release and remain released. Learn how to breath properly, reduce weight if need be, and take up walking regularly as an exercise. We cannot totally avoid being ill and we have our “off days” once in a while, but through yoga we can become resilient. We can acquire the energy to overcome the pressures and survive in the stressful conditions. Therefore, yoga teaches us how to be one with the world by being one with ourselves.

1.7. Concept of Yoga

Yoga is an ancient discipline. It is recognized as one of the most important and valuable gifts of our culture. The modern era, with the development of science and technology provides man more comforts for his basic necessities. But with these comforts man faces lot of problems, which cannot be solved only by the above facilities. Today the world is looking for solutions to solve the menacing problems of unhappiness, restlessness, emotional imbalance, hyper activity, tension, stress, etc.

Now the time has come to think of change in attitude and take a new dimension to solve the problems. There comes importance of yoga and spiritual lore. Yoga is the gift of our rishi culture, is a science and art of pure life style. Yoga offers man a conscious process to solve his problems. Yoga helps the man to evoke the hidden potentialities of man in a systematic and scientific way by which man becomes a fuller individual. All his faculties-physical, mental, intellectual and emotional-develop in a harmonious and integrated fashion to meet the all-round challenge at the modern technological era, with its hectic speed. The specialty of the yogic processes is that the faculties get sharpened in tune with the spiritual progress of man.

1.8. Yoga as a Science and Art

Yoga, a conscious and systematic process to accelerate the growth of human mind, is now emerging as a new tool in this search. Yoga, in general, and meditation, in particular, is providing man a means to reach the subtle layers of mind. These creative and critical faculties of mind lie hidden in these higher states of consciousness. Thus, the foundation of arts and science are now being found in deeper states of our consciousness. Hence, yoga has brought a breakthrough in unraveling the hidden dimensions of mind. All those seeking to develop greater critical and creative faculties now have yoga as a new tool and millions of people all over the world have taken to the study and practice of yoga and are reaping its benefits.

Yoga improves posture, increases the intake of oxygen, and enhances the functioning of the respiratory, digestive, endocrine, and reproductive and excretory systems. Its effects on the emotions are equally beneficial by calming the mind, attuning us to the environment and diminishing insomnia caused by mental restlessness. Yoga is highly recommended for people in competitive, stressful

working environments, for those who suffer from headaches, back and shoulder aches, allergies, and asthma. Yoga also cures behavioral disorder, nervous breakdown and manic depression. The regular practice of yoga helps us to accept whatever physical or mental conditions we might be suffering from by increasing our immediate sense of well-being, concentration, and calmness. Much healing can be done, but it takes practice and consistency.

Yoga works on a psychological level too. In a yoga position, one should concentrate on a total awareness of our energy and how it flows. One should learn how body and mind works together. Almost all exercises can be beneficial depending on the intent and body condition; practicing yoga ultimately leads towards long-term health and well-being.

1.9. Health of body and mind

It is impossible to work actively in life with an unhealthy mind and body. This applies to work and play as well as to spiritual aspiration. The fundamental requirement is the healthiest possible mind and body. The ancient yogis realized these thousands of years ago and for this reason developed the system of asanas. The asanas were tested thoroughly by the personal experience of these pioneers. Asanas evolved slowly through practice, and because of this, they have withstood the test of time. The body and mind of man thousands of years ago was little different to the mind and body of man today. As such asanas are as useful in the present age as they were to the ancient originators. Many modern systems, in all fields of activity, are often based only on a few years experience; they rarely last for very long periods and are usually modified because of inadequacies in their makeup. Asanas, on the other hand, are a well-tested system for attaining mental and physical health.

The prime aim of asanas is to help us tread the path to higher consciousness so we can begin to understand and know our relationship with existence. We cannot even consider attaining higher awareness if we are ill with disease, aches and pains or mental depression. Therefore, the initial purpose of practicing asanas is to eliminate these afflictions and disturbances. Asanas loosen up the joints of the body, stretch and tone the muscles and various parts of the body. They also harmonize the nervous system and with a gentle massage they improve the functioning of all the internal organs such as the heart, lungs, abdominal organs,

endocrinal glands, blood vessels and so on. It slowly and surely leads to the best possible physical health.

