HATHA YOGASANAS AS A CURRICULUM FOR ELEMENTARY SCHOOL STUDENTS

by

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Abstract

Some people believe that schools need to change their focus to developing affective, intuitive, and creative processes, and not only cognitive, rational and intellectual processes. A group of researchers believe high anxiety and stress affect the performance level of many elementary school students. Parents, school or society cannot eliminate stressful events but they can teach children adaptive ways to cope with stress. Hatha Yoga is a body-mind approach. Hatha Yoga, generally known as yoga across the globe, claims to be holistic as it focuses on the physical, emotional, intellectual aspects, along with moral, and spiritual elements of an individual. Although large amounts of learning and teaching materials are available on how to practice Hatha Yoga for adults, little Hatha Yoga material has been developed for children. The following project outlines a plan with the end result being an illustrated yogasanas curriculum for elementary school children irrespective of their abilities, gender, or cultural background.

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DEDICATIONS

This project is dedicated to my Guru, my parents, my aunt, and all the children of this beautiful world.

Important Note

1) It is recommended that this curriculum be used by classroom teachers who have experience in the practice of yoga.
2) It is important for teachers to make sure that, students who may have joint problems (hips, knees, ankles), any other typical physical problem, or problems other than that should check with a doctor or physiotherapist before teaching asanas to those students.

Introduction

Statement of the problem

Some people believe that "education needs new directions" (Hendricks & Wills, 1975, p.1) as schools do not focus on affective, intuitive, and creative development but give more emphasis to cognitive, rational, and intellectual development. Hendricks and Wills question if schools are established for teaching us how to live our lives, or teaching only skills relevant in life, or teaching partially useful materials such as arithmetic and geography.

Some people believe that learning, essentially, encompasses physical and emotional states in addition to cognitive skills (Yellin, 1983). As these often are not considered in the classroom, Yellin believes that the current education agenda underestimates the value of a holistic approach to learning.

Another group of researchers believe that high anxiety and stress affect the performance level of many elementary school students (Proeger & Myrick, 1980). Conditions resulting from stress negatively affect children's mind, body, behaviour, and spirit (Bauwens & Hourçade, 1992; Omizo, Omizo & Suzuki, 1988; Schultz, 1980). Moreover, children are forced to live up to expectations and demands of parents, teachers, peers, and society and to adjust to adverse situations such as divorce, death and abuse sometimes without intellectual and emotional support (Omizo et al). Although parents, school, or society cannot eliminate stressful events, they can teach children adaptive ways to cope up with stress (Schultz, 1980). Bauwens and Hourcade (1992) believe that psychological development is heightened when an individual undergoes stressful experiences as such experiences may promote "the development of effective

coping strategies" (p.97), therefore making such experiences of value. Bauwens and Hourcade argue, however, that such experiences of stress "must be kept at reasonable levels" (p.97) so that stress is under an individual's control.

Do we have such adaptive ways available for children? Even if they are made available, will all children be able to take advantage of such strategies? Consider if all children were to have the advantage of learning such strategies would they be able to recall or apply such strategies while under stress and anxiety? Even if there are adaptive ways such as behavior management, assertiveness, stress reduction strategies and the like in use, my question is whether such strategies will also focus on the physical fitness of an individual.

In this project, I focus on the use of yogasanas as an approach that provides children with adaptive ways to cope with stress. I briefly discuss biofeedback and transpersonal psychology (in the theoretical framework section) as well. There are other areas such as dreamwork, fantasy, biofeedback, body awareness, psychic abilities, and meditation that fall under transpersonal psychology. As I do not have much information on these areas I shall not discuss them except for biofeedback.

Biofeedback, introduced into school curriculum in the late 1970's, is defined by Roberts and Clark (1976) thus: "By amplifying activities inside the human body so that we can listen to internal processes such as heartbeat, blood pressure, brain activity, skin resistance, and many more, much of the autonomic nervous system can be brought under voluntary control" (p. 14). Biofeedback technique makes use of instruments to observe the rhythmic movements of the body (Yellin, 1983; see also Roberts & Clark). For altering the states of consciousness biofeedback combines western hardware with eastern

techniques (Pelletier & Peper, 1976). I believe that biofeedback would be inappropriate for elementary classrooms because it would involve instruments being attached to a person's body to monitor the body's internal functions. Moreover, there will be no fun for students unlike in asanas.

There is another approach to stress reduction now used in some schools for enhancing learning known as the Lozanov Method developed by Georgi Lozanov - a Bulgarian who himself was a student of yoga for 20 years (Yellin, 1983). Yellin defines Lozanov method saying, "Once the mind is freed from all distractions, by the aid of external suggestion, and forced to concentrate, enormous amounts of information can be absorbed in a brief time" (p. 40). Moreover, Yellin notes that Lozanov codified yoga techniques into a science of concentration, which he labeled "suggestology". The aim of suggestology, Yellin mentions, is to put a student in a relaxed state before learning situation. A relaxed state is when "muscle tension relaxed, heartbeat and pulse slowed, blood pressure drops slightly and alpha waves increase"(p. 41) to enhance the learning situation.

It is my belief that if, at an earlier age in life, skills are taught to handle stress and anxiety to our own body and mind, then our body and mind will react naturally to stressful situations with less stress or anxiety. Hatha Yoga, generally known as "yoga" across the globe, can teach skills to our body and mind. This project focuses on the development of a curriculum based on asanas (static body postures), with written illustrated instructions. Elementary schools may be the most appropriate place to teach asanas because all children would be able to take advantage of the instructions and participate in the activity. Also, introduction of asanas at a young age will result in long-

term benefits for students. Because of various benefits and for other reasons, asanas are taught to children in many public and private schools in India either in the physical education class or separately. Outside of India, plentiful resources are available on how to practice asanas for adults, but not much is available for children. Moreover, to my knowledge, little is available for schools in British Columbia. Therefore, I have developed an illustrated curriculum of Hatha Yogasanas, one of the physical practices of Hatha Yoga, suitable for elementary school children aged 5 to12 years.

This project consists of various sections. First, the project lays out a rationale, theoretical framework, and goals of the project. The goal section critically examines the British Columbia physical education curriculum and presents an argument to integrate asanas into classroom. Then, reasons are given why children should be taught asanas at elementary school. Second, a general overview of yoga is presented, including an historical overview of yoga, a discussion of Hatha Yoga practice, general benefits of asanas, asanas and learning, and general guidelines that should be followed in order to teach asanas. Third, a synthesis of research carried out using Hatha Yoga techniques on students and other subjects is given. Finally, the project discusses a method of incorporating asanas into the regular classroom and across curriculum; and provides with a text of written illustrated instructions.

Rationale for the project

Separation of mind and body is a common curriculum design flaw (Yellin, 1983). Schools should emphasize the teaching and learning of meaningful skills in addition to facts (Hendricks & Wills, 1975). Moreover, academic learning is enhanced if relaxed states of mind are encouraged (Yellin, 1983; see also Proeger & Myrick, 1980;

Weintraub, 2000). Hatha Yoga embodies one way of teaching integrated mind/body relationships (Roberts & Clark, 1976). Hatha yoga improves the physical, emotional, intellectual aspects, as well as the moral and spiritual elements of an individual (B. K. S. Iyengar, 2001; Shankar, 1993; Tomlinson, 2000), which brings harmony and a relaxed state in an individual, thereby enhancing learning (Hendricks & Wills, 1975). It is, therefore, quite appropriate to integrate a holistic approach such as Hatha Yoga in school curriculum (Hendricks & Wills, 1975; B. K. S. Iyengar, 2001; Yellin, 1983).

Theoretical Framework

Freudian, behavioral, and humanistic psychologies are useful educational psychologies, yet these are not complete psychologies (Roberts & Clark, 1976). Hendricks and Wills (1975) believe that transpersonal education has gone beyond psychoanalytic, behavioral, and humanistic approaches to seek a synthesis of intellect and intuition, mind and body, fact and feeling in education. According to transpersonal psychology an individual's physical, emotional, intellectual, and spiritual growth is interrelated and transpersonal psychology is concerned with the optimum development of human consciousness (Roberts & Clark, 1976). Roberts and Clark are of the opinion that use of transpersonal psychology in education may be used in conjunction with already established educational psychologies and therefore, does not require the rejection of those established educational psychologies.

Roberts and Clark (1976) describe the emerging educational philosophy based on transpersonal psychology as a combination of "rational-analytic and intuitive-synthetic modes of knowing" (p.23). They note that rational thinking which is verbal, logical, analytic, and linear, is associated with the left hemisphere of the brain. Intuitive thinking,

which is creative, holistic, visual, and pattern-oriented, is associated with right hemisphere of the brain. Yogasanas are done on the right and the left sides of the body. Therefore, it is believed that oxygen reaching to both the sides of the working muscles affect both the hemispheres of brain. Thus yogasanas affect the whole brain. Roberts and Clark also mention that research in the field of transpersonal psychology shows that by concentrating on their inner world; individuals can improve their physical, emotional, intellectual, and spiritual well being.

Roberts and Clark (1976) believe that many transpersonal techniques are suitable to classroom settings and may easily be introduced in the existing educational system. The first step after introducing transpersonal psychology to education would normally involve shifting the focus from external to internal awareness. One concern of transpersonal psychology is to teach voluntary control of internal states, which can be taught in the classroom by introducing relaxation training. Roberts and Clark believe that immediate effects of relaxation can be experienced both by teachers and students, and therefore firmly opine that relaxation has a place in the physical education curriculum. Moreover, they note that effective methods of mind/body control have been practiced through yoga for thousands of years.

Research in the field of the effect of Hatha Yoga is scarce. Therefore, I am not really sure whether teaching of asanas can be completely based on transpersonal educational theory. In my project, I recommend the inclusion of asanas as a curriculum in order to improve the physical, emotional, intellectual aspects of the children. According to Roberts and Clark (1976), mental and emotional states affect the body and, physical states can affect the internal states such as the mind and emotions. Therefore, if one state,

such as the physical, can be controlled voluntarily then mind and emotions will be affected automatically. Asanas are used to gain voluntary control of the physical aspect of an individual.

As this project deals with developing a curriculum it must be grounded in an appropriate curriculum perspective. The transmission model reflects competency based education and instructional design theory; the transaction model views the student as capable of intelligent interaction with the environment; and the transformation model is based on ecological and interdependent view (Miller & Seller, 1985). In short, Miller and Seller, note that the transmission model is rooted in an atomistic worldview, the transaction model is based on the scientific method, and the transformation model is founded on a holistic and interdependent worldview. The transformation position places the emphasis on the whole child; with knowledge being a process rather than strictly content. Learning is holistic, and motivation is an intrinsic phenomenon (Miller & Seller). I believe the transformation model provides the most appropriate theoretical approach to curriculum development for this project.

It is noted by School District of Hillsborough County-Tampa, Florida that physical education specialists develop their programs based on Developmental, Kinesiological, or Movement Education curriculum models. Kinesiological Models involve computer simulation and other sophisticated techniques to analyze human movements. Movement Education Models focus on the lifelong process of motor development. Developmental Models promote the evolution of more fully functioning individuals through holistic approach to instruction. In this model, physical education lessons are designed and sequenced for physical, social, emotional, and intellectual

development. Developmental Models encourage process oriented skill development (See http://www.sdhc.K12.fl.us/~pe.elementary/curriculum.htm) Hatha Yogasanas curriculum involves physical activities so a Developmental Model is appropriate for this curriculum. Therefore, it would not be inappropriate to ground Hatha Yogasanas curriculum on Transformation and Developmental Models of curriculum.

Goals of the project

I consider integration of asanas into regular classroom settings for elementary school children of British Columbia. Most of the asanas, included in this curriculum can be easily taught in the classroom. Certain asanas included in this curriculum will require more space and will also require support of a wall or a window. It will, therefore, be more appropriate to teach and practice those asanas in a gymnasium.

I intend this curriculum be used for a full academic school year. One rationale for this is that by the end of the year, elementary students will have learned most of the basic asanas and, if they wish, may then continue on their own at home perhaps under the supervision of their parents and integrate it into their lives. Another reason to teach for a full year is that changes that may be attributable to asanas can be measured, if desired, at the end of the academic year. Moreover, this curriculum may be used as a pilot study for future research.

British Columbia Physical Education Curriculum

As outlined in the Integrated Resource Package (IRP, The Ministry of Education, British Columbia, 1995), physical education is a requirement for all Kindergarten to Grade 10 students. Schools are expected to devote 10% of instructional time to physical education. The ministry's recommended aim of physical education in the IRP "is to enable all students to enhance their quality of life through active living" (p.1). The IRP mentions that physical education is also an integral part of the total education process. The IRP states that with regular participation in physical education students "...enjoy enhanced memory and learning, better concentration, and increased problem-solving abilities....more positive attitude toward self and others....Positive personal and social

behaviours improve school climate, resulting in better attendance and reduced violence and vandalism" (Ministry of Education, 1995, p.1).

The IRP comments on the importance of taking into consideration sensitive issues in a student such as self-image, body-image, eating difficulties, and eating disorders; and special needs students such as gifted, visually impaired, learning disabled, physically disabled and the like; and gender issues. It seems however, that students do not take up physical education seriously for various reasons and that not all students participate in the physical exercises. For example, the IRP mentions that girls' participation and interest in physical education decreases on reaching the secondary level. A significant reason for girls' decreased participation is emphasis of highly structured and competitive sports in physical education (IRP). The IRP suggests that this can be reduced by providing a balance of cooperative, competitive as well as all movement categories for girls. My belief is that physical education may teach students how to stay healthy and mentally active but may not teach how to relax the body as well as the mind. Moreover, physical education may also be devoid of moral and deeper spiritual elements, an integral aspect of a human being and an integral aspect of Hatha Yoga, which some parents may want their children to develop.

Asanas for all students as a curriculum

Considering the points mentioned in the IRP, I argue that the integration of asanas into the classroom at the elementary level would be of value for various reasons. At elementary level, children are usually flexible and can adapt to various body postures easily. Teachers and advanced practitioners of Hatha Yoga believe that asana is for

everyone (Stewart & Phillips, 1992; Tomlinson, 2000). Stewart and Phillips note about asanas:

> They can be practiced together by children of varying ages and physical abilities without anyone feeling inferior or inadequate. Yoga is not about attaining perfect poses. It is about doing what is right for your body. Every child can succeed because every child can improve. (p. 9)

Teachers and advanced practitioners of Hatha Yoga have noted that mentally or physically disabled students are sometimes more flexible than more able students and can have much fun while performing asanas (Stewart & Phillips, 1992; see also Carr, 1973; Tomlinson, 2000). Stewart and Phillips believe that asanas encourages coordination and stability and so is ideal for disabled students. Asanas can be adapted even for a child who is in a wheel chair (Stewart & Phillips). Tomlinson has taught asanas to people with cerebral palsy or multiple sclerosis and has found that such people gain something and also inspire other students in her class. However, it is recommended to consult a doctor prior to practice of asanas and to give extra attention during group practice for students with special needs (Stewart & Phillips).

Asanas require little physical energy. Therefore, even physically weak or disabled children can practice asanas without undue strain on their bodies. Vaishwanar (1975) reports that asanas require 0.8 to 3 calories/minute; a normal person resting in bed requires 0.9 to 1 calorie/minute, whereas physical exercises require 2-14 calories/minute. However, he does not specify the kind of physical exercises that require 2-14 calories/minute.

From her personal experience as a teacher, Tomlinson (2000) has noted that practice of asanas automatically makes one more aware and sensitive, therefore making dietary changes easier to implement. Students with eating disorders or other such issues may, therefore, benefit from regular practice of asanas.

Tomlinson (2000) also claims that asanas work on the internal organs such as the glandular system by giving them a gentle massage and stimulation. Therefore, it creates balanced hormonal activity especially during menstruation for females and relieves painful menstrual symptoms (Tomlinson). Ideally, females should rest during menstruation by not doing heavy activities; however, it is safe to practice all asanas during menstruation if one wishes except for the inverted poses, which should be strictly avoided during menstruation (Chanchani & Chanchani, 1995).

Asanas are a non-competitive form of physical exercise (Stewart & Phillips, 1992). Stated differently it means that they do not involve any competition with one's self or with another individual. Therefore, I believe that if competition is one of the reasons for girls, students with sensitive issues, and special needs students not participating in physical education then it should not be an issue in the case of asanas.

Stewart and Phillips (1992) note that children enjoy asanas because of their gentle moves and less involvement of mental or physical stress. They also believe that asanas have certain advantages when compared to other forms of exercise. Table 1 compares the difference of asanas to conventional exercises, adapted from Feuerstein (2001).

Table 1 Comparison of Difference Between Asanas and Conventional Exercises

Yogasana	Conventional Exercise
Parasympathetic nervous system dominates	Sympathetic nervous system dominates
Slow, dynamic, and static movements	Rapid forceful movements
Normalization of muscle tone	Increased muscle tension
Low risk of injuring muscles and ligaments	Higher risk of injuring muscles and ligaments
Low caloric consumption	Moderate to high caloric consumption
Effort is minimized, relaxed	Effort is maximized
Energizing (breathing kept natural or controlled)	Fatiguing (breathing is taxed)
Non-competitive, process-oriented	Competitive, goal-oriented
Internal awareness (focus is on the breath and the Infinite)	External awareness (focus is on reaching the toes, reaching the finishing line, etc.)

Note: From Feuerstein, T. L. (2001) http:// www.iayt.org/benefits.html OR Feuerstein, T. L. (2001, January-March). *The health benefits of yoga.* Yoga World: International newsletter for yoga teachers and students, Issue 16, p.6, 3p, 1 graph. (Database: Alternative Health Watch).

In asanas there are animal-bird-insect-and other such nature-related postures, which may be more fun for children than conventional, repetitive exercises. Asanas represent living things such as a fish or a tree; natural forms such as a mountain or a moon; man-made objects such as a boat; geometrical shapes such as a triangle, and other poses that refer to body parts (Chanchani & Chanchani, 1995) which provide action, movement, and creativity that most children enjoy (G. S. Iyengar, 2001). Moreover, asanas are safe and can be corrected easily. Due to a great deal of inherent defensive strength children seldom get injured and they usually stop doing an asana if something feels wrong (G. S. Iyengar, 2001).

If for some unavoidable reasons students have to stop the practice completely or partially, asanas still works on the body and sustains the effects. Several researchers have concluded the detraining effect of asanas to be effective (see Moorthy, 1983; Gharote, 1971). Stated differently, it means that with total suspension of asanas for a couple of months, the effect of asanas is retained for a longer time than are the effects of conventional or non-yogic exercises following suspension of those exercises.

The province of British Columbia is multicultural and its schools have children from different cultural backgrounds. As Hatha Yoga is for everyone, not associated with any religion (whether yoga is a religion or not is addressed in the "Yoga: a religion?" section), the teacher should have no worries about teaching asanas to culturally different children. In fact, teaching asanas to children of different cultures would be a great topic for future research.

For all these reasons, I have developed a curriculum on asanas useable for an entire academic year. The activity would be taught in 10-minute time slots for three days

a week during the 10% time allotted to the mandatory physical education curriculum of the province of British Columbia.

Historical overview of Yoga

The purpose of giving an historical overview and other such details on yoga is to provide information of yoga to readers who may be new to this subject, for others who may want to know more on the topic and also for those who may want more details on other related reading material. Another point in providing these details is to try to differentiate among terms like "Yoga", "Hatha Yoga", and "Asanas". One of the major points is to show how modern versions of Hatha Yogasanas can focus primarily on the physical aspect of an individual and therefore, can be accepted as a form of exercise, is also discussed.

Meaning of the word "Yoga" and its aim

The word "Yoga" derives from the root "yuj" in the Sanskrit language (King, 1999; see also B. K. S. Iyengar, 1991; Stewart & Phillips, 1992; Sturgess, 1997; Tomlinson, 2000). The word yoga literally means to "bind or yoke together" (King, p. 67; see also Tomlinson). The simple translation of Yoga is 'union' or a discipline to unite the body, mind, and spirit (Tomlinson, 2000). Stated differently, the individual's realization of oneness with the Creator is the essence of yoga (Yogananada, 1975; see also King, 1999; Sharma, 1976; Swami Satyananda, 1990). The aim of yoga is to show the way and teach the method of reuniting the soul with the Spirit (Yogananada).

Yoga essentially considers a human being to be more than just the physical body and this 'more' can be discovered by following a discipline (Feuerstein, 1997). Fazalbhoy (1976) points out that by learning and following the principles of yoga of "keeping the body fit, the mind healthy and moral behaviour straight" (p.56) the thought is purified and one does the right thing in the right way all the time without neglecting normal

responsibilities and duties (see also Vaishwanar, 1975). In short, yoga is a discipline that teaches techniques by which the spirit of a human being can be united with the Supreme Universal Spirit to gain liberation or enlightenment.

Yoga: a religion?

Yoga is not a religion (Yellin, 1983; see also Isham, 1996; Manuvaryaji, 1976; Tomlinson, 2000) and does not require a belief in God (Tomlinson, Yellin). Manuvaryaji (1976) notes yoga to be wisdom of life that can exalt the thoughts and ideas of a person. Any person can practice his/her faith or religion and simultaneously practice techniques of yoga (Yellin; Tomlinson). Yoga is truth relevant universally (Yogananda, 1975).

Yoga, believed to have been founded in India (Tomlinson, 2000), has not been identified with any religion or sect in India (Diwakar, 1975) though its history may be interwoven with some of the major religions of India (Tomlinson). Diwakar believes that peoples all over the world have consciously or unconsciously practiced yogic law. He also believes that yoga is popular and has firm roots in India because of the discipline's systematic development in the culture of that country. Diwakar further explains yoga as an independent discipline that could be adopted by anyone, irrespective of religion, creed, caste, sex or age (see also Sinha, 1976; Yellin, 1983) and "without any eyebrows being raised" (p.5).

Many people believe yoga may have existed 5,000 years or longer (Tomlinson, 2000), and was first practiced and preached in India by the Yogis (practitioners of yoga) to disciples living in boarding schools (gurukula ashrams) far away from human habitations (Fazalbhoy, 1976; see also Tomlinson, 2000). Some parts of yoga knowledge, in the form of aphorisms, were terse in nature and therefore easier to memorize (King,

1999) whereas some in the form of hundreds or even thousands of verses required a feat to memorize in order to preserve the knowledge of yoga. The knowledge of yoga accessible to general public today was later recorded and translated in written form (Tomlinson, 2000).

Paths of Yoga

As time rolled, many different branches of yoga evolved, making yoga a rich as well as a complex tradition with a number of different approaches (Tomlinson, 2000; see also King, 1999). Different approaches were designed in order that yoga be helpful to everyone to suit the needs appropriate to the emotional and mental differences in each human being (Feuerstein, 1999). Raja Yoga, Hatha Yoga, Jnana Yoga, Karma Yoga, Bhakti Yoga, Tantra Yoga, and Mantra Yoga are some of the main branches of Yoga (Feuerstein, 1999; see also Tomlinson, 2000). However, "Classical Yoga", and "Hatha Yoga" have been accepted most widely (King, 1999).

Classical Yoga

Classical Yoga is also known as Raja Yoga (Royal Yoga) or Ashtanga Yoga (Eight-Limbed Yoga), mentions (King, 1999). *Yoga Sutra*, a text on Classical Yoga, authored by Patanjali (second century CE) is divided into four chapters with verses describing a) 'ecstasy', b) 'path to attainment', c) 'supernormal powers', and d) 'liberation' (Tomlinson, 2000; see also King, 1999). The second chapter 'path to attainment' describes the eight limbs of yoga (King, 1999) namely: (1) Yama (moral restraints); (2) Niyama (moral observances); (3) Asana (posture or seat); (4) Pranayama (breath-control); (5) Pratyahara (withdrawal of sense organs); (6) Dharana (concentration); (7) Dhyana (meditation); and (8) Samadhi (enlightenment). These 8

steps are to be followed by a human being who wants to realize the self (King; see also Sen, 1976, Sturgess, 1997).

Hatha Yoga

I shall describe Hatha Yoga in detail as this project is based on the asanas described in Hatha Yoga texts. Before the coming of Hatha Yoga, knowledge of yoga was esoteric in nature (Tomlinson, 2000). Therefore, Hatha Yoga, a complement to Classical Yoga (Tomlinson, 2000) was developed for those individuals who cannot attain self-realization through practice of Classical Yoga (King 1999). Hatha-Yoga, the Forceful Yoga, aims at freeing the soul through physical change (Feuerstein, 1999). The fundamental purpose of Hatha Yoga, notes King, is to still the fluctuations of the vital breath by bringing an even flow of breath in both nostrils. In order to centralize the breath, though, certain techniques are to be applied (King), which has been compiled in Hatha Yoga practice.

Hatha Yoga is 4600 years old according to the excavations of Protoindian culture (Dostalek, 1975). Evidence from the Indus Valley Civilization suggests that Hatha Yoga was practiced about 2500 BC (Sturgess, 1997). Originally there were 84,000 postures passed down orally from teachers to disciples, which have been reduced and modified into only 84 postures that are commonly useful today (Sturgess; see also Kokje Shastri, 1975). The passing of yogic traditions from generation to generation brought awareness in the general public about the benefits of asanas and pranayama (breath control) as equivalent with physical training and fitness development (Dhanaraj, 1975).

Meaning and Definition of Hatha Yoga

The sound 'ha' in the Sanskrit word 'Hatha' means sun, the breath which flows through the right nostril, and which relates to the positive, heating, male energy. The sound 'tha' means moon, the breath which flows through the left nostril, and which relates to the negative, cooling, female energy (Sturgess, 1997). Therefore, the words Hatha Yoga mean a "connection (yuj) or integration of breathing by the right (ha) and left (tha) nostrils" (Dostolek, 1975, p.33; see also King, 1999). When there is an even flow of breath through both nostrils one experiences balance, harmony, and mental calm in the body, which is the aim of Hatha Yoga (Sturgess). Dostalek (1975) defines Hatha Yoga "as a system of exercises by means of which the organism develops a resistance toward stress, i.e., the homeostasis gets stabilized to such a degree that the stress stimuli do not disturb the organism as in non-exercised individuals" (p.33; see also B. K. S. Iyengar, 2001; McCormick, 1979; Roquemore, 2001; Weintraub, 2000).

The text *Hatha Yoga Pradipika* (King, 1999) authored by Swatmaram (c. fourteenth century CE) contains physical practices as asanas (Sturgess, 1997). Other physical practices such as "the six purification techniques", "seals to awaken and direct the flow of coiled up energy", "body locks that assist in controlling the flow of energy", and the "systematic breathing techniques'' are also described in the text (Sturgess, 1997), including meditation.

In short, Hatha Yoga involves asanas (meant for stretching the body, relaxing the body and the mind); pranayama (breath control); other physical practices; and meditation. Because the main purpose is only to introduce asanas and awareness of normal breathing to children, this project focuses only on asanas and normal breathing during the activity.

Pranayama, other physical practices, and meditation are not suitable for all children between 5-12 years of age as such techniques may affect negatively on the body and mind (G. S. Iyengar, 2001).

Hatha Yoga in the West

In North American and other western countries, yoga has many different associations and is mostly approached through the body, which makes up the physical aspect of yoga practice (Tomlinson 2000). It is my sense that the word "yoga" is a generic name in the East as well as the West attributed to any branch of yoga, especially the one that makes up the physical aspect of the practice. As mentioned earlier, yoga is a vast field with many different approaches and techniques (Tomlinson) but all the different styles of yoga have the same fundamental aim of strengthening the body and mind (Roquemore, 2001), for everlasting peace and happiness (Tomlinson).

The most popular yoga in North American and other western countries is Hatha Yoga, commonly known as "asanas", "yogic postures", "yogic exercises", or simply "yoga". Throughout this project, I shall use the term asanas, which means body postures as I have developed a curriculum on asanas, although the writers of the articles and/or books that I cite may use different terms referring to the practice of asanas and the other physical practices of Hatha Yoga. It should be understood, however, that the term "Hatha Yoga" refers to the physical postures in general, and that all physical yoga, therefore, falls under the term Hatha.

There are various reasons for the popularity of Hatha Yoga across the globe. Most North Americans and other westerners perceive it as a health and wellness program and a way of relaxing (King, 1999) which brings physiological and psychological improvement

as well as in the long run helps one to achieve self-realization, the ultimate goal of all various paths of yoga (Tomlinson, 2000). Another reason for the popularity of Hatha Yoga is because Patanjali, the author of *Yoga Sutra*, deals with the subject of postures in only three aphorisms and does not refer to any particular posture whereas *Hatha Yoga Pradipika* describes approximately 84 different postures in detail (Sturgess, 1997), which I think must be helpful and handy. Moreover, Hatha Yoga lays stress on the physical aspect foremost rather than the mind and spirit (Tomlinson, 2000). Tomlinson argues that mind and spirit should reside in a healthy body for more efficient everyday living and for approaching other techniques of Hatha Yoga.

Modern Schools of Hatha Yoga

Hatha Yoga is the foundation of all modern versions (Roquemore, 2001). The modern versions developed by renowned teachers, normally referred as Gurus, are Iyengar Yoga, Ashtanga Yoga, Kundalini Yoga, Bikram Yoga, Kripalu Yoga, Phoenix Rising Yoga Therapy, and Restorative Yoga (Tomlinson, 2000; Potter, 2000). Other modern versions include ViniYoga, Integral Yoga, Sivananda Yoga, Ananda Yoga, Anusara Yoga, Hidden Language Yoga, Somatic Yoga, Tri Yoga, White Lotus Yoga, Jivamukti, Svaroopa Yoga, and Ishta Yoga (Feuerstein, 1996). Due to Hatha Yoga's popularity in North American and other countries of the West, many practitioners of Hatha Yoga have developed their own styles to suit and adapt to a western person's need and have given the above names to their style (Tomlinson, 2000). Tomlinson gives the example of Restorative Yoga, which makes use of props and focuses mainly on the relaxation part so to help injured and physically ill people. Restorative Yoga, more appropriate for elderly people, teaches one to de-stress. While there are many different

modern versions existing today and while they will all keep evolving (Feuerstein, 1996), each and every version is based on the same principles of traditional Hatha Yoga practices.

Asanas' practice

From my experience as a practitioner and from views of advanced practitioners and teachers there are a few basic steps in asanas. First, one gently moves one part, usually the right side, of the limbs to get into a particular asana. Second, one holds still this asana for a few seconds focusing on the breath. Third, one gently releases the asana to go to the left part of the body or to a different asana. Asanas are to be done slowly and with awareness. One should never strain to the point of discomfort. Breathing should be normal and smooth which helps to bring a good supply of oxygen to the working muscles. Each asana is done at least once on the right and the left side but can be repeated if one desires (see Chanchani & Chanchani, 1995; Stewart & Phillips, 1992; Swami Satyanada Saraswati, 1990). Nathawat (1976) notes that the wide variety of asanas gives the flexibility of choosing postures from a wide range to suit oneself better.

The mind should be calm and the concentration should be fixed on a pre-determined thought while performing asanas (Dhanaraj, 1975). Dhanaraj adds that this brings in mental equilibrium thus making physiological development easier, which together "enable the practitioner to discover his or her potential abilities and experience some sort of inner happiness" (p.53).

General Benefits of asanas

Asanas inculcates an awareness of what is happening inside and outside of oneself; and physically makes an individual sensitive to the strong and weak body parts

to build strength, to improve posture, and to be more flexible (Tomlinson, 2000). Internally, asanas purifies and circulates the blood to oxygenate every body cell and tissue; and energizes the body (Tomlinson). Each asana works on the internal organs such as pituitary pineal, thyroid and thymus, adrenal, and other glands (Vohra, 1976; see also Vaishwanar, 1975) by massaging and stimulating the internal organs (Tomlinson, 2000). Asanas prevents and cures ailments (B.K.S. Iyengar, 2001; Sturgess, 1997) such as arthritis, asthma, chronic fatigue (Tomlinson, 2000) and/or psychosomatic disorders (Vaishwanar, 1975) and/or controls weight, treats insomnia, headaches, and heart conditions (Yellin, 1983). Asanas calms the nervous system; so mentally one is more relaxed yet active with higher concentration and memory powers (Tomlinson, 2000). With these physical, mental, and emotional benefits, Vaishwanar agrees with the claim of asanas to enable humans to slow down the aging process improving longevity.

Unlike strenuous exercises like aerobics, asanas does not require time to recover and gives a pleasant feeling to the practitioner (Dhanaraj, 1975). Asanas reduce restlessness and teach one to achieve maximum and efficient results using minimal energy (Sturgess, 1997) for "a prolonged, stable and coordinated activity" (Vaishwanar, 1975, p.116; see also Sinha, 1976) without being tired.

To emphasize the importance and incorporation of asanas in daily life Duggal (1976) asks, "Do we need research to establish that fresh air and clean water are conducive to health?" (p.115). While I do not disagree with Duggal, I nonetheless believe that research enhances the credibility of any thought or practice.

The general psychophysical health benefits of practicing various asanas is shown in Table 2 (adapted from Feuerstein, 2001).

Table 2 General Health Benefits of Asanas

Physiological Benefits
Pulse rate and respiratory rate decrease
Gastrointestinal function normalizes
Endocrine function normalizes
Excretory functions improve
Musculoskeletal flexibility and joint range of motion increase
Posture improves
Strength, resiliency, and endurance increase
Energy level increases
Weight normalizes
Sleep improves
Immunity increases
Pain decreases
Psychological Benefits
Somatic and kinesthetic awareness increase
Mood improves and subjective well-being increases
Self-acceptance and self-actualization increase
Social adjustment increases
Anxiety, depression, and hostility decrease
Psychomotor functions improve:
Grip strength increases
Dexterity and fine skills improve

Table 2 (continued)

Eye-hand coordination improves
Steadiness improves
Depth perception improves
Balance improves
Cognitive function improves:
Attention improves
Concentration improves
Memory improves
Learning efficiency improves
Symbol coding improves
Flicker fusion frequency improves

Note: Feuerstein, T. L. (2001). http://www.iayt.org/benefits.html Or Feuerstein, T. L. (2001, January-March). *The health benefits of yoga.* Yoga World: International newsletter for yoga teachers and students, Issue 16, p.6, 3p, 1 graph. (Database: Alternative Health Watch).

Asanas and learning

Asanas aim to remove all the toxins, and waste matter from the body (Sturgess, 1997) to open and release energy blocks (Tomlinson, 2000). Stated differently, asanas work to "...clear impurities that accumulates and lead to stagnation and disease" (Tomlinson, p.8). Once there is a free flow of body energy, physical harmony (Tomlinson; Sturgess) and a relaxed state of mind are established which aid learning (Yellin, 1983). Such a relaxed yet concentrated state of mind can be used to heighten learning in the classroom (Yellin) and therefore children will show higher cognitive and creative powers (Hendricks & Wills, 1975).

Requirements for teaching asanas in educational settings

Successful academic education in general requires that a student have "a dedicated teacher, sound teaching, pure atmosphere and worthy community life" (Fazalbhoy, 1976, p.57). Therefore, the first requirement for a teacher is to demonstrate rather than describe asanas to the students, and he/she should be agile, sharp, inspiring, enthusiastic, cheerful (G. S. Iyengar, 2001). Apart from knowledge and excellence in asana, it is necessary for a teacher to impart and demonstrate appropriate values (Fazalbhoy, 1976). Fazalbhoy stresses that teachers have a major responsibility toward cultivating students' minds.

There are no prerequisites but only an open mind to learn asanas (Tomlinson, 2000). Simple, effective yet challenging asanas may, therefore, not require specific diet, special clothing, props and other specifics or particulars. Practitioners and advanced students suggest that one should do asanas in an open space (indoors or outdoors) with an empty stomach (empty the bladder and the bowel if possible) and with bare feet,

normally early in the morning while wearing comfortable clothing. However, as an alternative, it is suggested that asanas can be done at any time suitable to a practitioner. It is the beauty of asanas to respond to the need and interest of a practitioner (Tomlinson). It is advisable to wait two hours before practicing if one has eaten a heavy meal, or one hour after one has eaten a heavy breakfast (see Chanchani & Chanchani, 1995; Stewart & Phillips, 1992; Swami Satyanada Saraswati, 1990).

Traditional Hatha Yoga never utilizes props. Props are a new innovation to suit the modern practitioner better. Props of any kind are, therefore, not required for the student; however, a sticky mat or a folded blanket is preferable and allows for a more comfortable session. But if one chooses to practice Iyengar Yoga, which makes use of props, then one should use a wooden block, bolster, strap, and such, as necessary. If one prefers to do asanas indoors, then the room should be warm and quiet.

As mentioned earlier, it is essential to pay attention to what one is doing while practicing asanas in order to bring the mind, body, and spirit together. While children may not have the same capacity for concentration as adults, nonetheless they will experience calmness and more concentration practicing asanas and they will respond best to continuous movement and physical challenge (Tomlinson, 2000).

Although these requirements may sound intimidating and yoga teachers may also feel less comfortable and confident in the beginning teaching asanas nonetheless, yoga teachers can always consult various institutions imparting training in asanas. Today, educators are showing interest in asanas and many schools in America have devoted classes for teaching asanas with the help of institutions and advanced Hatha Yoga teachers. Two such institutions are the Gaiam Yoga for Life (see

http://www.gaiam.com/gaiam/1,1267,ArticleDetail:learn:105:433,00.html) and Yoga Inside Foundation (see www.yoga inside.org/who/school.html). The aims of these institutions is to help integrate Hatha Yoga into the health or physical education curriculum in the public schools across the United States, or to support Hatha Yoga teachers in several schools, or to offer Hatha Yoga training programs for school teachers to bring in asanas in their classroom teaching. It is obvious that not all classroom teachers have knowledge about and expertise in asanas, therefore, I recommend that asanas be added into the curriculum of teacher education programs (B.Ed programs) so that teachers would have the skills to teach asanas. Yet another way is to involve community members practicing asanas to teach in the classrooms.

Review of the Literature

This section discusses a general literature regarding stress, literature regarding relaxation response as a curriculum for children, and research literature in the field of Hatha Yoga. The literature cited here is a mixture of work done by eastern as well as western researchers.

Research on literature regarding stress

Stress is the condition wherein the body is responding to any intense physical, emotional or mental demand (Edelstein, 2000; Schultz, 1980), which makes it difficult for the child to cope (Schultz). Stress may result in decreased memory capacity in individuals (Edelstein). Stress can be reduced by relaxation. One of the central features of physical relaxation involves the use of relaxation exercises such as stretching, deep breathing, and the practice of asanas, which can be taught to students in the classrooms to help maintain personal comfort (Schultz). Schultz mentions that "...the capacity to take in, store, and recall more of what we experience is enhanced by a physical and mental posture that unites alertness with a calm and relaxed state of being" (p.15). Some of the benefits of asanas include calming the mind and increasing mental alertness in addition to an increase of mental and physical efficiency.

Researchers note that stressors for elementary students include family and school related problems, feelings of being different than others, homework, social interactions, teachers' treatment, discipline and classroom management procedures, extracurricular activities, and public performance. Guidance classes for students help them to increase their self-awareness (Bauwens & Hourcade, 1992; Omizo, Omizo, & Suzuki, 1988). I would argue that these guidance classes may not teach the student to remain physically fit

while simultaneously increasing self-awareness. Moreover, the effects of these guidance classes may not be long lasting or may not come in handy when truly needed. Asanas, on the other hand, teaches self management to the body and the mind to react positively to any type of stress and also teaches self-awareness simultaneously.

Research on literature regarding relaxation response as a curriculum

In a study carried out on elementary school students in the city of Koblenz, West Germany, it was found that relaxation training for 15 minutes a week for one academic year resulted in an increase in reading achievement and a decrease in anxiety among reading disabled students (Frey, 1980). Techniques of "progressive muscle relaxation, musical quiet periods, and imaginative experiences" (Frey, p. 931) were found to be beneficial. In asanas, savasana (corpse pose) involves relaxation and visualization.