1.10. Asanas

The meaning of Sanskrit word asana is 'a steady and comfortable posture'. It is often believed that asanas are physical exercises. And of course this is true; they do have a profound influence on the body, but this does not convey their full significance. Each person is made up of three aspects: body, mind and consciousness, which merge together to constitute our whole being. Asanas aim at influencing all these three aspects and molding and yoking them into one harmonious whole.

As such one should try to think of asanas not as physical poses but as states of being. Correct performance of asanas requires participation of one's whole being, with awareness of oneself in relation to the physical position and movement, the breath, relaxation of the muscles and so forth. If asanas were only physical exercises then it would be quite acceptable to think about work, breakfast or whatever while performing them. But this is not the case. The practice of asanas requires active involvement of one's entire being as fully as possible.

1.11. Purpose of Yoga and Asanas

Yoga has been recommended as an adjunct to psychotherapy and standard medical treatments for a number of reasons. Its integration of the mental, physical, and spiritual dimensions of human life is helpful to patients struggling with distorted cognitions or pain syndromes. The stretching, bending, and balancing involved in the asanas (physical postures that are part of a yoga practice) help to align the head and spinal column; stimulate the circulatory system, endocrine glands, and other organs; and keep muscles and joints strong and flexible. Yoga programs have been shown to reduce the risk of heart disease by lowering blood pressure and anxiety levels. The breath control exercises, known as pranayama, emphasize slow and deep abdominal breathing. They benefit the respiratory system, help to induce a sense of relaxation, and are useful in pain management. The meditation that is an integral part of classical yoga practice has been shown to strengthen the human immune system. Although Western medical researchers have been studying yoga only since the 1970s, clinical trials in the United States have demonstrated its effectiveness in treating asthma,

osteoarthritis, heart disease, stress-related illnesses, high blood pressure, anxiety, and mood disorders. Other reports indicate that yoga merits further research in the treatment of obsessive-compulsive disorder (OCD) and substance abuse. Studies done in Germany have focused on the psychological benefits of yoga. One clinical trial done in 1994 at the University of Wurzburg found that the volunteer subjects who had practiced yoga scored higher in life satisfaction, with lower levels of irritability and psychosomatic complaints, than the control group.

One of the advantages of yoga as a complementary therapy is its adaptability to patients with a wide variety of physical and psychiatric conditions. There are a number of different schools of yoga, even within a particular school or tradition, the asanas and breathing exercises can be tailored to the patient's needs. One can find special yoga courses for children; for people over 50; for people with fibromyalgia, arthritis, or back problems; for cancer patients; and for people struggling with weight. Although most people who take up yoga attend classes, it is possible to learn the basic postures and breathing techniques at home from beginners' manuals or videotapes. Patients who feel self-conscious about exercising in the presence of others may find yoga appealing for this reason. The American Yoga Association has produced a manual and videotape for beginners, as well as a book called *The American Yoga Association's Easy Does It Yoga* for persons with physical limitations. In addition, yoga does not require expensive equipment or special courts, tracks, or playing fields. An area of floor space about six feet by eight feet, a so-called "sticky mat" to keep the feet from slipping, and loose clothing that allows the wearer to move freely are all that is needed.

1.12. Physiological Importance of yoga

Yoga is sometimes referred to as the science of religion with the view that the human body. 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 body." (Sturgess) 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. In yoga,

amongst other practices, focusing on a particular point is recommended in order to improve concentration.