A study investigating the relationship between exposure to a relaxation response curriculum and academic achievement among sixth, seventh, and eighth grades by Benson, Wilcher, Greenberg, Huggins, Ennis, Zuttermeister, Myers, & Friedman (2000), found that students exposed more than twice to a relaxation response curriculum had higher grade point averages, work habits and cooperation scores than students who had two or fewer exposures. Moreover, over the course of a 2-year period there was an improvement in academic scores for students who had more exposure to the relaxation response curriculum. Students were exposed to this curriculum for a period of over three years. Teachers trained in the relaxation response curriculum prior to the study imparted this curriculum knowledge to their students. The curriculum had the following six elements: "education on the physiology of stress; identification of personal stressors; elicitation of the relaxation response using a mental focus or diaphragmatic breathing

while developing a passive attitude toward distractions; 'mini relaxations' consisting of strategies to elicit the relaxation response quickly in response to stress; body awareness and stretching exercises; and 'mindfulness' training" (Benson et al., 2000, p.158). Benson et al. suggest that such interventions can help to improve the academic performance of middle- school students and also help students to cope with various stresses in their academic and their personal lives. However, it is hard to interpret how much time was devoted to the curriculum in a day round the year. A similar relaxation response curriculum used in a study carried out by Benson, Kornhaber, Kornhaber, LeChanu, Zuttermeister, Myers, & Friedman, (1994) showed an increase in self-esteem and greater internal locus of control in high school sophomores.

The curriculum that I plan to develop involves a series of stretching, relaxing, and breathing exercises, which brings awareness and relaxation to the students. The relaxation response curriculum that Benson et al. (2000) and Benson et al. (1994) have used involves stretching, breathing and other techniques. Though Benson et al. (2000; 1994) do not describe the curriculum techniques as drawn from Hatha Yoga or other such practices; they mention that cultural practices such as yoga have psychological and physiological benefits. It is my opinion that the practice of asanas even for 10 minutes a day affects the psychological, physiological, intellectual, moral, and spiritual aspect of an individual.

Since seeing the relationship between psychological characteristics such as low self-esteem and an external locus of control, with negative behaviors and feelings of depression among adolescents, some schools have started to include programs to increase self-esteem in school curricula (Benson et al. 1994). I think, however, the inclusion of

such programs may not bring other benefits like body-mind awareness, all round psychophysical development in a student, relaxed yet active state, and other benefits such as oxygenating each and every body cell. The studies mentioned above have involved long term practice leading to high level competence, therefore, research is required whether shorter time leads to similar benefits as well.

Research of Hatha Yoga on students and other subjects

Research in the area of mind-body has not received much attention in the field of education, although Yellin (1983) contends that a holistic approach such as yoga training is highly useful in the educational field. However, anecdotal reports are plentiful. Anecdotal reports from yoga teachers suggest that students benefit greatly, both physically and mentally (see Stukin, 2001) even after one class with asanas (Putney, 1999). Students are energetic and active through out the school day. The students perform better in the class; are more attentive; are more cooperative; have higher self-efficacy; higher self-esteem; and take more interest in what they do (Stukin, Putney; see Table 1, & Table 2). These reports recommend inclusion of yoga training as a part of physical education curriculum or as a curriculum of its own (see Stukin, Putney). The Accelerated School in South Central Los Angeles, having kindergarten through grade eight classes, has made yoga training mandatory as a part of the physical education curriculum (Stukin). Stukin mentions that reading scores increased by 10 percent during the academic year 2000-2001 as compared to the previous year, as measured by the Stanford Achievement Test. It was in this year yoga training was compulsory for all students.

The claims made by practitioners of Hatha Yoga concerning perfect physical, mental, and spiritual health may not be explicable in scientific detail (Joseph, Sridharan,

Patil, Kumaria, Selvamurthy, Joseph, & Nayar, 1981). However, Joseph et al. note that studies exploring the physiological potentials of yogis have been conducted. In my experience as a reader (assessing the data), research has mostly been done in India and more in the field of medicine than education. Not all research reports about Hatha Yoga are published due to funding issues, nor is all research translated into English. In my experience as a reader, I think that the research designed, carried out, and published in English about Hatha Yoga may not be set up the way modern education research demands. Again from my experience as a reader, modern quantitative educational research is usually designed having a control and experimental group in addition to other minute details such as variables affecting the results. However, this may not be the way assessments were done, usually and mostly a couple of decades ago, for research in education in India. From my experience as a reader, I think that qualitative research designs may be more compatible with the underlying principles of asanas.

A general collection of research on Hatha Yoga practices follows. In this section there is a discussion of research carried out with students and others. First the discussion is on research carried out with students in elementary schools, then with students in secondary schools, followed by college students, and finally university students. The studies have been organized in descending order of the year of publication. The reason to include research on other subjects is to show that practice of asanas is helpful in other areas, professions, and for different people.

After 10 days of training in various yoga practices, elementary school children showed improvement in the static motor performance compared to the control group who showed no change (Telles, Hanumanthaiah, Nagarathna, & Nagendra, 1993). In a

steadiness test, a metal stylus was to be inserted and held for 15 seconds without touching the sides of 9 different holes. The largest hole measured 8 mm and the smallest measured 2 mm in diameter. The control group did not receive any kind of yoga training. The yoga group was trained for approximately 8 hours a day. The training included specially chosen asanas to improve physical stamina as well as physical and mental balance, pranayama, techniques of cleaning the body organs internally, and games to improve attention span and memory. The researchers believe that practice of various techniques improved voluntary control, eye-hand coordination, and concentration (see Table 2). However, it could be argued that any intervention is better than no intervention; therefore, it is not clear that this positive finding can be attributed to yoga training per se. Also 8 hours per day for 10 days is not practical, and results may have little relevance to an intervention that involves 10 minutes of yoga training in a day.

In order to study the detraining effect (to observe results after discontinuation of the training) of yogic and non-yogic exercises on minimum muscular fitness, 180 students with an age group ranging from 6 to 11 years were selected (Moorthy, 1983). Ninety boys and ninety girls were divided into groups of 30 each: no-intervention control, experimental I (Non Yogic Exercise), and experimental II (Yogic Exercise). No student was involved in competitive sports or other systematic training program, which may have influenced the results. Yogic exercises were imparted to experimental II group and non-yogic exercises were imparted to experimental I group for 30 minute per day, for 6 weeks from mid June till the end of July, in the afternoon on all days of the week except Sundays. The control group did not participate in any of the above exercises. All the subjects were tested for muscular fitness at the end of the experiment. The results

indicated that boys in the yogic exercise group showed muscular fitness improvement of 76.67% as compared to 56.67% for non-yogic exercise group and 3.33% for the control group. The improvement percentage in girls was 83.33% for the yogic exercise group, 56.67% for the non-yogic exercise group, and 3.30% for the control group. The training in all the three groups was completely discontinued after July. All the subjects were tested in the middle of September to test the effect of yogic exercise after complete suspension of the training for six weeks. At follow-up, the improvement percentage in boys was 56.67% for the yogic exercise group, 30.00% for the non-yogic exercise group, and 3.34% for the control group. At follow-up, the improvement percentage in girls was 70.00% for the yogic exercise group, 26.67% for the non-yogic exercise group, and 6.60% for the control group. Improvement percentage had decreased in all the groups after the suspension of exercise. However, the decrease in non-yogic exercise group is more significant compared to the decrease in yogic exercise group. On the basis of the results, Moorthy concluded that yogic exercises retain their effects for a longer time than non-yogic exercises and therefore, yogic exercises are more advantageous for both boys and girls.

Hopkins and Hopkins (1979) mention that yoga exercises are a form of active relaxation, which can be helpful in promoting concentration. In their study carried out on 34 children (who were placed in one of the Impact Centers in the Newark School District in Newark, Delaware) with a mean age of 8.9 years, Hopkins and Hopkins found that yoga activity periods were followed by more efficient completion of the criterion task suggesting improved working efficiency. Moreover, a modified yoga program resulted in

the improvement of the "attention/concentration of children performing a coding task" (p.345; see Table 2). The duration of the activity is not clear in the article.

In their study on visual perceptual sensitivity at the Vivekananda Kendra Yoga Research Foundation in India, Manjunath and Telles (1999) found a significant improvement in 14 children (6 female). The children's ages ranged from 12 to 17 years. The children practiced asanas along with other techniques such as pranayama, kriyas, meditation, devotional singing, and specially designed games for approximately 8 hours a day for 10 days. The researchers assessed the children's visual perceptual sensitivity through Critical Flicker Fusion Frequency (CFF) and the degree of optical illusion on Day 1 and Day 10 with a control group of 14 (age and sex matched). CFF is the frequency at which a flickering stimulus is perceived to be steady, with higher values suggesting greater perceptual accuracy. The study showed that young children "show better improvement in performance following yoga training in relatively short duration" (p. 44) as compared to a previous research on adults aged 25 to 39 years (see Table 2).

A study was conducted on girls who were having adjustment problems at home or in society and who were residing in a community home in South India (Telles, Narendran, Raghuraj, Nagarathna, & Nagendra, 1997). Children with adjustment problems are those who are socially and emotionally traumatized; they are more anxious, fearful, and aggressive although they have normal physical development. Community homes are specially governed schools to take care of such children. The study consisted of two parts. In part I, heart rate, breathing rate, and skin resistance was recorded for 20 community home girls and for 20 age-matched girls from a regular school. The data of girls from the community home were compared with those of girls from regular school of

the same age using Mann-Whitney U test. Results showed that the community home girls had a significantly higher rate of breathing and a more irregular breath pattern than the girls from regular school. In part II, 20 community girls underwent yoga practices and 20 community girls played games. All these girls were assessed with problems in part I. The average age of girls in the yoga group was 14.9 years. The average age of girls in the games group was 15.1 years. Each group had their respective activity for one hour per day for a period of six months. The yoga group practiced 50 minutes of simple asanas and 10 minutes of savasana (corpse pose). Jogging, rapid bending forwards and backwards, twisting, and bending sideways for 40 minutes in addition to relay races for 20 minutes were included in the games group. Wilcoxon paired-sample test was used to assess the data in part II. Girls in both of the groups showed reduction in heart rates, and increased feelings of well-being but no change in skin resistance. However, the yoga group showed reduction in irregular breathing pattern, which was not observed in the games group. The researchers concluded that a yoga program that includes relaxation, awareness, and physical activity is useful for community students to help them improve in social adjustment (see Table 2). The games did not include any relaxation or awareness activities, unlike in the yoga group. Games do have beneficial effects and should be played more but my argument is that if games do not include a relaxation activity then it may not have the same effect as asanas. Moreover, teachers can also transform asanas into various games.

In a quantitative experiment carried out on the effects of yogic training on body density in school-going boys (Bera, Rajapurkar & Ganguly, 1990), it was found that boys undergoing yogic practices significantly reduced their percent body fat, and their absolute

fat weight, and also increased significantly their ideal body weight and body density. The experiment was carried out on 40 male boarders, out of 60 boarders, randomly chosen in Grade 8 at Gurukul High School at Lonavala, India. Twenty male students were randomly assigned to the experimental group or yoga group and twenty in the sedentary control group. The mean age of these students was 15.2 years. The yogic training for students in the experimental group was conducted for 45 minute for three days in the evening over a period of one year. The researchers concluded that yogic training is effective in controlling obesity as well as health related disorders in school going boys and thus recommend inclusion of yogic practices in school curriculum for optimum health and fitness (see Table 2).

Uma, Nagendra, Nagarathna, Vaidehi and Seethalakshmi (1989) studied the remedial value of yoga on 45 "mentally retarded" (p.415) children [Contemporary researchers use the term intellectually handicapped, however, in this study the term mentally retarded is used]. All these children with mild, moderate, and severe degree of retardation were chosen from 4 different special schools in Bangalore, India. There were 45 participants, 29 boys and 16 girls, in the experimental group ranging from 6 to 16 years of age chronologically. They were trained for one hour daily in yogic practices such as pranayama, sithilikarana vyayama (loosening exercises), suryanamaskar, asanas, and meditation for 5 days in a week for about 10 months. The control group of 45 children with same chronological age, sex, and IQ were not given any kind of training but continued with their regular school routine. Pre and post test comparisons showed significant improvement in IQ scores and social behavior for mild, moderate, and severe categories of the experimental group. The researchers concluded that the study revealed

improvement in mental ability and social behavior following various yoga practices. The authors interpret this finding as showing that yoga training is an effective remedy for such children. However, it could be argued that any intervention is better than no intervention; therefore, it is not clear that this positive finding can be attributed to yogic training per se.

Gharote (1971), in a study, concluded that yogic training helped the autonomic balance score to shift towards increased parasympathetic function and even after 2 months of discontinued practice of yogic training, a residual effect was still observed. The Merriam-Webster Online dictionary defines autonomic nervous system as the "part of the vertebrate nervous system that innervates smooth and cardiac muscle and glandular tissues and governs involuntary actions (as secretion and peristalsis) and that consists of the sympathetic nervous system and the parasympathetic nervous system". The sympathetic nervous system is defined as "the part of the autonomic nervous system that contains chiefly adrenergic fibers and tends to depress secretion, decrease the tone and contractility of smooth muscle, and increase heart rate". The parasympathetic nervous system is defined as "the part of the autonomic nervous system that contains chiefly cholinergic fibers, that tends to induce secretion, to increase the tone and contractility of smooth muscle, and to slow heart rate, and that consists of a cranial and a sacral part" (see http://www.m-w.com/netdict.htm). Forty four adolescent boys (with a mean age of 15 years; with clinically normal and sound health) from V.P.S. High School in Lonavala, India were divided into two paired groups (experimental and control) on the basis of the index scores from the McCurdy-Larson Organic Efficiency Test. For 50 days during the winter season, the experimental group was trained in various asanas for approximately 30

minutes a day, 6 days a week, either in the morning or in the evening. The control group was not given any training in asanas. However, both the control and experimental group were involved in regular school periods of physical education. After two months, both the groups were examined using the same tests and changes noted. The experimental group was asked to discontinue the yogic exercises for two months. The results showed that the control group showed a mean achievement of 5.92 while the experimental group showed a mean achievement of 13.44 after the tests. The +7.92 difference between the means of control and experimental groups showed significant difference in achievement scores. Apparently this is due to increased parasympathetic function in the experimental group. The present study was based on the work of Wenger who estimated the scores of autonomic balance more than one sigma unit (= 10) above the mean score of 69 as manifesting an apparent predominance in function of the parasympathetic nervous system. At the end of two months the result showed a deviation of 5.52, from a standard mean of 69, lowering of the sympathetic activity for the control group; while the experimental group showed a deviation of 13.44, indicating reduction in sympathetic activity and a relatively higher parasympathetic function. The researcher concluded that yogic training calmed the mind and stabilized the emotional behavior.

In a pilot study on the Kraus-Weber Tests of minimum muscular fitness, (Gharote, 1976), yogic exercises from the National Fitness Corps Syllabus of the year 1965 were administered to an experimental group for 3 weeks for 30 minutes every day except Sundays. The experimental group comprised boarding students from the local high school in Lonavala, India. The experimental group consisted of 4 with an age range of 12 to 20 years. Gharote found improvement in fitness in 3 of the students but no

improvement in 1 student (see Table 2). Gharote suggests a larger sample would be needed to confirm the results of this pilot study.

Telles, Nagarathna and Nagendra (1995) studied visual discrimination through Critical Flicker Fusion Frequency (CFF) on 15 male and 3 female college students in two groups each, with age range from 17 to 22 years. The yoga group received training for 8 hours in a day for 10 days while the control group was not given any training. The training program included asanas, pranayama, kriyas, meditation, devotional sessions, and theoretical lectures on yoga. The yoga group showed significant change in the direction of improved visual perception as compared to the control group by Day 10. The researchers conclude that the higher level of CFF in the yoga group may be due to yoga practice. In a similar study (Ramanavani, Nagarathna, Nagendra, & Telles, 1997) on subjects within the age group of 25 to 39 years, there was a significant increase in CFF noted after 20 and 30 days of yoga training. The researchers observed, however, that the reason that CFF did not increase as quickly as in the previous study might be due to the difference in subjects' age which was higher than that of the subjects of the 1995 study (see Table 2). It is arguable, therefore, that benefits are more quickly realized if yoga training is given at an earlier age. It must be noted that the training imparted in this study was approximately for 8 hours a day for 10 days for the purpose of the study. It is understandable that within most people's daily lives, such training is quite impossible. The curriculum that I propose to develop is, therefore, for 10 minutes a day thrice a week for an academic year, which seems quite reasonable and appropriate for children in kindergarten up to age 12.

Berger and Owen (1992) studied the mood benefits of Hatha Yoga, a non-aerobic exercise, compared to swimming, an aerobic exercise. Out of 87 male and female college students who participated voluntarily, 37 were in swimming classes, 22 in Hatha Yoga classes, and 28 were in lecture-control course. The mean age of yoga class that met in the evening was 29.4 years while in the other three classes (day time yoga, and two swimming classes), mean age ranged from 20.3 to 21.1 years. The swimming and yoga groups practiced for 60 minutes in a week in a class setting whereas the lecture-control class met for 50 minutes thrice a week. All these sessions were during the 14 weeks of a semester. As the three activities were self-selected by students, it may be possible that only males who were psychologically comfortable with yoga enrolled in the course. Men, who personally selected to participate in Hatha Yoga, reported significant decrease in tension, fatigue, and anger after yoga training as opposed to those who did the swimming (see Table 2). Women in the swimming and yoga groups reported similar mood benefits after both of the activities. There was a significant correlation between mood alteration and increased class attendance. One of the major conclusions the researchers made was that presence of aerobic factor in exercise may not be necessary to aid mood benefits. However, it could be argued that the results may be influenced by the students' choice of activity.

In a study carried out by Berger and Owen (1988), the four exercises of Swimming, Body Conditioning, Hatha Yoga, and Fencing were examined to see how they impact stress and mood. After Hatha Yoga exercises, both male and female college students, the participants of this study, reported that they were less anxious, tense, depressed, angry, and confused on all three days of testing following Hatha Yoga as

compared to their reports following the other three exercises. Most students reported yoga to be "a pleasing activity" (Berger and Owen, p.155). Hatha Yoga did not satisfy the aerobic requirement of the taxonomy proposed by the authors. The authors, however, conclude that deep abdominal breathing – an important aspect of yoga "is a key factor in stress reduction" (p.156; see also Berger & Owen, 1992), again suggesting that exercise may not have to be aerobic for reduction in stress.

Khumar, Kaur, and Kaur (1993) carried out a study to see the curative effect of Savasana (corpse pose) on depression. Savasana is used for relaxation. On the basis of two diagnostic tests and personal interviews, 50 university female students, who resided in the residences of Punjabi University, Patiala, India, and who had an age range from 20 to 25 years, were identified with severe depression. After being randomly divided into two groups of 25 each, one of the groups was given training in Savasana early in the morning for half an hour daily for 30 days. The control group did not get any yoga training. Both the groups were evaluated thrice during these 30 days; first before the commencement, second after 15 days of treatment and third after 30 days of treatment. The quantitative analysis showed significant improvement in depression at the end of 15 days and after 30 days of relaxation treatment in the experiment group. No improvement was noted in the control group. The researchers concluded, "Shavasana [*sic*] is an effective and useful technique for totally alleviating or reducing depression to almost normalcy levels in a significant large number of cases" (Khumar et al., p.86; see Table 2). However, it could be argued that any intervention is better than no intervention. It is not clear that this positive finding can be attributed to savasana per se and therefore, would require further research using a control group undergoing some other kind of treatment.

In another study (Telles, Nagarathna, Ramanavani, & Nagendra, 1997) carried out to test reduction of optical illusion among subjects with normal vision, it was found that various Hatha Yoga techniques proved beneficial in the reduction of optical illusion. The difference between reading where lines are actually equal and where subjects feel the lines to be equal is considered as degree of optical illusion. The yoga and control groups had 24 males and 6 female subjects, with 30 subjects in each group. Each group's average age was 28.8 years. The yoga group was given training for 3 hours daily for a month, which included asanas, pranayama, meditation, visual cleansing exercises (one of the techniques in Hatha Yoga), and theoretical lectures on yoga. One of the practices involved focusing and defocusing the gaze on a particular object and on breathing. The researchers concluded that significant reduction in the degree of optical illusion was attributable to the focusing and defocusing practice, a Hatha Yoga technique.

In another study, carried out on 10 male soldiers with a mean age of 24.9 years, a significant change for the better in heart rate, blood pressure and average skin temperature was observed following various yoga practices for three months (Joseph, Sridharan, Patil, Kumaria, Selvamurthy, Joseph, & Nayar, 1981). The researchers concluded that "regular yogic practice for three months results in a gradual shift of the autonomic equilibrium towards a relative parasympathodominance" (p.123).

Weintraub (2000) notes that persuasive evidence of the benefits of Hatha Yoga especially pranayama stems from research conducted by the National Institute of Mental Health and Neuroscience in India. New studies have shown 73% of success rate for treating depression using pranayama, a technique of breathing in Hatha Yoga. However, Weintraub did not specify the subjects, gender, or their age.

In their booklet, Sexton and Poling (1973) cite evidence from studies which have reported that intelligence can be trained in adults and children having normal physiology and a highly persistent tutor. One of the methods to increase mental efficiency mentioned by Sexton and Poling, is simple relaxation training as taught in yoga practices.

Based on this review of the research literature, it appears that the practice of asanas even for 10 minutes a day might have significant benefits. Generally it is advisable to exercise in order to stay fit and in shape. Asanas, also a form of exercise, serve this purpose. Many other forms of exercise, however, may not affect simultaneously the physical, mental, and intellectual, as well as moral and deeper spiritual elements as asanas do. Asanas not only strengthen and tone the body, it also is reported to bring flexibility to the joints of the body. Researchers and practitioners have found that asanas help people to remain calm yet active thus reducing mental stress. As practice of asanas brings awareness within and without, individuals develop a positive attitude, increased self-esteem, and such for oneself and their surroundings. Asanas also appear to aid learning, which benefits the student, teacher, and parents. Teachers will, therefore, have more organized and controlled classes in addition to more joy in teaching. As asanas are for both boys and girls, teachers and educators will not have to worry about designing and applying separate activities for both genders. Moreover, asanas are fun so everyone in the class can participate. Even those students who are physically weak can readily participate, as asanas require minimum energy. The teachers can create games based on asanas, which allow participation of the whole class.

Methods

Following is a description of the methodology for this project. First the participants and ethical considerations are described. Next my personal experience and the reasons for selecting the poses are given. Then the photo shoot procedure and the preparation of draft are described. It also includes suggestions of how asanas can be incorporated in the classrooms and across the curriculum. Finally, plans for the dissemination of the project is given, followed by written illustrated instructions that describe how the asanas are to be done.

Participants

The participants for the yoga poses were a local schoolteacher, Ms. Maggee Spicer and her adult daughter, Ms. Jesse Thompson, who are practitioners and teachers of yoga. Ms. Spicer is a Grade One teacher and teaches asanas to her students. Ms. Thompson, who teaches yogasana to elementary children at the local YMCA, posed for most of the poses. Ms. Spicer also demonstrated 4 yoga poses. All the poses were shot at their home based local studio.

Ethical Considerations

To my knowledge, the photo shoot activity did not present any risk to the demonstrators. However, prior to the photo shoot session, permission was obtained from the Ethics Research Approval Board of the University of Northern British Columbia. I had provided the Ethics Board the summary of the project, the information sheet (Appendix A), the consent form (Appendix B), and the waiver (Appendix C) for the demonstrators. Participation in the photo shoot activity was voluntary and could be

withdrawn at any time without giving any reasons. The photographs were retained in a secured location with me.

Personal Knowledge and experience

I received training in asanas in my elementary school years (Grades 1-7), but it has been only recently that I became a serious student, incorporating asanas in my daily routine. I have been a regular practitioner of various asanas for more than a year now. In the beginning I started off with the practice for only 10 minutes. Now, I usually practice asanas early in the morning for approximately 45 minutes. Sometimes, my time still permits sessions of only 10 minutes. Even if I practice for only 10 minutes I have observed the effects of asanas to last throughout the day.

I never thought of taking lessons on yogasanas in Prince George from a yoga teacher. Nor did I ever think of focusing on yogasanas for elementary school students as my topic of project when I began my studies in the M.Ed program. After receiving training through a yogasanas class taught in the fitness center at UNBC, I felt the benefits in various ways, which stimulated my interest in the theoretical area of Hatha Yoga. I read several books written by Westerners, as well as writers from India. I found asanas quite helpful to my academic studies. I began to observe various subtle and obvious changes of which I shall mention a few. My concentration improved, with the result that I could sit for longer sessions with improved focus to work on my assignments. I am able to cultivate more interest in my studies than before. Comprehension was easier than before. I feel that my memory power and patience improved. I felt fresh and energetic after each yoga session. My physical strength has improved and I feel less tired after a dance performance than before. I am more aware of my food choices than before. I am

less tired by the end of the day, even after a hectic day. I am automatically reminded to take long and deep breaths, which I had to do consciously before. Because I felt the benefits of asanas with only 10 minutes practice per day, I decided to design a curriculum for children based upon 10 minutes per day.

Reasons for selecting the poses

Forty-two poses are included in this project. The reasons for selecting them are as follows:

1) Generally, asanas cover the basic positions of standing, sitting, forward bends, twists, inversions, back bends, balancing, and lying down. Care has been taken to include at least one fundamental pose from each of the above categories suitable to an introductory course.
2) Most of the poses are natural objects, creatures, and geometrical figures. Children will have more fun learning and practicing such poses.
3) Most of these poses are easy to learn.
4) Most of these poses can be performed in the classroom, thus avoiding commuting between the gym class and regular class.

Photo Shoot Procedure

As already mentioned, I had the list of asanas prepared prior to the photo shoot. Being a practitioner myself, I wrote instructions for each one of the poses before the session. Writing instructions on my own should not be considered an issue of copyright infringement. As mentioned earlier asanas were handed down orally. Therefore, as communicated to me personally by Ms. Spicer, the yoga teacher (Oct. 16, 2002) the written instructions are not a copyright of any particular text.

I took the yoga poses on a Toshiba Digital Still Camera, Model No. PDR-M71. This model has a memory of 64 MB with 3.2 pixels, which can take approximately 79 full size images. The recording medium was Smart Media Card (3.3V). The lens is 2.8X optical zoom lens. The weight of this camera is approximately 8.5 oz (excluding the batteries and smart media card). A Digital Camera makes editing of the photographs much easier than a camera using traditional photographic films. One of the features is that this camera is easy to rewind and fast forward in playback mode. The participants and I viewed each photograph to decide to keep it or not. If a photograph was not well taken, then I deleted that particular photograph and retook the photograph in the same pose. The whole session lasted for more than three hours. Once the photographs were taken, I downloaded them on my personal computer using the Image Expert Images program that was packaged with this camera. I inserted the photographs directly in the Microsoft Word Document of my project.

Draft Procedure

After the download, I viewed each image on the computer to search for and to remove unwanted items such as books lying on the floor, wall-mirror, and other such things. Images were cropped to get rid of unwanted details; and resized according to the university requirements, and also to fit the written document. After the images were resized, each image was inserted along with its appropriate written instructions in the word document. As the document size increased with many images, it took more than 10 minutes to save the file.

Finally the document was fixed with appropriate photographs. A format for presentation of each pose was decided. The format is in the following steps: 1) Name of

the pose, 2) Photograph of that pose in the final stage, 3) Written text, 4) Note wherever necessary, and finally, 5) Benefits. These benefits have been adapted from Chanchani & Chanchani (1995). Certain poses have more than one photograph i.e. intermediate poses because photographs are more explicit than words. Each photograph is numbered to make it easier to correspond with the steps of written instructions.

Beside the name of each pose there is an asterisk (*), which indicates the appropriate context for using the poses in the classroom. Poses with one asterisk can be done sitting at a desk. These poses will make use of the arms only, as in the written instructions. Poses with two asterisks can be done while standing beside the desk. Poses with three asterisks can be done in the classroom. After creating space in the classroom, by removing desks and chairs, children can stand in a circle to do these poses. Poses with one, two, and three asterisks can also be taught in between regular classes and are not limited to gym classes. Poses with four asterisks require more space and will also require support of a wall or a window. It would be best if these poses were done in open spaces like a gymnasium.

Four appendices include more suggestions of how to learn and practice the poses, and have fun. Appendix D has an adapted story from Chanchani & Chanchani (1995), which incorporates one pose in the form of a story. Each story told by Chanchani & Chanchani incorporates one pose at a time. The teacher can tell this story to her students, which offers an opportunity to do poses, presented in this project. Teachers can refer to Chanchani & Chanchani for more such stories.

Appendix E contains a traditional tale with various poses incorporated into the tale. Ms. Thompson retold this traditional tale in a personal communication (March 26,

2003) with me. Teachers can also weave other stories around various poses to make it more interesting and full of fun.

Appendix F contains how an asana can be incorporated into a game, which has been adapted from Stewart and Phillips (1992). For example, using the dog pose, children can make a tunnel and each child can pass through the tunnel until each one gets his/her turn (see Figure 79). Teachers can refer to Stewart and Phillips (1992) for more ideas on games. Pantomime is also a fun-filled activity. A student can pantomime an asana in front of other students to guess the name of the asana (see Carr, 1973).

Appendix G provides a plan based on asanas, which can be done for 10 minutes thrice a week during a calendar year. Teachers can follow this plan in their classrooms and/or in the gym class. If the teacher wants to follow this plan in the classroom then she/he may do all those poses except the poses with four asterisks.

Interdisciplinary Applications.

Teachers can use these poses across the curriculum. In a math class, the teacher can make use of Utthita Trikonasana (Triangle pose) to teach the shape of a triangle. She may ask children to count the angles in that pose and may even want them to measure each triangle.

In science, the teacher may ask students to measure their pulse rates before and after the practice of asanas, thereby leading to knowledge of circulatory system. The Savasana (corpse pose) is particularly suitable for measuring the pulse rates. The children can observe also the change in their and other student's respiration rates at the same time, by lying in Savasana (corpse pose) with their hands on their own stomach and their head

on the other's abdomen (see Stewart & Phillips, 1992, p. 115). In this way, students can learn about general physiology from the practice of asanas.

Savasana (corpse pose) can be used for imaginative experiences and visualization. Once the students are in this pose, the teacher can use a short imaginative story. This will help students to imagine and relax simultaneously. As stated above, according to one study imaginative experiences and relaxation have been found beneficial for reading disabled elementary students (see Frey, 1980).

In art, the teacher can ask children to draw different poses using straight lines. Children can use modeling clay with toothpicks inserted in the clay to model the poses. During practice, soft music can be played in the background and the teacher can later ask children to evaluate the music they hear, including the tempo, rhythm, and mood.

The teacher can use the asanas to show relationships between human beings and the natural world. She can point out to children that most of the poses are derived from the natural world, teaching human beings to incline more towards nature. For example, Tadasana (mountain pose) teaches that one should learn to remain strong like a mountain.

Cultural values can be learned from asanas. As these poses are embedded in the history and culture of India, the teacher can lead to a historical or cultural topic on India during her history class. Similarly cultural values of other nations can also be discussed to find out similarities and/or differences.

If the teacher likes, she may use a song or poetry to incorporate the poses. Instead of relating a story incorporating pose(s), she can sing a song incorporating a pose in the classroom. Teachers can refer to Carr (1973) for short poems. The short description she has used describing various poses in her book can be used in the form of short poems.

Dissemination of the curriculum

It is important that this curriculum be distributed to teachers across BC. I plan to arrange for a demonstration workshop for teachers in one of the schools in Prince George. During the workshop various asanas will be shown, suggestions will be made of how to incorporate them in the classroom and across curricula, how stories can be told incorporating asanas, and an abbreviated version of the curriculum presented in a booklet will be distributed at the same time. I also plan to provide a copy of my complete work to District Resource Center in School District 57 in order to make the work available to other interested classroom teachers.

Written Illustrated Instructions

The text of written illustrated instruction begins on page 55. Each pose starts on a new page. The name of the pose is written in the classical Sanskrit language, and the closest translation of the Sanskrit name is given in parenthesis in English. For example, Tadasana is the Sanskrit name translated as 'Standing Still; as a mountain' in English. 'Tada' means a mountain and it also means standing still as a mountain. Asana means pose. Tadasana is not translated as mountain because there is a pose named 'Parvatasana' and parvata literally means mountain in English. Therefore, all the poses have been given closest translated name in English.

Tadasana (Standing Still; as a mountain)**

Figure 1: Tadasana.

1) Stand erect with your feet joined together. Let your heels and big toes touch each other. Stretch your arms downwards with your palms facing your thighs.
2) Firm your knees and elbows. Widen your chest by pulling your shoulders back.
3) Look straight ahead. Keep the throat and the face relaxed. Bring your attention to your whole body. Breathe normally. Stay in this final pose, Tadasana (as in Figure 1) for 2 to 3 breaths.

Note: Tadasana is fundamental in all the standing poses.

Tadasana (Standing Still) continued

Benefits (adapted from Chanchani & Chanchani, 1995; p. 36):

- Tadasana teaches how to balance the whole body weight evenly on both feet and thus teaches how to stand correctly.
- It makes the back straight and strong.
- It makes the mind alert.

Urdhva Hastasana (Upward Stretch)**

Figure 2: Urdhva Hastasana.

1) Stand erect and tall (as in Tadasana).
2) Raise your arms above your head with your palms facing each other. Breathe normally. Stay in this final pose, Urdhva Hastasana (as in Figure 2) for 2 to 3 breaths.

Benefits (p. 36):

- Urdhva Hastasana teaches how to distribute body weight evenly on both feet and makes the body straight and strong.
- It lengthens the torso.
- It makes the mind alert.

Uttanasana (Intense stretch)***

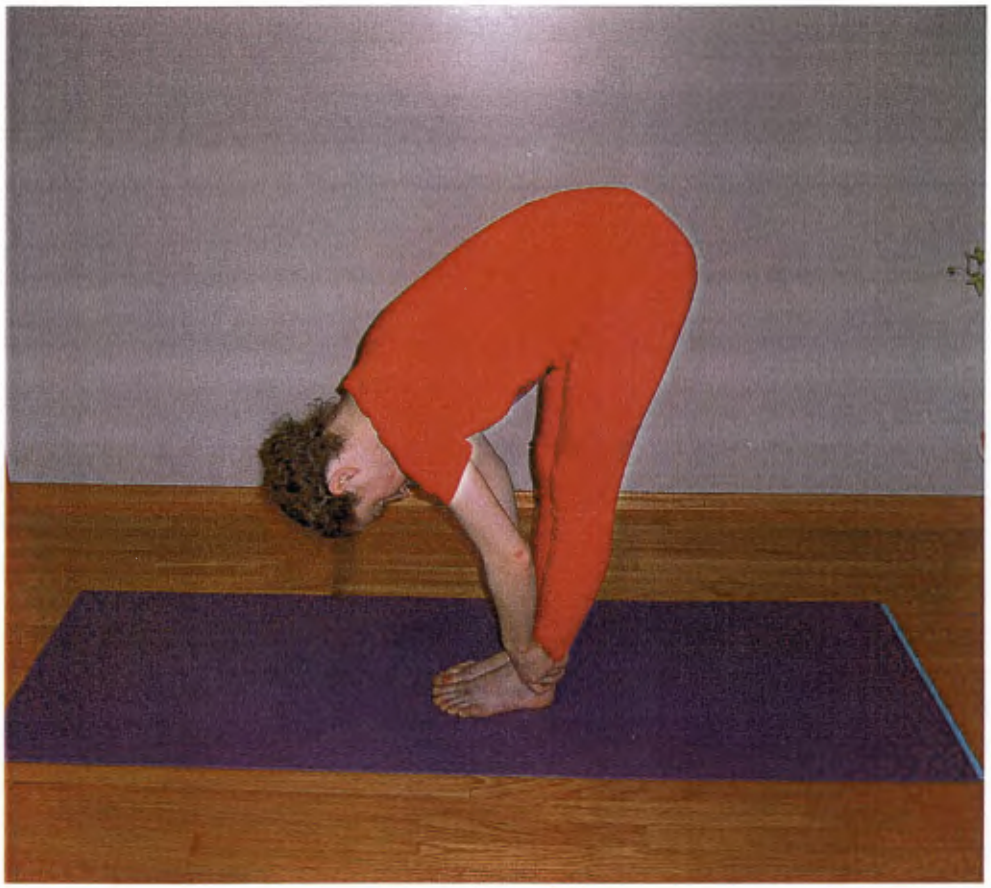

Figure 3: Uttanasana.

1) Stand erect and tall (as in Tadasana).
2) Keeping your legs straight and firm, bend your torso forward. Let your hands touch your toes or your ankles. Keep the thighs and kneecaps tight. Bend as much as possible. Breathe normally. Stay in this pose, Uttanasana (as in Figure 3) for 2 to 3 breaths.
3) If possible, bend more and try to put your hands by the sides of your feet. Let your head touch your knee. Do not stiffen your neck, but keep your head hanging loose. Stay in this final pose (photograph not shown) for 2 to 3 breaths.

Uttanasana (Intense stretch) Continued

Benefits (p. 54):

- Uttanasana reduces fatigue, and helps to improve concentration.
- It helps exercise the internal organs such as stomach, liver, kidneys, and heart.

Vrksasana (Tree)***

Figure 4: Vrksasana.

1) Stand erect and tall (as in Tadasana).
2) Keep the left leg straight and bend your right knee. Hold your right foot and place it on the inside of your upper left thigh. Keep your bent knee pointing to the side rather than forward (as in Figure 5).

Vrksasana (Tree) continued

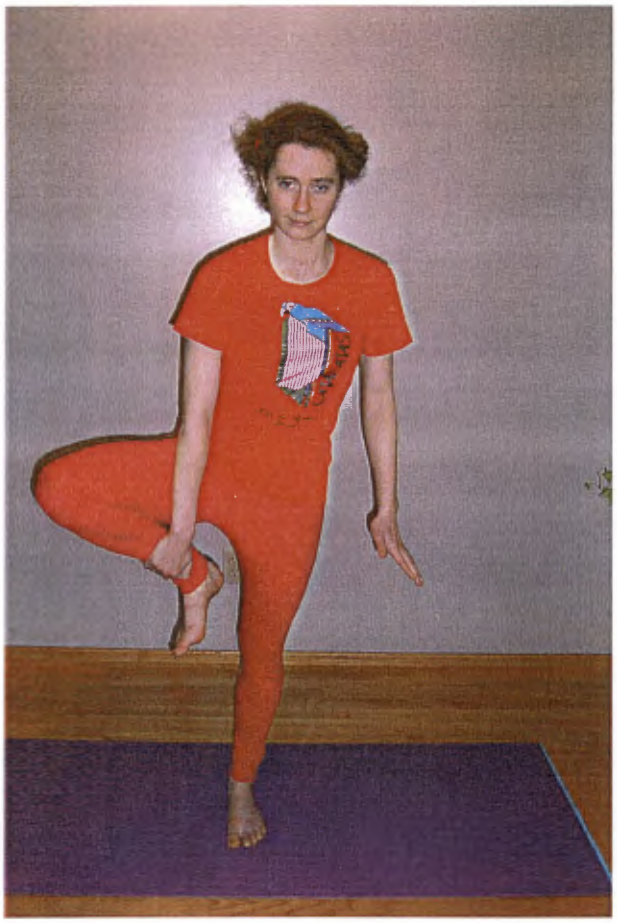

Figure 5

3) Balance on your left foot and place your hands on your hips. If balancing is difficult, then support yourself against the wall.
4) Slowly raise your arms over your head with palms joined together. Imagine yourself as a tall tree with roots deep down into the ground. Breathe normally. Stay in this final pose, Vrksasana (as in Figure 4) for 2 to 3 breaths.
5) Come down standing erect and tall (as in Tadasana) and repeat the pose on the other side with the left leg raised.

Benefits (p. 37):

- Vrksasana improves concentration and balance.
- It strengthens the shoulders and legs.

Utkatasana (Mighty)**

Figure 6: Utkatasana; Side View.