The aim of a practitioner is to relax and to gain optimum physical benefit, it is necessary to concentrate the mind on a specific region of the body, or on the breath, to experience the full effect of a particular practice, and to intensify the benefits. Sometimes psychic centers, body channels or regions are used as the object of focus for spiritual concentration. Physically, chakras are associated with the major nerve plexuses and endocrine glands in the body. Many asanas have a particularly powerful and beneficial effect on one or more of these nerve plexuses and glands. For example, sarvangasana exerts a strong pressure on the throat region, the location of the thyroid gland in the body, which is associated with vishuddhi chakra. The thyroid is given a good massage and its functioning is greatly improved.

However, if the concentration is directed to this chakra while performing the asana, the beneficial effects will be increased. According to modern science, our body is divided into different systems, the nervous system, endocrine system, digestive system etc. Similarly, according to the physiology of yoga, our body is divided into different systems. Together these systems form the essence of the physical, psychological and spiritual sheaths of a human being.

Yoga therapy comes to our assistance. Yoga emphasizes treatment of the root cause and not the symptoms. It works in a slow, subtle and miraculous manner. Modern medicine can claim to save a life at a critical stage, but, for complete recovery and regaining of normal health, one must believe in the efficiency of Yoga therapy. The Yogic way of life includes a code of ethics, regulations, discipline etc, coupled with prayers and meditation. Even discussion of these subjects helps one relieve mental tensions and change attitudes. Simple asanas like the pavanmuktasana and the shavasana help to stretch and relax the whole body and neutralize tensions. The limbs of locomotion as well as all the vital organs relax and therefore function normally.

A simple pranayama technique ensures better utilization of oxygen from the air that we breathe better utilization of lung surface and the better circulation of oxygenated blood. This is accompanied by reduced rate of respiration, which in turn helps to reduce the heart rate and blood pressure. The most profound effect is achieved by meditation. Latest medical research proves that there is a marked

reduction in cell activity or metabolic activity and the body sustains itself on less food and less oxygen as well as less sleep and rest; as a result, the heart, lungs and other vital organs get the kind of rest they need to recover from stress. During meditation the pattern of alpha and beta waves recording the brain activity indicate a deep state of relaxation, deeper than the state of deep sleep.

Yoga is the best means to achieve the benefaction of the self. It helps common as well as learned people to unify with the supreme soul. In fact Yoga helps attain a healthy body, a sound mind and a delighted spirit. It is the base of all upliftments and an unending source of spiritual joy. Its continuous practice removes all the doubts that haunt one's mind. Even the bodily postures, which are most prevalent and regarded as Yoga itself, are enough to give someone a healthy body. It is now days widely used in modern medicine the world over to treat large number of diseases successfully.

1.13. Psychological Importance of Yoga

Yoga Psychology is understood as a study of the human mind through the perspective of yoga. While the separate discipline of Yoga Psychology was formulated only under a modern context, the concept of psychology within the practice of yoga has existed from the beginning of yoga philosophy. Even the word yoga itself contains the basic guidelines for the practice of psychology from the perspective of yoga; one of the common translations of yoga, for Sanskrit, is union. This union refers to the unification of the mind, body, and spirit. It can also be considered a union between the lower and the higher, omnipotent states of consciousness.

Yoga Psychology was created out of the growing need to implement eastern philosophies of human welfare and health care into a modern medical environment, one which demands systematic and methodological approaches to treatments and cures of disorders and dysfunctions occurring within the mind and body. Psychology is predominantly a practice designed to help treat the mind, as the word itself implies a study of the psyche or soul.

Yoga has supreme importance in the building of one's character. Yoga awakens human values in the practitioner. Feelings like forgiveness, mercy, kindness, wisdom and indifference arise naturally in the practitioner of Yoga.

Thus, there is no force like Yoga and no friend like Yoga. Thus in a way, Yoga is a rich tradition of Indian culture. Importance of Yoga is increasingly accepted in the modern education system. Education is an integral part of life in the society. Since long, our country has led the world in terms of religion, culture, spirituality and education. Unfortunately, under the influence of unmindful aping of western culture, religion, spiritualism and moral education are facing extinction in India today. Like our ancestors, leaders of modern age also insist upon the necessity of moral education for the all-round development of the pupils. Need of integration of Yoga in the modern system of education is essential. It is a good sign. Children are the true wealth of a nation. By imparting moral education in our children through compulsory teaching of Yoga in our schools, we can be sure of a golden future for our country.