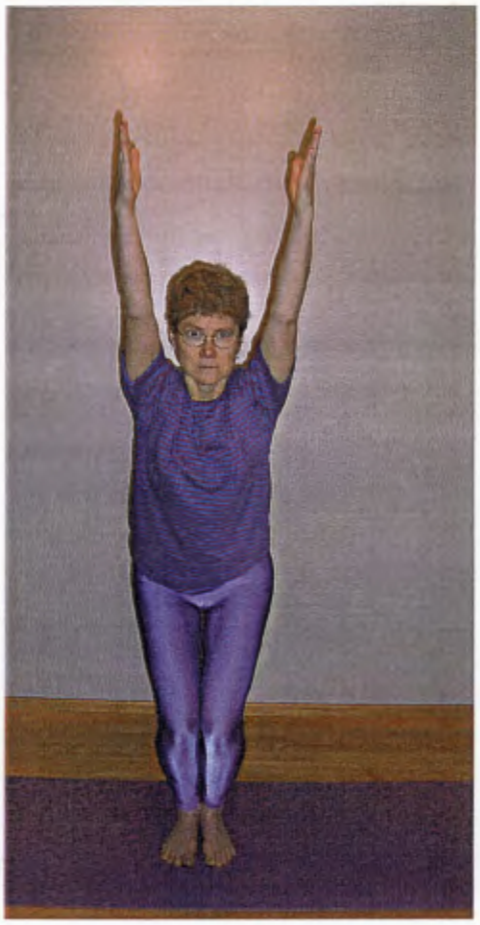

Figure 7: Utkatasana; Front View.

1) Stand erect and tall (as in Tadasana).
2) Raise your arms upwards with palms facing each other. Looking straight ahead, bend your knees.
3) Imagine you are sitting on a chair (as in Figure 6; side view). Do not lean forward. Breathe normally. Stay in this final pose, Utkatasana (as in figure 7; front view) for 2 to 3 breaths.

Benefits (p. 38):

- Utkatasana strengthens the ankles, calves, inner thighs, and back.

Garudaasana (Eagle)*/**/***

Figure 8: Garudaasana.

1) Stand erect and tall (as in Tadasana).
2) Bend both your knees. Cross your right leg over your left leg and wrap it around your left leg.
3) Bend both arms. Cross your left arm over the right arm at the elbow. Breathe normally. Stay in this final pose, Garudaasana (as in Figure 8) for 2 to 3 breaths. Remember the wrapping of the leg and arm is always the opposite.
4) Come out of the pose and repeat the pose on your left side.

Garudaasana (Eagle) continued

Note: In the beginning you may want to learn to wrap your arms only. Then learn to wrap your legs and finally both together.

If you cannot balance on one leg, then support yourself against the wall.

Benefits (p. 39):

- Garudaasana increases ankle strength.
- Relieves cramps in the calves.

Utthita Trikonasana (Triangle)****

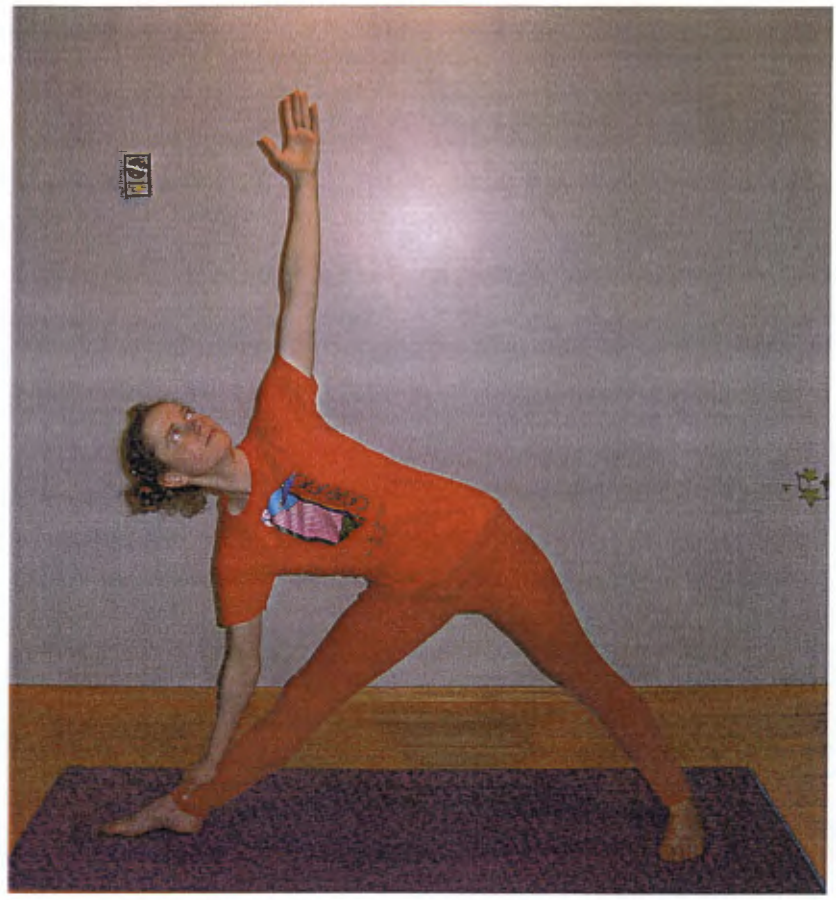

Figure 9: Utthita Trikonasana.

1) Stand erect and tall (as in Tadasana).
2) Spread your legs 2 to 3 feet (approximately 0.75 meter to 1 meter) apart with toes pointing forward. Remember to maintain a straight alignment. Spread your arms sideways with palms turned down (as in Figure 10).

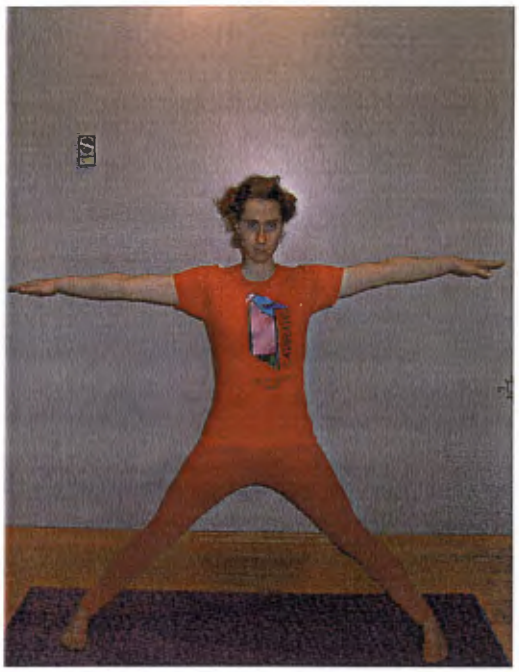

Figure 10

3) Turn your right foot out 90 degrees and your left foot in slightly (as in Figure 11).

Figure 11

4) Lengthen your spine to the right as you bend over sideways. Place your right palm on your right ankle. Raise your left arm up and look up at your fingertips. Do not bend your knees or your elbows. Breathe normally. Stay in this final pose, Utthita Trikonasana (as in Figure 9) for 2 to 3 breaths.
5) Slowly come up and return to position described in step 2. Turning your left foot out 90 degrees and your right foot in slightly, follow step 4 and repeat the pose on the left side.

Note: The measurement for spreading the leg 2 to 3 feet apart is for exactness. However, for children it should not be imposed. They should be instructed to place feet apart as appropriate according to their age and height. It applies for all the poses where exact measurement is given.

Benefits (p. 40):

- Utthita Trikonasana helps to improve the arches of the feet.
- It shapes the legs, and strengthens the ankles.
- It builds up the chest.

Utthita Parsvakonasana (Side angle stretch)****

Figure 12: Utthita Parsvakonasana.

1) Stand erect and tall (as in Tadasana).
2) Spread your legs 3 to 4 feet (approximately 1 meter to 1.3 meters) apart with toes pointing forward. Remember to maintain a straight alignment. Spread your arms sideways with palms turned down (as in Figure 10).
3) Turn your right foot out 90 degrees and your left foot in slightly (as in Figure11). Bend your right knee to form a right angle. Do not bring your bent knee forward. Keep your left leg straight.

Utthita Parsvakonasana (Side angle stretch) continued

4) Place your right fingertips or your palm on your right ankle. Raise your left arm over the ear with palm facing down. Keep your elbows straight. Look straight or up at your fingertips. Breathe normally. Stay in this final pose, Utthita Parsvakonasana (as in Figure 12) for 2 to 3 breaths.
5) Slowly come up and return to the position described in step 2. Turning your left foot out 90 degrees and your right foot in slightly follow step 4 to repeat the pose on the left side.

Note: In Figure 12, the pose is shown being done on the left side.

Benefits (p. 42):

- Utthita Parsvakonasana strengthens leg muscles and joints.
- It helps to build up stamina.
- A very good pose for athletes.

Virabhadrasana I (Warrior I)****

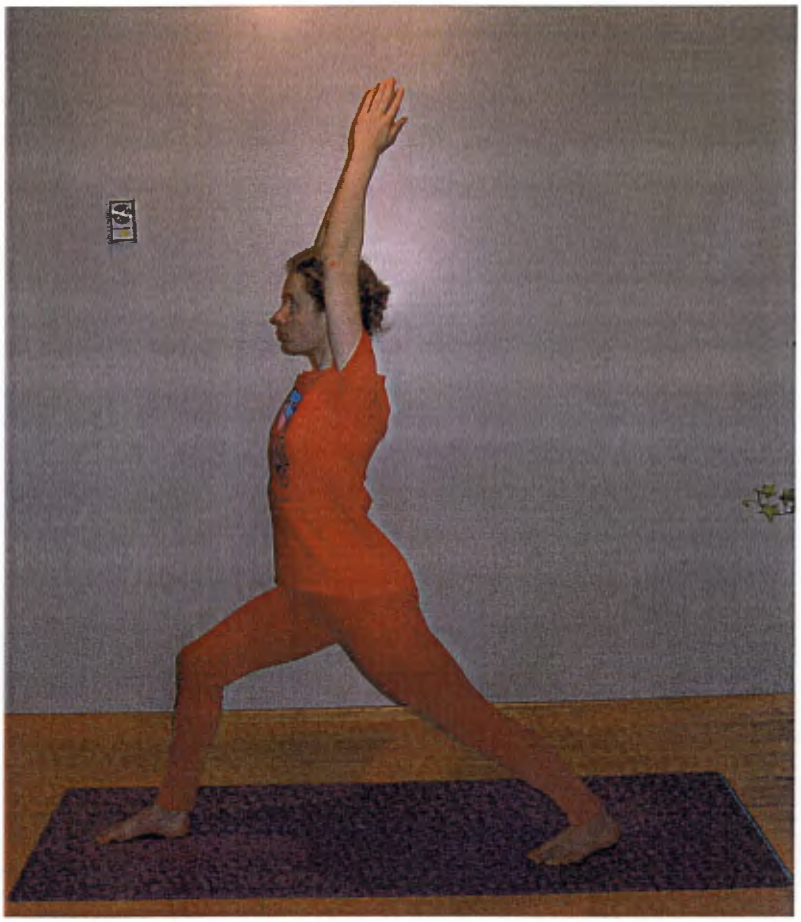

Figure 13: Virabhadrasana I.

1) Stand erect and tall (as in Tadasana).
2) Spread your legs 3 to 4 feet (approximately 1 meter to 1.3 meters) apart with toes pointing forward. Maintain a straight alignment. Spread your arms sideways with palms turned down (as in Figure 10).
3) Turn your palms up and raise your arms, keeping the elbows straight (as in Figure 14).

Virabhadrasana I (Warrior I) continued

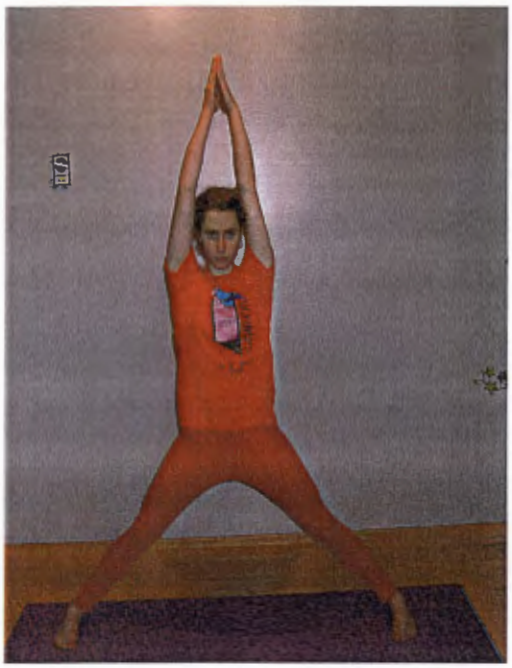

Figure 14

4) Turn your right foot out 90 degrees and your left foot in 45 degrees. Rotate your hips, turning your trunk to the right. Do not lean forward (as in Figure 15).

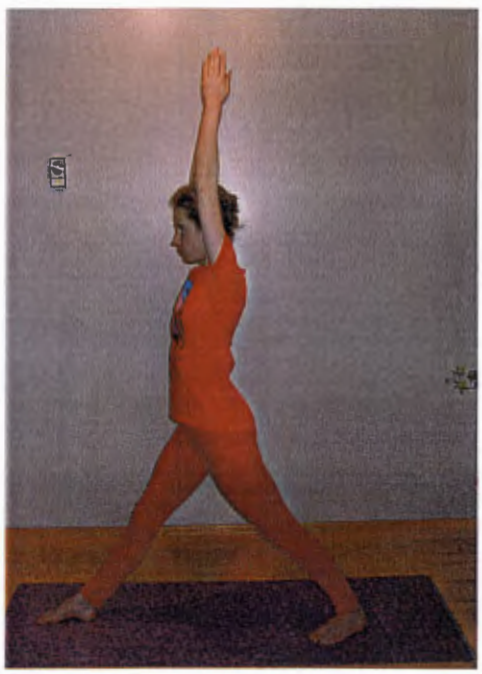

Figure 15

5) Bend your right knee to form a 90 degrees angle. Keep the left leg straight. Look straight at the wall or up at your fingertips. Like a warrior, remain firm and strong. Breathe normally. Stay in this final pose, Virabhadrasana I (as in Figure 13) for 2 to 3 breaths.
6) Slowly come up and return to the position described in step 3. Turning your left foot out 90 degrees and your right foot in 45 degrees, follow step 5 on the left side.

Benefits (p. 44):

- Virabhadrasana I helps to increase stamina.
- It helps to develop the lungs and chest.
- It strengthens the shoulders and the back muscles.

Virabhadrasana II (Warrior II)****

Figure 16: Virabhadrasana II.

1) Stand erect and tall (as in Tadasana).
2) Spread your legs 3 to 4 feet (approximately 1 meter to 1.3 meters) apart with toes pointing forward. Maintain a straight alignment. Spread your arms sideways with palms turned down (as in Figure 10).
3) Turn your right foot out 90 degrees and your left foot in slightly (as in Figure11).

Virabhadrasana II (Warrior II) continued

4) Form a right angle by bending your right knee. Keeping the left leg straight, turn your head to look at your fingertips. Do not lean forward or sideways. Breathe normally. Stay in this final pose, Virabhadrasana II (as in Figure 16) for 2 to 3 breaths.

5) Slowly come up to return to the position described in step 2. Turning your left foot out 90 degrees and your right foot in slightly follow step 4 to repeat the pose on the left side.

Note: It is generally recommended that you first learn Virabhadrasana II before learning Virabhadrasana I because this pose is easier to do than Virabhadrasana I. Moreover, Virabhadrasana II prepares the body to perform various challenging poses.

Benefits (p. 45):

- Virabhadrasana II makes the legs strong.
- It strengthens the back and stomach muscles.

Virabhadrasana III (Warrior III)****

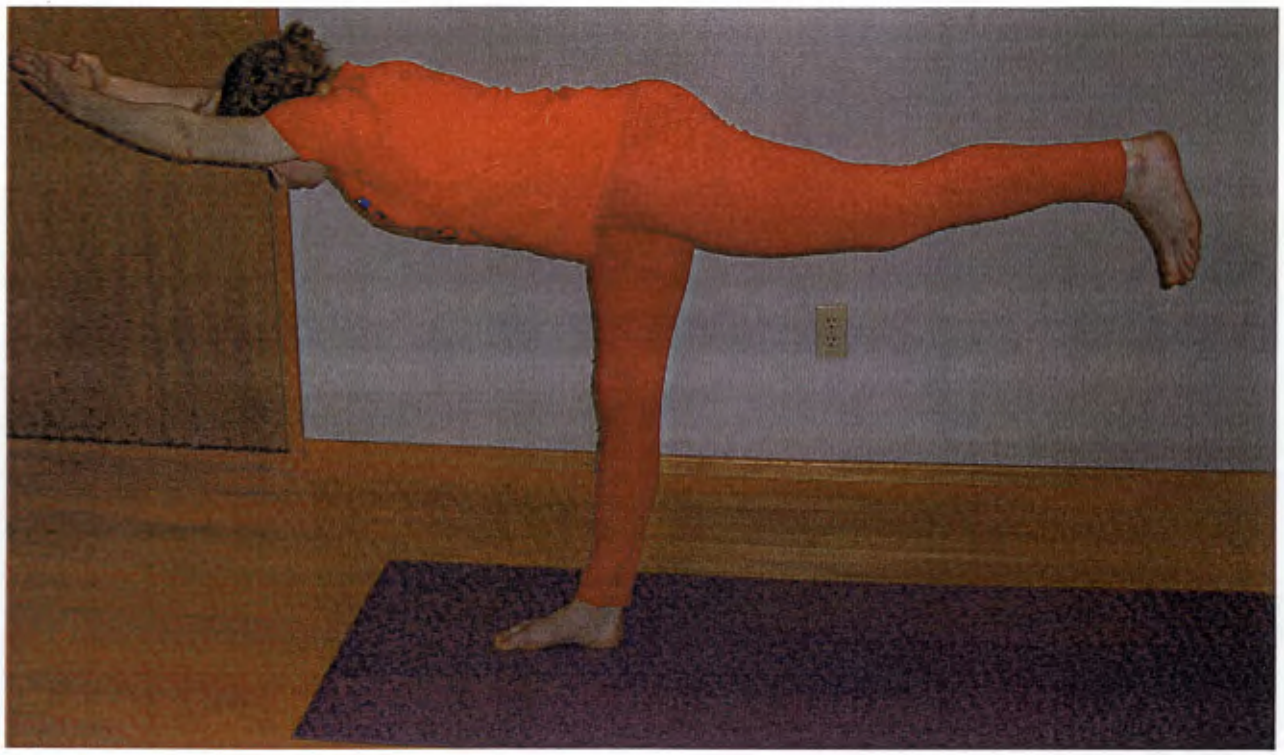

Figure 17: Virabhadrasana III.

1) Stand erect and tall (as in Tadasana).
2) Spread your legs 3 to 4 feet (approximately 1 meter to 1.3 meters) apart with toes pointing forward. Remember to maintain a straight alignment. Spread your arms sideways with palms turned down (as in Figure 10).
3) Turn your palms up and raise your arms, keeping the elbows straight (as in Figure14).
4) Turn your right foot out 90 degrees and your left foot in 45 degrees. Rotate your hips, turning your trunk to the right. Do not lean forward (as in Figure 15).
5) Bend your right knee to form a 90 degrees angle. Keep the left leg straight.

Virabhadrasana III (Warrior III) continued

6) Now, folding forward let your chest rest on your thigh with your arms stretched forward (as in Figure 18).

Figure 18

7) Slowly lift your left leg off the floor and straighten your right leg, taking care to maintain your balance. Do not bend your knees or elbows. Do not move the foot on which you are standing. Breathe normally. Stay in this final pose, Virabhadrasana III (as in Figure 17) for 2 to 3 breaths. If it is difficult to maintain your balance, then support yourself with your hands on something such as a bookshelf (as in Figure 19) or a chair back or a table.

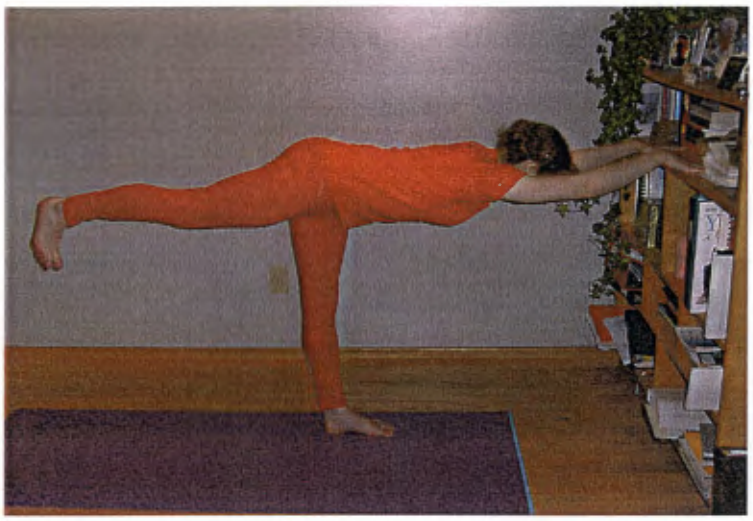

Figure 19

8) Slowly come down and return to the position described in step 3, with arms raised above your head. Turning your left foot out 90 degrees and your left foot in 45 degrees, follow steps 4-7 on the left side.

Benefits (p. 47):

- Virabhadrasana III helps to improve balance and concentration.
- It builds strength and stamina.

Ardha Chandrasana (Half Moon)****

Figure 20: Ardha Chandrasana.

1) Stand erect and tall (as in Tadasana).
2) Spread your feet 2 to 3 feet (approximately 0.75 meter to 1 meter) apart with toes pointing forward and arms on the side (as in Figure 10).
3) Turn your right foot out 90 degrees and your left foot in 45 degrees. Lengthen your spine to the right as you bend over sideways. Place your right palm on your right ankle. Raise your left arm. Do not bend your knees or your elbows. This will be the same position as in Utthita Trikonasana; Figure 9.

Ardha Chandrasana (Half Moon) continued

4) Slightly bend your right knee and support yourself with your right fingertips in front of the knee (as in Figure 21).

Figure 21

5) Bring your left foot 2 steps in. Lift your left leg off the floor and then straighten your right leg. Look straight ahead or at your fingertips. Breathe normally. Stay in this final pose, Ardha Chandrasana (as in Figure 20) for 2 to 3 breaths.

6) Return to position described in step 3 and repeat steps 4-5 on the left side.

Note: In Figure 20, the pose is shown being done on the left side.

If balancing is difficult, then support yourself against the wall.

Benefits (p. 49):

- Ardha Chandrasana develops the legs.
- It strengthens the lower back and pelvic region.

Prasarita Pada Uttanasana (Intense leg spread)****

Figure 22: PrasaritaPadaUttanasana, Front View.

Figure 23: Rear View.

1) Stand erect and tall (as in Tadasana).
2) Spread your legs 3 to 4 feet (approximately 1 to 1.3 meters) apart with toes pointing forward.
3) Keeping your back straight, bend down your torso and put your palms on the floor with fingers pointing forward (as in Figure 24). Look down or straight ahead.

Figure 24 Prasarita Pada Uttanasana (Intense Leg Spread) continued

4) Walk your hands between your feet. Slowly rest the crown of your head on the floor. Do not bend your knees. Breathe normally. Stay in this final pose, Prasarita Pada Uttanasana (as in Figure 22; the rear view looks as in Figure 23) for 2 to 3 breaths.

Benefits (p. 51):

- Prasarita Pada Uttanasana reduces fatigue.
- It helps to strengthen arches.
- It relieves cramps in the calves.

Chaturanga Dandasana (Plank)***

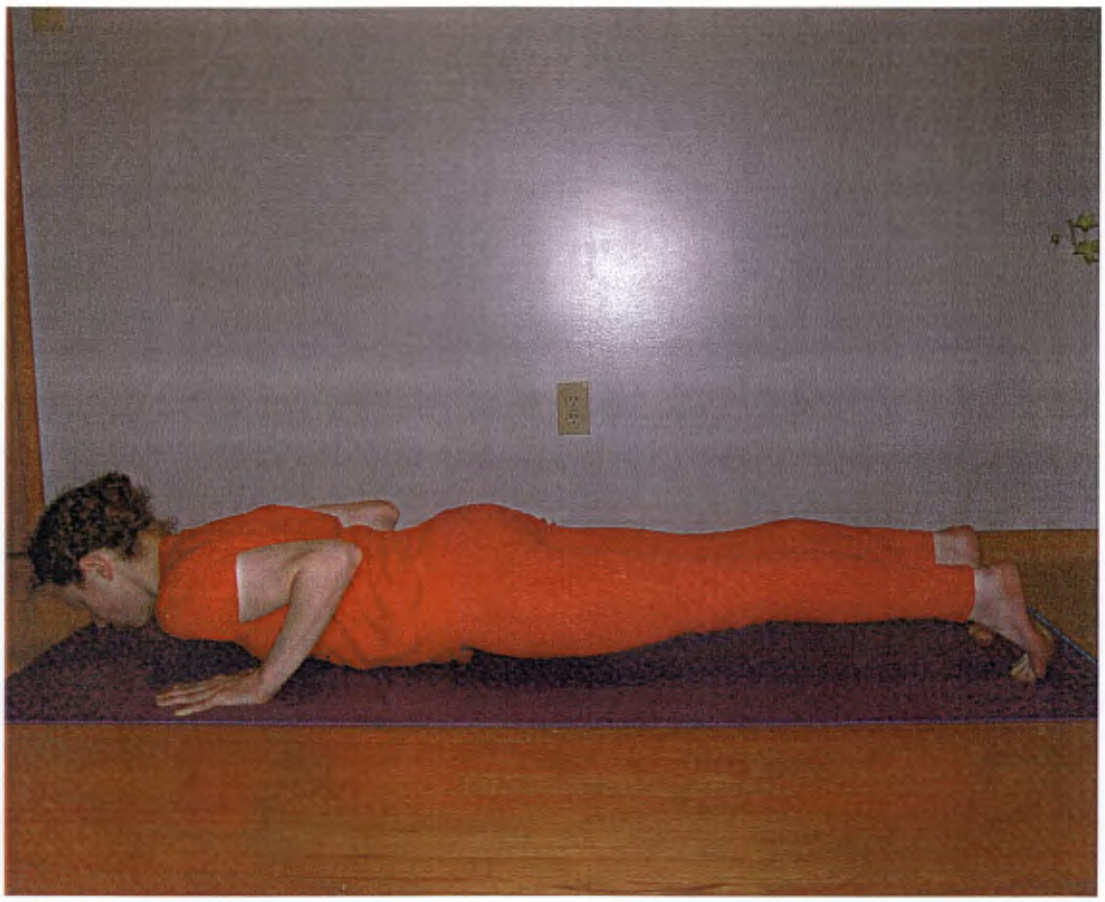

Figure 25: Chaturanga Dandasana.

1) Gently lie down on your stomach. Let your palms rest beside your chest with fingers pointing forward.
2) Slightly raise your body off the floor in the same way, as you would do a push up, remaining straight and parallel to the floor. Breathe normally. Stay in this final pose, Chaturanga Dandasana (as in Figure 25) for 2 to 3 breaths.

Benefits (p. 55):

- Chaturanga Dandasana helps to strengthen muscles of the arms and shoulders.

Adho Mukha Svanasana (Dog)****

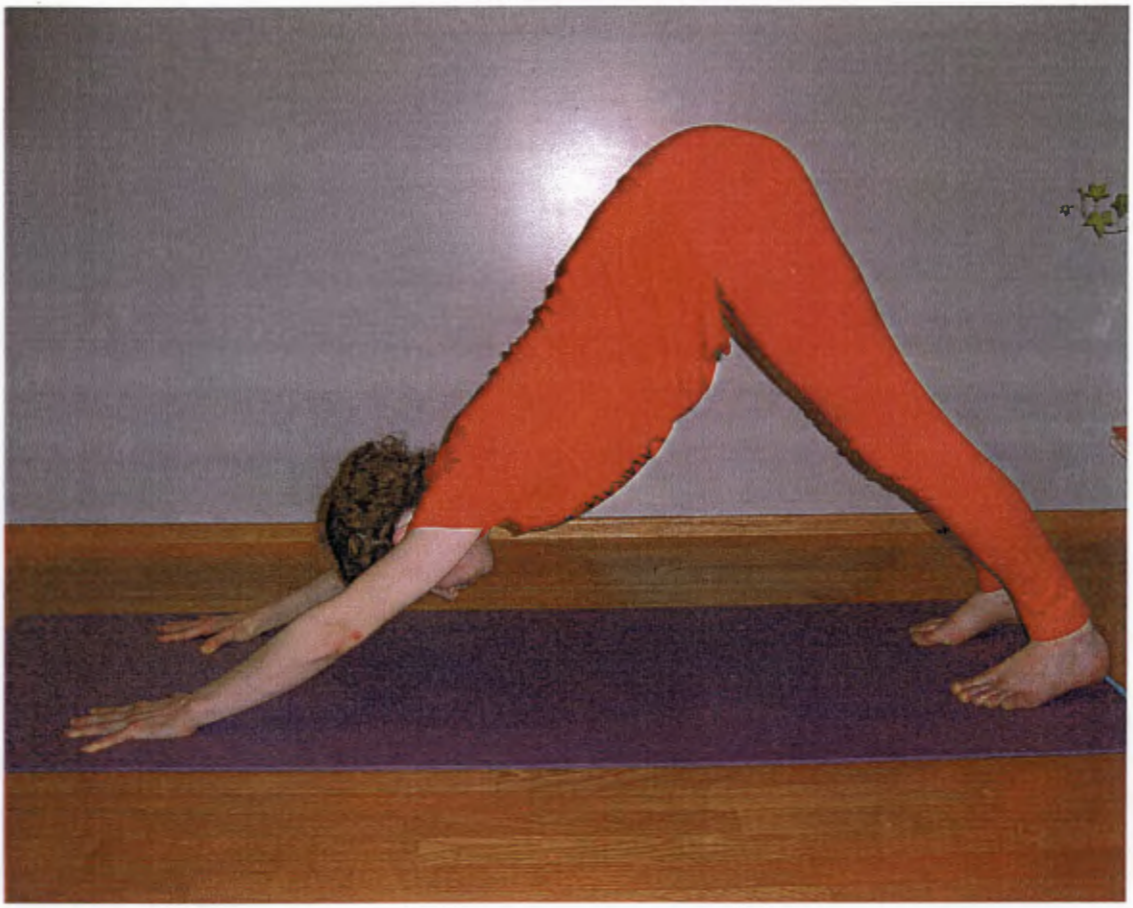

Figure 26: Adho Mukha Svanasana.

1) Stand erect and tall (as in Tadasana) and then bend forward until palms are on the floor.
2) Slowly take big steps backwards (one at a time) with your feet approximately 12 inches apart. Keep your fingers and toes spread and pointed forward (as in Figure 27).

Figure 27

3) Without bending your knees and elbows, slowly raise your trunk, keeping your arms and legs stretched. Bring your head to the floor. This shape will look like an inverted 'V'. Breathe normally. Stay in this final pose, Adho Mukha Svanasana (as in Figure 26) for 2 to 3 breaths.

Benefits (p. 56):

- Adho Mukha Svanasana tones the leg muscles.
- It helps to reduce fatigue and refreshes a tired brain.
- It is a good pose for runners.

Urdhva Mukha Svanasana (Dog stretch)****

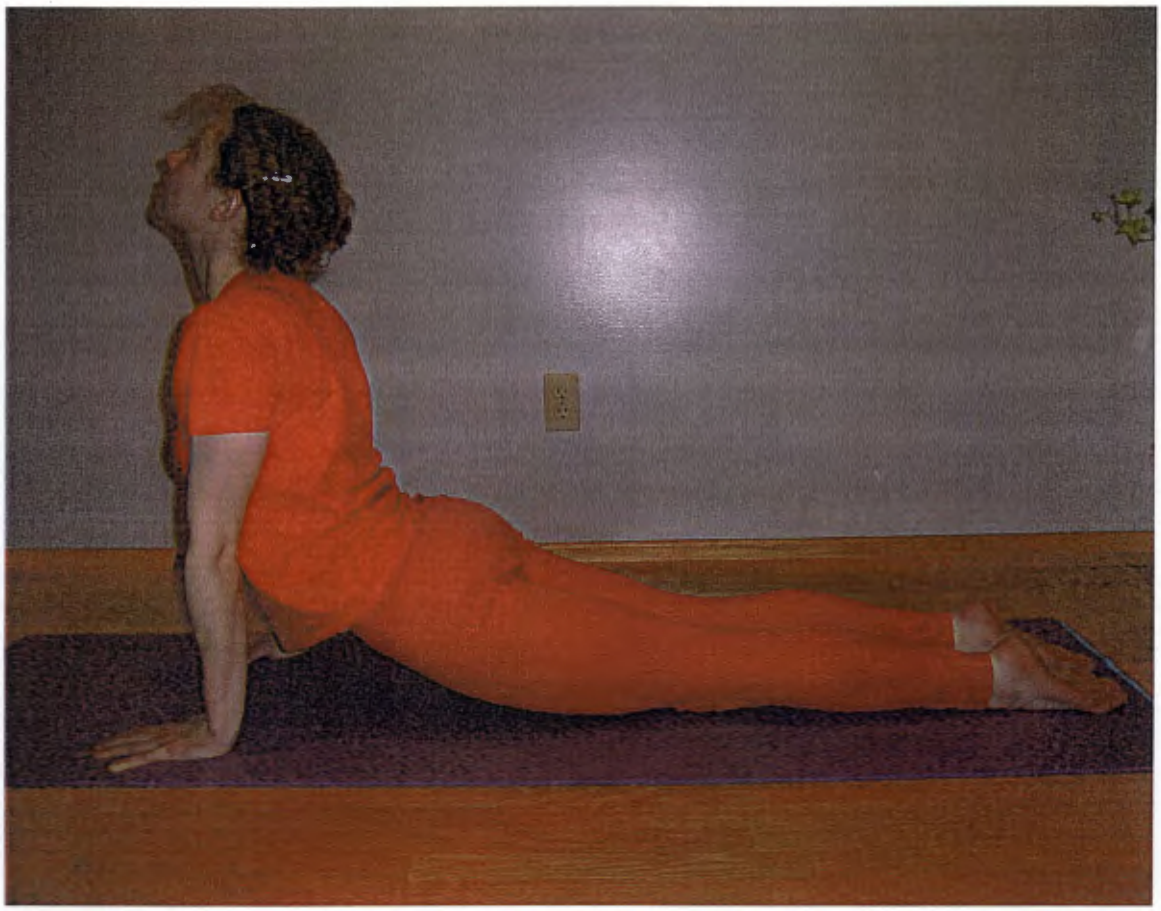

Figure 28: Urdhva Mukha Svanasana.

1) Gently lie down on your stomach with toes pointed backwards. Rest your palms to the sides of your chest with fingers pointing forward.
2) Slowly straighten your arms, lifting your thighs and trunk off the floor. Bring your chest forward and push your head backward. Keep your knees and elbows straight. Breathe normally. Stay in this final pose, Urdhva Mukha Svanasana (as in Figure 28) for 2 to 3 breaths.
3) Slowly come out of the pose to stand up.

Benefits (p. 57):

- Urdhva Mukha Svanasana helps to make the spine strong and supple.

Setu Bandha Sarvangasana (Bridge)****

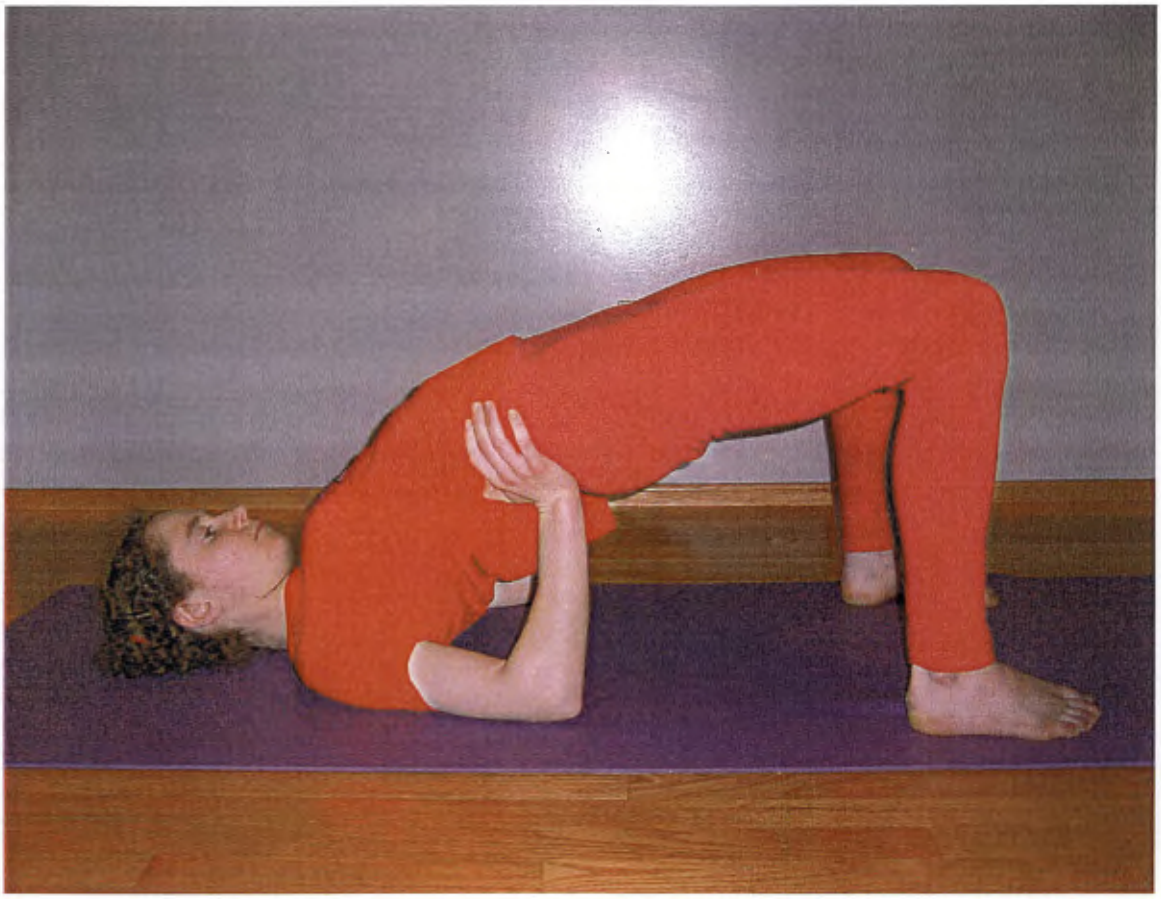

Figure 29: Setu Bandha Sarvangasana.

1) Lie flat on your back with your arms by your side. Widen your legs and then bend your knees. Bring your feet close to your hips with toes pointing forward.
2) Slowly lift your hips up as far as you can. Keep your heels down on the floor.
3) Use your palms to support your back. Do not raise your shoulders off the floor. Breathe normally. Stay in this final pose, Setu Bandha Sarvangasana (as in Figure 29) for 2 to 3 breaths.
4) Then gently lower your body and roll to your side to stand up.

Setu Bandha Sarvangasana (Bridge) continued

Benefits (p. 64):

- Setu Bandha Sarvangasana strengthens the wrists.
- It tones the kidney.
- It makes the spine strong and healthy.
- It improves breathing.
- It refreshes the body and the mind.

Adho Mukha Vrksasana (Inverted Tree)****

Figure 30: Adho Mukha Vrksasana.

1) Stand erect and tall (as in Tadasana).
2) Stand facing the wall. Bend down 2 to 3 inches away from a wall and place your palms on the floor. Spread your fingers pointing forwards. Keep your arms straight (as in Figure 31).

Figure 31

3) Swing your legs upwards and support your body against the wall. Balance your whole body on your arms, keeping them straight. Breathe normally. Stay in this final pose, Adho Mukha Vrksasana (as in Figure 30) for 2 to 3 breaths.

4) Gently land on your toes to come out of the pose.

Note: Girls should never attempt this pose during menstruation. It is strictly recommended that this pose be taught no sooner than Grade 6 and/or 7 to students. Place a soft thick mat under the student's head. Moreover, the teacher should help each student in getting up as well as getting down which means the teacher should deal with only one student at a time.