The mind has been described in many ways. Some form of psychology make the claim that the mind is within the brain, coming from a set of neurological impulses that create electric waves between cells within the different lobes of the brain matter. Other forms of psychology exclaim that the mind is tucked within the sense, where different connections between our world and our body stimulate an activity of the appearance of a mind. But it is only when we move away from the material definition of this illusive mind that we begin to find explanations. Yoga Psychology takes its form in the subtle aspects of human existence.

While yoga psychology maintains some of the beliefs and ideologies encompassing the western philosophy of the human brain, mind, and functions of thought, there are many components to yoga psychology which delineate the general trends of modern day clinical psychology. Although some alternative therapies parallel the theory, yoga psychology adamantly maintains the belief that the mind, body, and soul are dependently interlinked and ultimately exist as an inseparable entity. In yoga psychology it is believed that treating the mind, body, or spirit independently can lead to the health of the other systems as well. However improper treatment of any of the systems can lead to disorders in the other two. For instance, using medication to treat the chemical imbalances within the brain may restore normal chemical functions for that specific system but will ultimately retract the proper functions of another. It will also influence the bodies' natural

production of the chemical, thereby making the patient dependent upon the medication.

1.14. Biochemical Importance of Yoga

As for the biochemical benefits of yoga, we can enumerate substantial decreases of glucose, sodium, cholesterol, and total white blood cells; and remarkable increases of vitamin C, total serum protein, hemoglobin. Furthermore, various studies revealed that yoga exercises are extremely effective when it comes to increasing the level of joint flexibility, together with the level of lubrication of joints, ligaments and tendons. Another interesting aspect has to do with the fact that yoga is one of the very few techniques, which contributes to 'massaging' all the internal organs and glands - including the ones that are hardly ever stimulated during the lifetime of a person, such as the prostate. The stimulation and massaging of the internal organs proves to be beneficial when it comes to preventing diseases, moreover, these ancient and efficient techniques facilitate a detoxification of our body. When stretching the muscles and performing a thorough 'organ massage', the nature of the yoga exercises encourages the flow of blood. As a consequence, metabolic by-products and environmental agents are eliminated from our body and certain undesired processes, such as aging, are delayed, as a final remark, all the benefits presented above come in addition to the most important aspect provided by yoga practices, meaning that the harmony and synchronization between body and mind grows. And there develops a growing feeling of inner peace.

Yogic and physical exercise has positive effect on physiological and motor ability components. Though several studies have been conducted on physiological due to the effect of yogic and physical exercise practices, no study has been conducted to analyze the influence of yogic and tai-chi training effect on physiological, bio-chemical, psychological parameters and playing abilities in an exhaustive manner in India. In order to find out the influence of tai-chi training effect on physiological, bi-chemical, psychological parameters and playing abilities, the investigator selected this study.

1.15. Yogic Exercise for Soccer Players

Shea, (2011), teaches Anusara-style yoga and specializes in breath technique, active relaxation and therapeutics. Fitness, nutrition, healing, philosophy, art, decorating and travel for magazines and websites including Fit Yoga, Pilates Style and Country Accents. A good soccer player possesses strength, flexibility, focus, adaptability and inner balance. As a perfect complement to soccer, yoga develops and refines these skills. Yoga postures warm up and loosen muscles a good way to avoid injury and breathing techniques sharpen players mind and develop concentration. After players practice, cool down with restorative poses. Hamstring stretches: Wide-legged forward bend stretches one's hamstrings and calf muscles. Stand with one's legs wide apart and one's feet parallel. Take a deep breath and raise one's arms over one's head. Exhale and bend forward. Place your hands on the floor and hold for 15 to 30 seconds. Inhale and rise up. For the seated version of this pose, sit on a folded blanket with one's legs wide apart. Inhale and lift one's arms over one's head. Exhale and stretch forward. Open one's front body by pressing one's fingertips into the floor, lifting one's chest and sliding one's shoulders. Back strengtheners: For more power in one's legs, build one's back muscles with downward-facing dog style. Place one's hands flat on the floor and walk one's feet back so one's body is in an upside-down "V" shape. Press the balls of one's feet firmly into the floor and reach one's heels -- which probably don't touch the floor -- back and down. Keep one's fingers spread out wide, and press one's fingertips, knuckles and the heels of one's hands firmly into the floor. Hip-Openers: Bound angle pose opens one's hip and groin muscles. Sit with one's knees bent out to the sides and press one's feet together, and bring one's heels in toward one's body. Lengthen one's spine upward and relax one's shoulders down. For a deeper hip-opener, practice pigeon prep. From downward-facing dog, step one's right foot behind one's left hand and place one's shin on the floor with one's knee out the to right. Lower one's left leg to the floor and sit down with one's hips squared. Inhale and lift the sides of one's body. Exhale and stretch forward, placing the top of one's head either on the floor, on one's two stacked fists or on yoga block. Repeat on the other side. Cool down: Hero pose loosens one's hips and relaxes one's joints after a tiring practice. Kneel with one's legs hip width apart, and then sit back on the floor with one's feet on either side of our hips. Make sure one's feet point straight back. For the restorative version of this pose, lie back on a bolster. Then, sit and practice ujjayi

breathing, also known as "ocean breath" because of the sound it makes as air passes through one's throat passage. Relaxation: Finish one's yoga practice with a corpse pose. Lie flat on one's back with legs slightly apart and one's arms out to one's sides, palms facing up. Close one's eyes and focus on one's breathe for at least five minutes.

1.16. Yogic Practice at the International Level

Roy Kenae, the one who isn't afraid of getting stuck in on the tackle. Yoga is a beautiful practice that gives one peace of mind and strengthens one's body, helps move blood and oxygen to parts of one's body that might be missing out due to one's lifestyle, and helps with flexibility, strength, posture and digestion (ridding the body of toxins). Find one's local yoga school or instructor and give it a genuine try. **Meditation:** Concentrate on just breathing in, taking deep breaths from one's diaphragm, and then exhale slowly. Choose a quiet, relaxing place to sit. As one get more comfortable, close one's eyes. Perhaps one wants some music on in the background. Sit with one's back straight to enhance the movement of one's breath. Allow thoughts to enter and exit one's mind and maintain focus on one's breathing to reach a relaxed state. Landon Donovan regularly practices meditation to get prepared for the next game. **Focus during a game:** Focus on one's play and not what might be going on around one. Just let that pass one by and maintain concentration on one's goals. Don't get angry at the referee or another teammate—if one do, let it pass quickly and set one's sights on the game. **Acupuncture:** Chinese medical theory holds that acupuncture works by normalizing the free flow of qi (a difficult-to-translate concept that pervades Chinese philosophy and is commonly translated as "vital energy") throughout the body. Pain or illnesses are treated by attempting to remedy local or systemic accumulations or deficiencies of qi. Pain is considered to indicate blockage or stagnation of the flow of qi, and an axiom of the medical literature of acupuncture is "no pain, no blockage; no blockage, no pain." **Positive thinking:** Don't focus on the negative. Strive for perfection but realize that we all make mistakes. Even the best soccer players in the world have bad days or miss wide open chances for goals. What one can do is pat oneself on the back for having read this guide, and start applying everything one have learned ASAP. As long as one keep moving forward and training to be the best soccer player one could ever be, one will always get the most out of the game (www.soccer-training-