Benefits (p. 65):

- Adho Mukha Vrksasana strengthens the wrists, arms, and shoulders.
- It makes the mind alert.

Virasana (Hero)***

Figure 32: Virasana; Front View.

Figure 33: Virasana; Side View.

1) Kneel. Keep your knees and feet together.
2) Widen your feet and then sit down on the ground between your feet (as in Figure 33; side view).
3) Sit straight. Let your hands remain by your feet. Breathe normally. Stay in this final pose, Virasana (as in Figure 32; front view) for 2 to 3 breaths.

Note: Young children with hip displacement should not do this pose ("W-sitting") before checking with a doctor or physiotherapist.

Benefits (p. 108):

- Virasana corrects flat feet and strengthens the ankles.
- It reduces pain, cramps and fatigue in the legs.
- It makes the knee joint supple and strong.
- It assists digestion.

Virasana (Hero)***

Figure 32: Virasana; Front View.

Figure 33: Virasana; Side View.

1) Kneel. Keep your knees and feet together.
2) Widen your feet and then sit down on the ground between your feet (as in Figure 33; side view).
3) Sit straight. Let your hands remain by your feet. Breathe normally. Stay in this final pose, Virasana (as in Figure 32; front view) for 2 to 3 breaths.

Note: Young children with hip displacement should not do this pose ("W-sitting") before checking with a doctor or physiotherapist.

Benefits (p. 108):

- Virasana corrects flat feet and strengthens the ankles.
- It reduces pain, cramps and fatigue in the legs.
- It makes the knee joint supple and strong.
- It assists digestion.

Parvatasana in Virasana (Mountain in Hero Pose)***

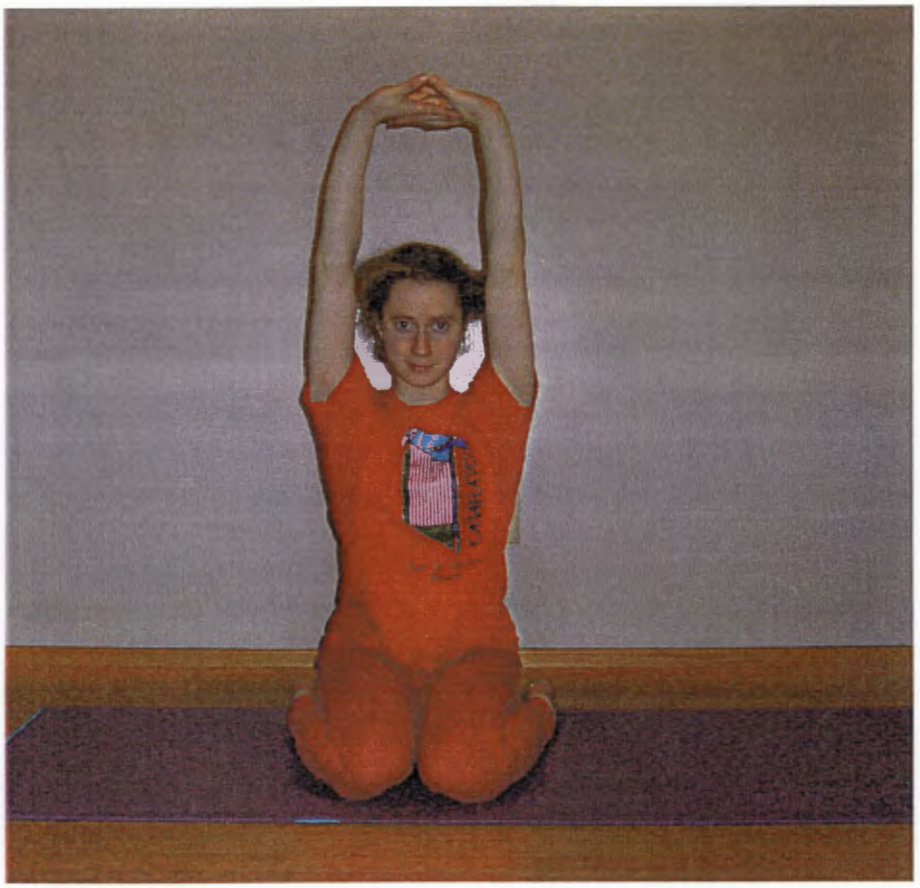

Figure 34: Parvatasana in Virasana

1) Kneel. Keep your knees and feet together.
2) Go into Virasana (Hero) position (as in Figure 32 and 33).
3) Link your fingers together so that the little finger of your right hand is on top of the little finger of your left hand. Turn your palms out. Bring your hands forward.
4) Slowly raise them over your head behind your ears. Keep your hands firm. Look ahead of you. Breathe normally. Stay in this final pose Parvatasana in Virasana (as in Figure 34) for 2 to 3 breaths.

Parvatasana in Virasana (Mountain in Hero Pose) continued

5) Drop your hands. Interlock the fingers so that the little finger of your left hand is on the top of the little finger of your right hand. Repeat the pose.

Benefits (p. 70 & 108):

- Parvatasana in Virasana corrects flat feet and strengthens the ankles.
- It reduces pain, cramps and fatigue in the legs.
- It makes the knee joint supple and strong.
- It makes wrists flexible.
- It assists digestion.

Supta Virasana (Sleeping hero)***

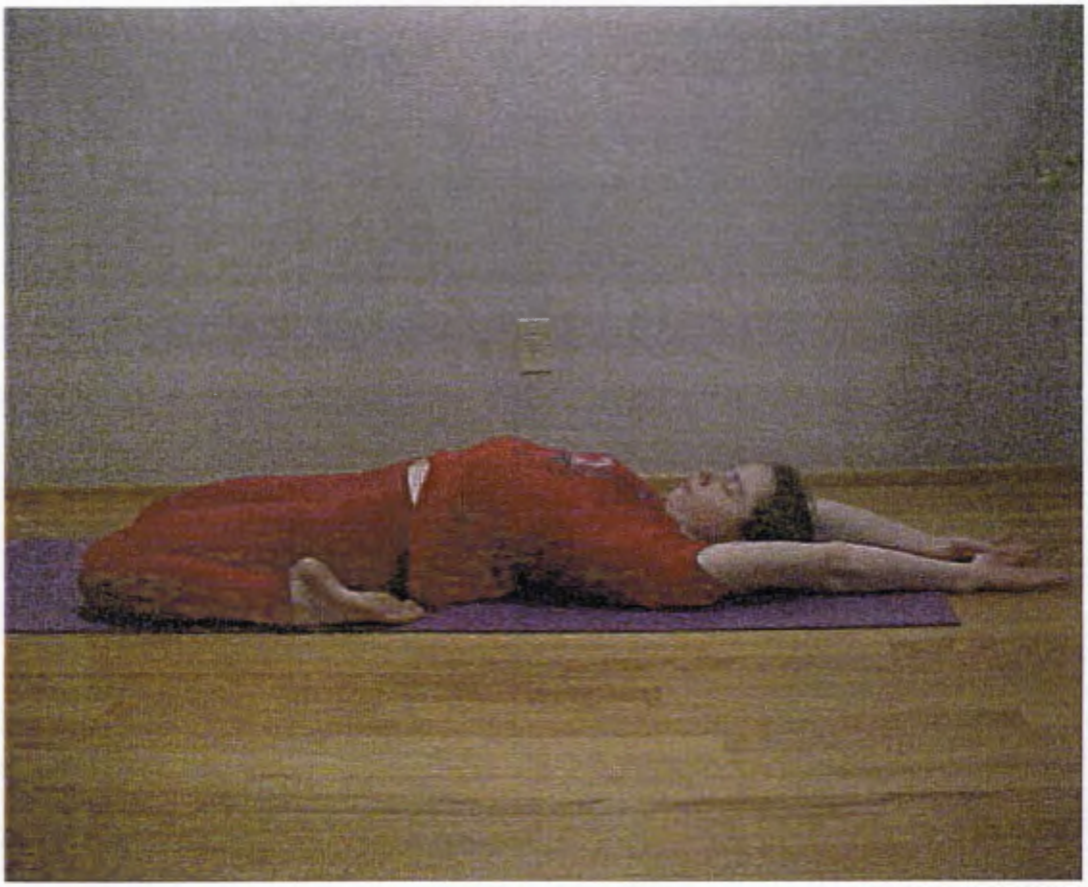

Figure 35: Supta Virasana.

1) Kneel. Spread your feet so that you can sit down on the ground between them.
2) With support of your elbows, lie down on your back. Keep your back straight. Do not move your knees or feet.
3) Stretch your arms over your head. Breathe normally. Stay in this final pose, Supta Virasana (as in Figure 35) for 2 to 3 breaths.
4) To come out of the pose, slowly sit up supporting yourself with your arms.

Supta Virasana (Sleeping Hero) continued

Benefits (p. 109):

- Supta Virasana reduces fatigue and refreshes the body.
- It aids deep breathing.
- It rests the heart.
- It helps relieve stomach problems.
- It calms and quiets the mind.

Gomukhasana (Cow)*/***

Figure 36: Gomukhasana; Front View.

Figure 37: Gomukhasana; Rear View.

1) Sit on the floor with your legs simply crossed over each other. Raise and first bend your left leg in and then your right leg over the left leg (as in Figure 38).

Figure 38

2) After following step 1, your knees will be above one another and your feet on each side of your hips (as in Figure 39).

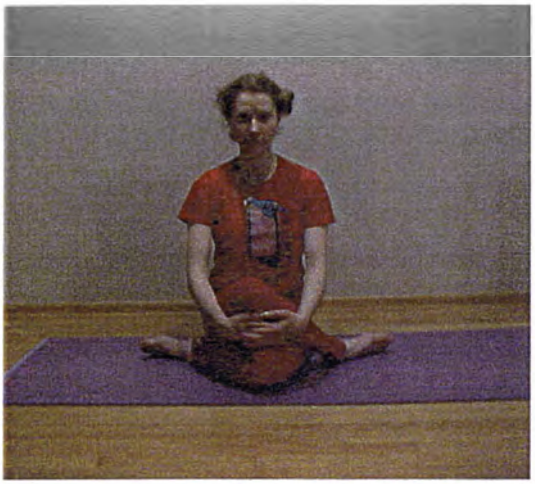

Figure 39

3) Stretch your left arm over your head and then bend it from your elbow placing it between your shoulder blades.
4) Take your right hand behind your back. Keeping the left elbow pointing the ceiling and right elbow pointing the ground, clasp palms or fingers of both hands (as in Figure 37; rear view).
5) Look ahead of you. Breathe normally. Stay in this final pose, Gomukhasana (as in Figure 36; front view) for 2 to 3 breaths.
6) Now release your legs and hands. Repeat on the left side.

Note: If the left leg is below, the left elbow is pointing the ceiling. If the right leg is below, then the right elbow is pointing the ceiling

Benefits (p. 110):

- Gomukhasana helps to relieve cramps in the calves.
- It improves stiff and rounded shoulders.

Navasana (Boat)***

Figure 40: Navasana.

1) Sit with your legs extended forward.
2) With the support of your hands, slightly lean backwards keeping your back straight. Slowly lift your legs up as much as you can without bending your knees (as in Figure 41).

Navasana (Boat) continued

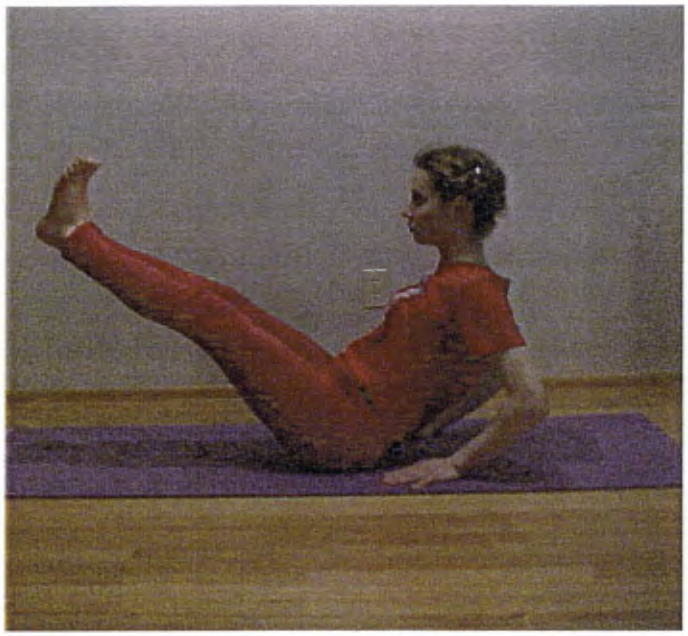

Figure 41

3) If you can, lift your legs higher than your head.

4) Now stretch your arms in front of you with palms facing each other. Breathe normally. Stay in this final pose, Navasana (as in Figure 40) for 2 to 3 breaths.

Note: If balancing is difficult, then keep the palms on the floor (as in Figure 41). Girls should never attempt Navasana during menstruation.

Benefits (p. 112):

- Navasana strengthens the stomach muscles and the back.
- It tones the intestines, kidneys, and liver.

Padmasana (Lotus)***

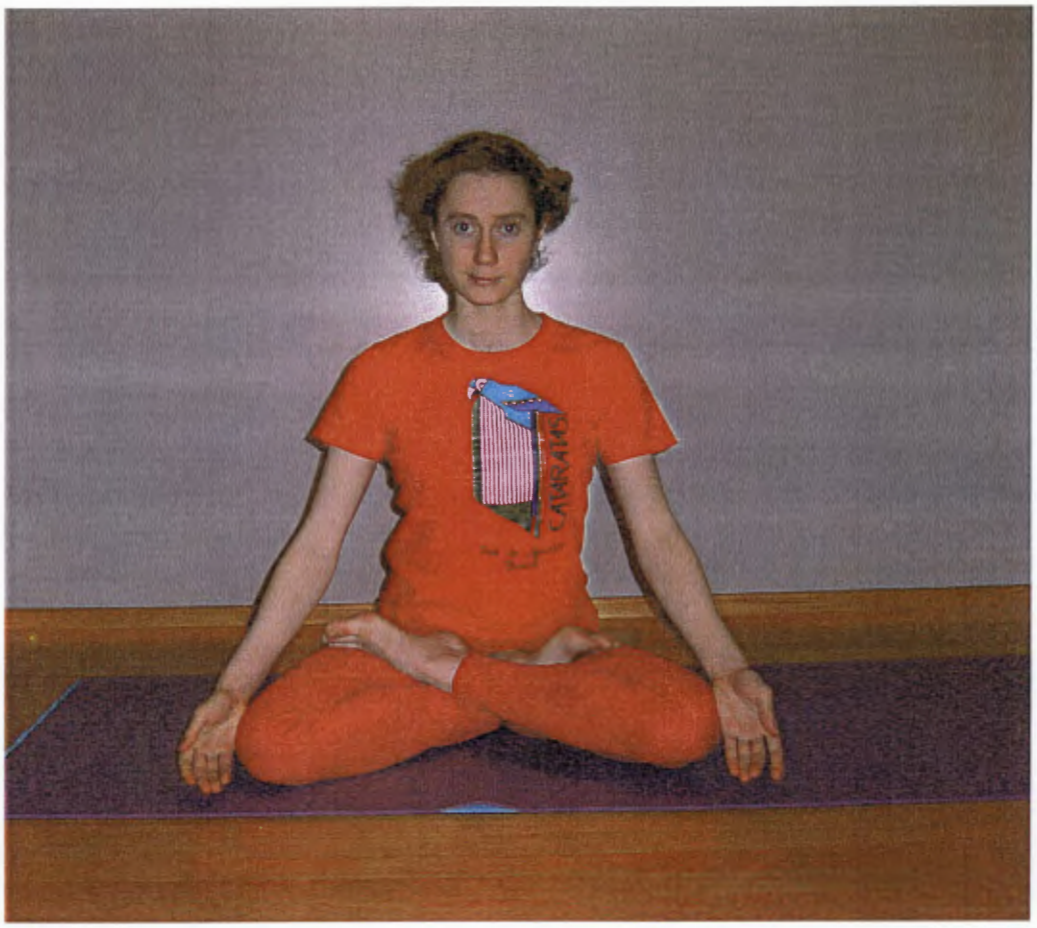

Figure 42: Padmasana.

1) Sit with your legs extended forward.
2) Now, bend your right knee to hold your right ankle. Place your right ankle up on your left thigh (as in Figure 43).

Padmasana (Lotus) continued

Figure 43

3) Bend your left knee to hold your left ankle. Place your left ankle up on your right thigh.

4) Sit straight. Place the back of your palms on your knees. Breathe normally. Stay in this final pose, Padmasana (as in Figure 42) for 2 to 3 breaths. Breathe normally.

5) Slowly release your crossed legs one at a time. Repeat the pose by first placing your left ankle up on the right thigh.

Note: If you cannot cross both legs then try initially with one leg.

Benefits (p. 68):

- Padmasana teaches you to sit with your back erect.
- It helps to keep the knee, hip, and ankle joints strong and supple.
- It refreshes your body and makes your mind alert.

Baddha Padmasana (Tied lotus)*

Figure 44: Baddha Padmasana; Front View.

Figure 45: Baddha Padmasana Rear View.

1) Sit cross-legged (as in Padmasana).
2) Breathe out and first put your left hand behind your back.
3) Now, put your right hand behind your back. Try to hold your heel or foot with your hands. If it is not possible to hold your heel or foot, then hold the elbows of opposite arms (as in Figure 45; rear view).
4) Keep looking ahead of you. Breathe normally. Stay in this final pose, Baddha Padmasana (as in Figure 44; front view) for 2 to 3 breaths.
5) Slowly release your hands and legs. First, place your left ankle on your right thigh. Now, first put your right hand behind your back and then the left. Repeat on the left side.

Benefits (p. 75):

- Baddha Padmasana improves your respiration.
- It is especially good for participation in sports as it strengthens the shoulders.

Parvatasana (Mountain)***

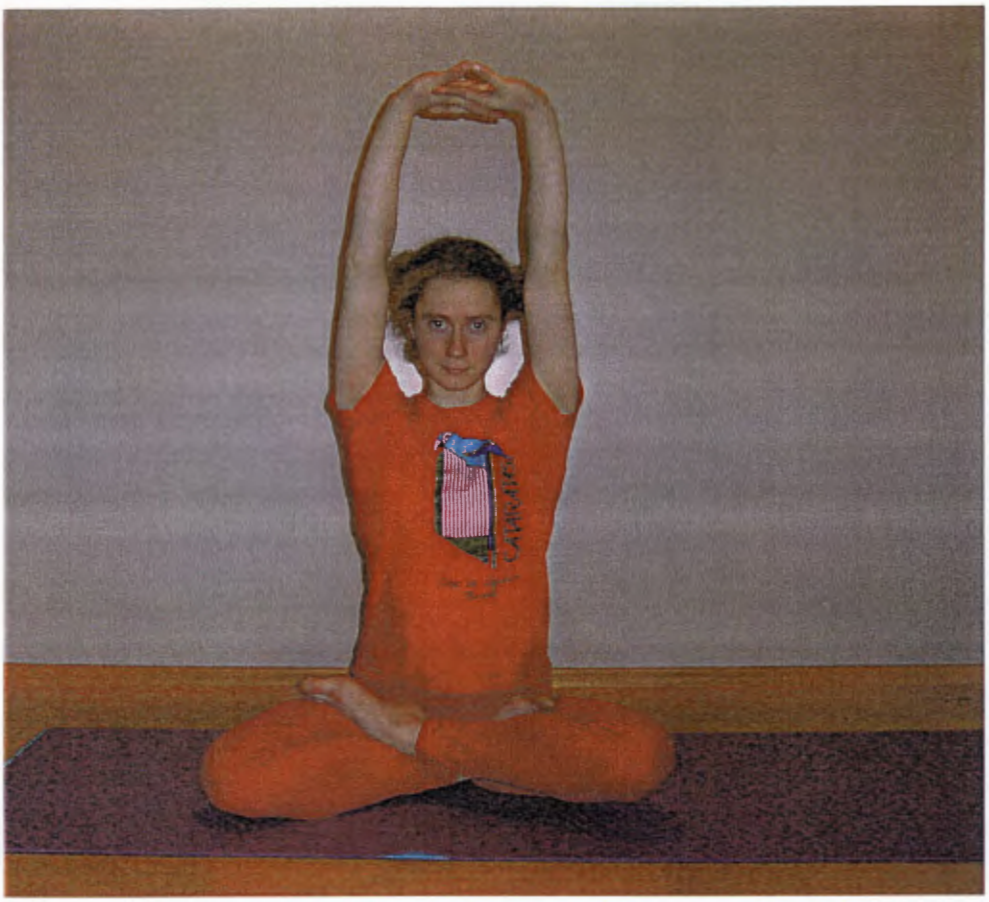

Figure 46: Parvatasana.