info.com/mental_training.asp.). The reason is soccer players need to perform a lot of physical exercises to maintain their fitness and most of the time exercises involve a lot of physical activities. These extra physical activities produce extra Carbon Dioxide in one's body. So to release this toxic element from one's body, one's heart and lung need to work more than they would normally. Year after year this extra pressure makes soccer players' hearts and lungs weaker. These weaker organs no longer can support their body properly. On the other hand Yoga does not emphasize on performing lot of physical activities, instead it uses gentle movement to make one's body more flexible, healthy and perfectly shaped. Roy Keane the Manchester United star; when he first started practicing Yoga, he was physically exhausted after the classes. Joined by Ryan Giggs in the regular sessions organized by Old Trafford's physio, Roy, who had been riddled with injuries, saw a huge difference in his body. "There are benefits. One loosen the muscle and take pressure off one's joints," Roy said. As well as team training and Yoga, he sticks to a strict diet – salads are one of his favorites. The US Women's Olympic Team members regularly practice Yoga to improve their performance and avoid injuries. Usually football players have very, very tight adductors and tight hip flexors. Players can reduce the groin and hip injuries by getting more elasticity in the tissues. So this team tries to get more elasticity through yoga (<http://www.footballyoga.com/?cat=3>).

1.17. Objectives of the study

The following are the specific objectives of this study.

1. To findout the effect of yogic practices and tai-chi training on selected physiological variables such as vital capacity, resting pulse rate and breath holding time of women football players.
2. To findout the effect of yogic practices and tai-chi training on selected biochemical variables such as blood glucose, total cholesterol and triglycerides of women football players.
3. To findout the effect of yogic practices and tai-chi training on selected psychological variables such as anxiety, self esteem and achievement motivation of women football players.

4. To findout the effect of yogic practices and tai-chi training on dribbling, Kicking and shooting of women football players.

1.18 Statement of the problem

The purpose of the study was to find out the effects of yogic practices and tai-chi training on selected physiological, bio-chemical, psychological variables and playing ability among women football players.

1.19. Hypotheses

It was hypothesized that

1. There would be significant difference on the selected physiological, bio-chemical, psychological variables and playing abilities due to effect of yogic practices and tai-chi training than the control group among women football players.
2. There would be significant difference on the development of selected physiological, bio-chemical, psychological variables and playing abilities between the experimental groups among women football players.

1.20. Significance of the study

The results of the study may be useful to the following ways.

1. This study will provide guideline for the women football players to improve their physiological, bio-chemical and psychological qualities.
2. The result can be used by the coaches and physical education teachers for further development in playing abilities of their trainees.
3. It would further add to the quantum of knowledge in the area of football skill training.
4. The study may help the physical educators to conduct further research in this area.
5. This study gives an additional knowledge to the area of research.

1.21. Delimitations

1. To achieve the purpose of the study, ninety women football players preparing for competition only were selected randomly from the affiliated colleges of Madurai Kamaraj University, Madurai, Tamil Nadu.
2. The players' age was ranged between 17 and 25 years only.

3. Selected subjects were divided into two equal groups namely experimental group I (YPG=30) underwent yogic practice, Group II (TCG=30) underwent tai-chi training and Group III served as control (CG=30).
4. The independent variables were yogic practices and tai-chi training.
5. The following dependent variables only were selected for this study, physiological variables namely vital capacity, resting pulse rate, breath holding time, biochemical variables namely blood glucose, total cholesterol, triglycerides, psychological variables namely anxiety, self esteem, achievement motivation and playing abilities namely dribbling, kicking and shooting only.
6. The duration of the training period was restricted to twelve weeks and the number of days per week was confined to six.
7. The level of significance was fixed at 0.05 levels, which was considered to be appropriate.
8. The data were collected prior to and immediately after the training period.

1.22. Limitations

1. Heredity and environmental factors which may influence the results of this study could not be controlled or assessed.
2. Women football players' previous training was not considered.
3. Subjects included in the study may not be controlled with regard to their life style, diet and habits which may have influenced their performance.
4. Subject's body type and the socio economic status of women players are not taken into consideration for this study.

1.23. Meaning and Definition of the Operational Terms

1.23.1. Football

A game played on a rectangular field with net goals at either end in which two teams of 11 players each try to drive a ball into the other's goal by kicking, heading, or using any part of the body except the arms and hands. The goalie is the only player who may touch or move the ball with the arms or hands.

1.23.2. Yoga

Yoga is the system of philosophy and practice of esoteric meditation having as object the union of the individual human spirit with that of the universe (Harry and Partridge, 1970).

1.23.3. Asana

The word asana means “easy comfortable” and so the postures should be to have their full effects (**Alain, 1955**).

1.23.4. Pranayama

Prana means breath, reparation by vitality energy or strength. Ayama means stretch extension, expansion, regulation of breath and its restraint. (**Iyengar, 1996**)

1.23.5 Tai-chi Training

In the current study, the tai-chi training during supervised sessions Jang’s 24 forms of tai chi exercise were practiced. During unsupervised sessions, the tai-chi training could have included stretching and rotation exercise.

1.23.6. Yogic Practices

In the current study, the yogic practice during supervised sessions was the various types of asanas and pranayama exercises were performed. During unsupervised sessions, the yogic practice could have included loosening and relaxation exercise.

1.23.7. Vital Capacity

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

1.23.8. Resting Pulse Rate

The number of beats of a pulse per minute or the number of the beats of the heart and entries per minute is resting pulse rate (**Moorehouse and Miller, 1983**). The number felt in exactly in one minute is known as pulse rate.

1.23.9. Breath Holding Time

It is the duration of time through which one can hold his breath without inhaling or exhaling after a deep inhalation.

1.23.10. Blood glucose

Blood glucose is the primary source of energy for the body's cells, and blood lipids (in the form of fats and oils) are primarily a compact energy store.

Glucose is transported from the intestines or liver to body cells via the bloodstream, and is made available for cell absorption via the hormone insulin, produced by the body primarily in the pancreas. Blood glucose levels are usually lowest in the morning, before the first meal of the day (termed "the fasting level"), and rise after meals for an hour or two by a few milliMolar.

1.23.11. Total cholesterol

Cholesterol is sterol, a lipid found in the cell membranes of all body tissues, and is transported in the blood plasma of all animals. Because cholesterol is synthesized by all eukaryotes, trace amounts of cholesterol are also found in membranes of plants and fungi.

1.23.12. Triglycerides

Cholesterol and triglycerides are two forms of lipid, or fat. Both cholesterol and triglycerides are necessary for life itself. Triglycerides, which are chains of high-energy fatty acids, provide much of the energy needed for cells to function.

1.23.13. Anxiety

Anxiety (also called angst or worry) is a psychological and physiological state characterized by somatic, emotional, cognitive, and behavioral components. The root meaning of the word anxiety is 'to vex or trouble'; in either presence or absence of psychological stress, anxiety can create feelings of fear, worry, uneasiness, and dread.³¹ Anxiety is considered to be a normal reaction to a stressor. It may help someone to deal with a difficult situation by prompting them to cope with it. When anxiety becomes excessive, it may fall under the classification of an anxiety disorder.

1.23.14. Self esteem

The word 'esteem' comes from a Latin word that means 'to estimate'. So, self-esteem is how one estimate, or regard, oneself.

1.23.15. Achievement Motivation

Achievement motivation actually combines two constructs: the motive to approach success (M_s) and the motive to avoid failure (M_{af}).

$$\text{Achievement motivation is} = M_{(s)} - M_{(af)}$$

1.23.16.Dribbling

A dribble is the act of running with the ball at feet while maintaining possession. It is often used to take the ball around an opposition player.

1.23.17. Kicking

Kicking is, when the player has to strike out with the foot or feet.

1.23.18. Shooting

Shooting is, when an attacking player kicks the ball towards goal in an effort to score.