1) Sit cross-legged (as in Padmasana).
2) Link your fingers together so that the little finger of your right hand is on top of the little finger of your left hand. Turn your palms out. Bring your hands forward (as in Figure 47).

Parvatasana (Mountain) continued

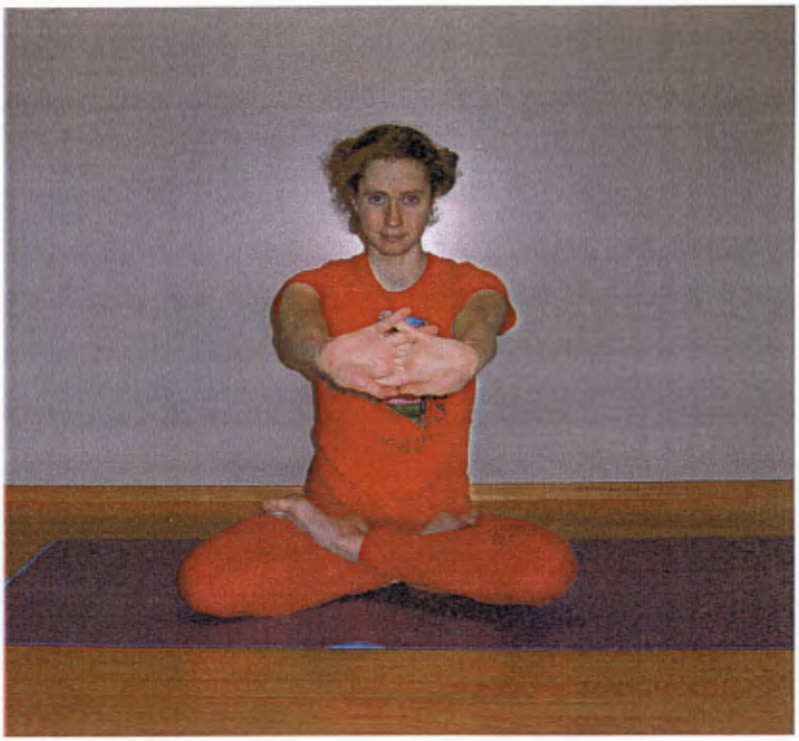

Figure 47

3) Then slowly raise them over your head behind your ears. Keep your hands firmly locked.

4) Remain seated tall and straight. Do not bend your elbows. Breathe normally. Stay in this final pose, Parvatasana (as in Figure 46) for 2 to 3 breaths.

5) Drop your hands. First, place your left ankle on your right thigh. Interlock the fingers so that the little finger of your left hand is on the top of the little finger of your right hand. Repeat the pose.

Benefits (p. 70):

- Parvatasana corrects rounded back and drooping shoulders.
- It makes your wrists flexible.

Tolasana (Scales)***

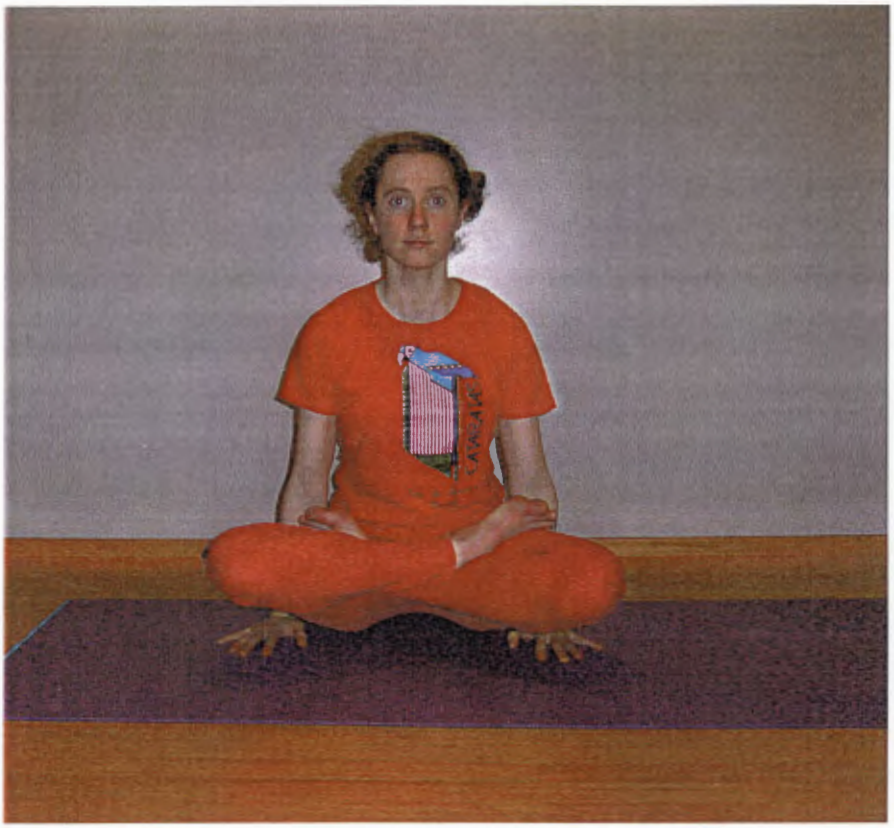

Figure 48: Tolasana.

1) Sit cross-legged (as in Padmasana). Place your hands flat on the floor beside your hips, with your fingers pointing forward.
2) Slowly lift your crossed legs off the floor, maintaining your balance and distributing your body weight evenly on both hands. (If you like, you can swing backwards and forwards between your stationary hands).
3) Keep looking straight ahead of you. Breathe normally. Stay in this final pose, Tolasana (as in Figure 48) for 2 to 3 breaths.
4) Slowly come out of the pose. Repeat the pose by interchanging your legs. First place the left ankle on your right thigh.

Tolasana (Scales) continued

Note: In Figure 48, the pose is shown being done with first placing the left ankle on the right thigh.

Benefits (p. 71):

- Tolasana strengthens your fingers, wrists, arms, and stomach muscles.

Simhasana (Lion)***

Figure 49: Simhasana.

1) Sit cross-legged (as in Padmasana). Put your palms in front of you on the floor with fingers pointing forward. Raising yourself, come up on your hands and knees (as in Figure 50).

Figure 50

2) Keep your back straight. Keep your arms straight.

3) Now, open your mouth and stretch out your tongue towards your chin. Look straight ahead of you, or keep looking at the tip of your nose. Breathe normally (You can also make a growling sound if you wish). Stay in this final pose, Simhasana (as in Figure 49) for 2 to 3 breaths.

4) Slowly come out of the pose. Repeat the pose by interchanging your legs. First place the left ankle on the right thigh.

Benefits (p. 72):

- Simhasana makes the lower spine elastic.
- It helps to get rid of bad breath.

Kukkutasana (Cock)***

Figure 51: Kukkutasana.

1) Sit cross-legged (as in Padmasana). Place your arms between your calves and thighs, pushing your hands firmly on the floor.
2) Spread your fingers and slowly lift yourself off the floor, while maintaining your balance. Distribute your body weight evenly on both hands. Look ahead of you. Breathe normally. Stay in this final pose, Kukkutasana (as in Figure 51) for 2 to 3 breaths.
3) Slowly sit down. Come out of the pose. Repeat the other way by interchanging your legs. First place the left ankle on the right thigh.

Benefits (p. 74):

- Kukkutasana strengthens the fingers, wrists, arms, and the muscles of the abdomen.

Dandasana (Staff)***

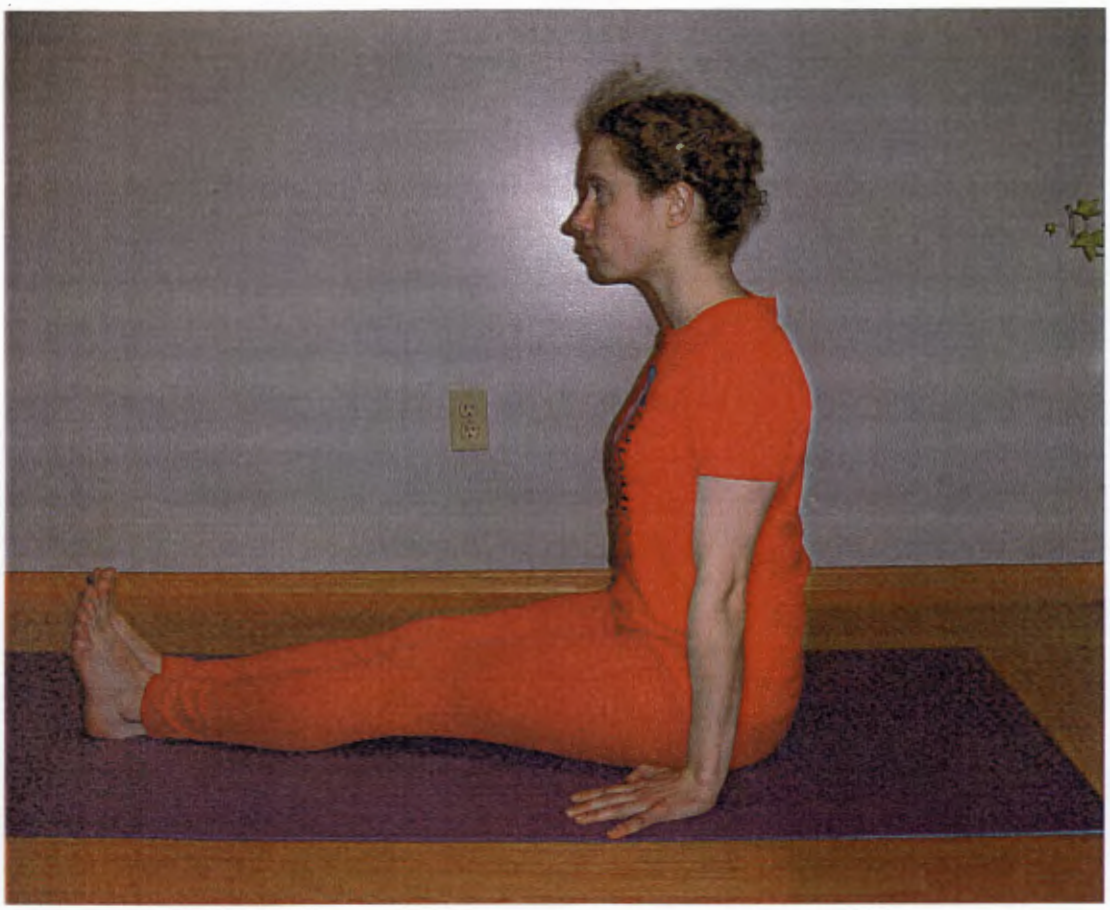

Figure 52: Dandasana.

1) Gently sit down on the floor with your legs extended forward. Let your thighs, knees and big toes join together.
2) Place your palms on the floor beside your hips with fingers pointing forward. Expand your chest by drawing your shoulders back.
3) Try to keep your back as straight as you can. Keep your knees tight. Breathe normally. Stay in this final pose, Dandasana (as in Figure 52) for 2 to 3 breaths.

Benefits (p. 78):

- Dandasana teaches you to sit correctly by spreading your body weight evenly and by keeping your back straight.

Janu Sirsasana (Head-to-Knee)***

Figure 53: Janu Sirsasana.

1) Sit with your legs extended forward (as in Dandasana).
2) Bend your right leg, bringing your foot to the inside of your left thigh. Slowly extend your arms over your head (as in Figure 54).

Janu Sirsasana (Head-to-Knee) continued

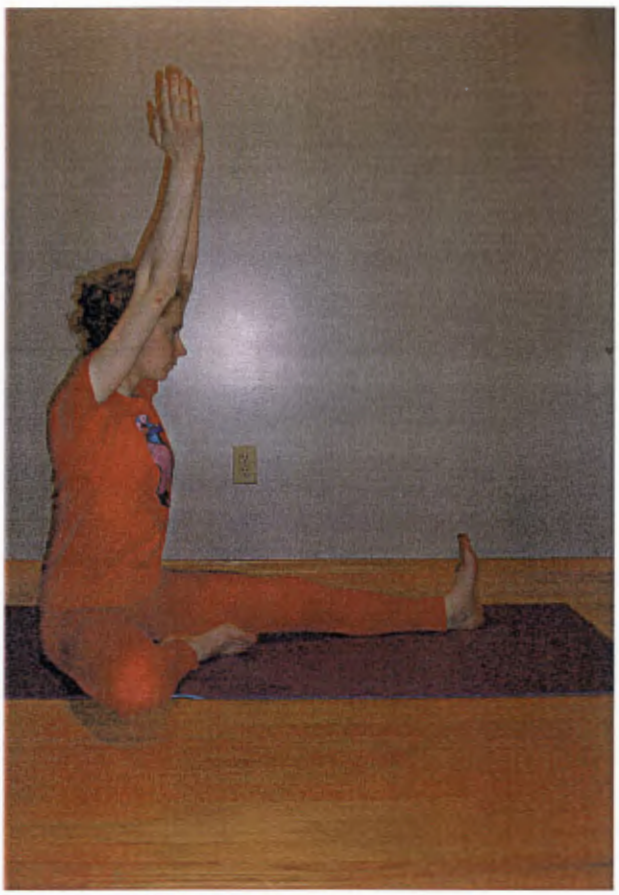

Figure 54

3) Bend forward to hold your left foot with both hands. Extend your spine further by stretching yourself, but do not pull too hard and hurt yourself.

4) Try to place your forehead or chin on your knees. Keep your trunk straight. Breathe normally. Stay in this final pose, Janu Sirsasana (as in Figure 53) for 2 to 3 breaths.

5) Come up and repeat with the left knee bent.

Benefits (p. 79):

- Janu Sirsasana tones the liver and kidneys.
- Hamstring muscles get stretched and strengthened.
- It gives rest to the heart.

Paschima Uttanasana (Intense head-to-knee)***

Figure 55: Paschima Uttanasana.

1) Sit with your legs extended (as in Dandasana). Extend your arms over your head and keep the trunk lengthened.
2) Fold forward and hold your feet with both hands. Try to place your forehead or chin on your knees. Do not bend your knees. Breathe normally. Stay in this final pose, Paschima Uttanasana (as in Figure 55) for 2 to 3 breaths.

Benefits (p. 84):

- Paschima Uttanasana invigorates the abdominal organs.
- It gives rest to the heart; refreshes the brain.

Baddha Konasana (Butterfly)***

Figure 56: Baddha Konasana.

1) Sit with your legs extended (as in Dandasana). Bend your knees and bring your feet towards you. Put the soles of your feet together. Draw your shoulders back to broaden your chest.
2) Put your hands around your ankles. Slowly drop your knees down to the floor. Sit straight. Breathe normally. Stay in this pose, Baddha Konasana (as in Figure 56) for 2 to 3 breaths. If you want you can move your knees up and down as if you are a butterfly fluttering its wings.

Baddha Konasana (Butterfly) continued

3) As a variation, bend forward and try to place your head on the floor in front of you. Let the knees remain on the floor, and do not pull your feet. Breathe normally. Stay in this final pose for 2 to 3 breaths (photograph not shown here).

Benefits (p. 85):

- Baddha Konasana helps to keep the hips and knee joints healthy.
- It improves the functioning of the lower abdominal organs.
- It increases control over the bladder.

Upavistha Konasana (Fan)****

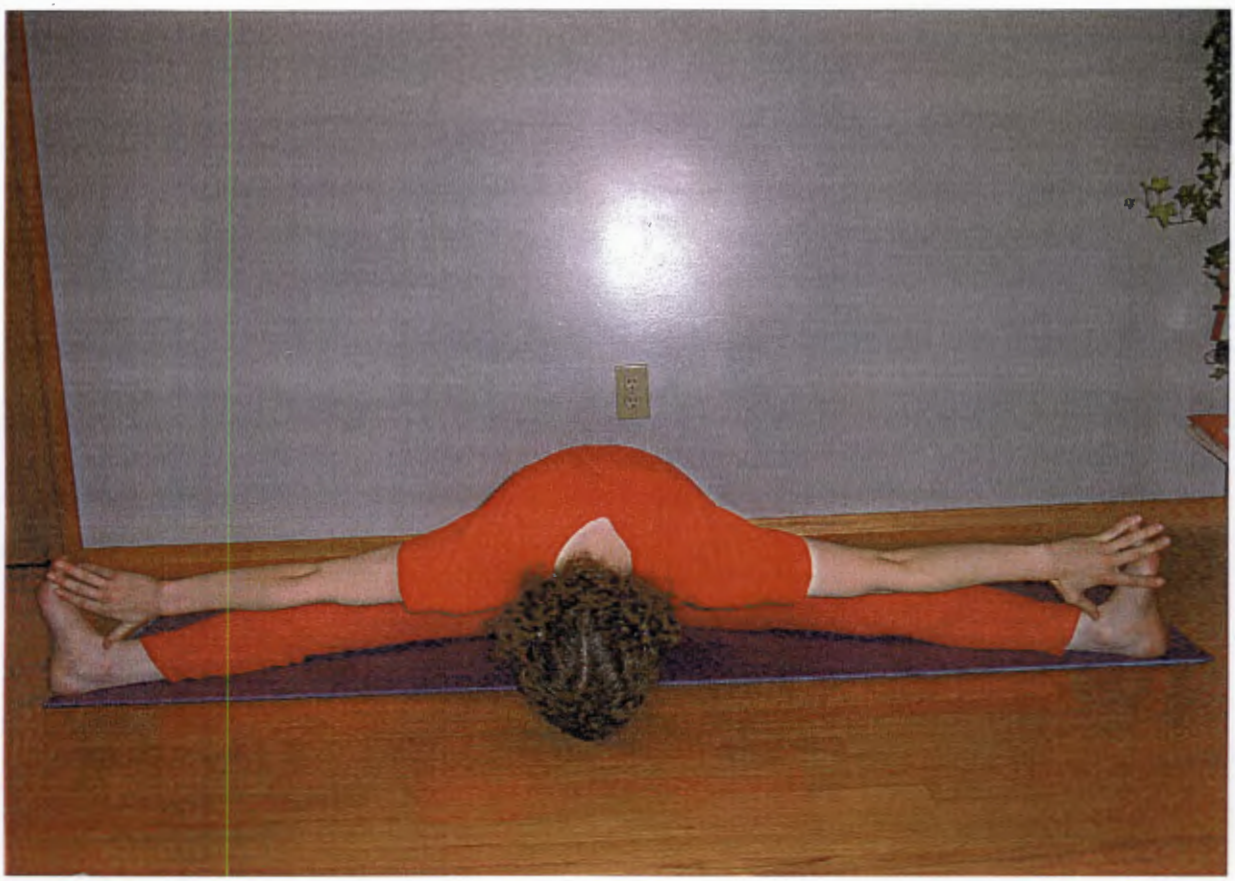

Figure 57: Upavistha Konasana.

1) Sit with your legs extended (as in Dandasana).
2) Spread your right leg and then your left leg sideways. Keep your knees straight, muscles tight, and point your toes upwards. Place your palms behind your hips. Keep your back straight (as in Figure 58).

Upavistha Konasana (Fan) continued

Figure 58

3) Now, hold firmly to your toes with your first and middle fingers (as in Figure 59).

Figure 59

4) Slowly fold your trunk forward to rest your head on the floor. Breathe normally.

   Stay in this final pose, Upavistha Konasana (as in Figure 57) for 2 to 3 breaths.

Benefits (p. 86):

- Upavistha Konasana improves the circulation in the pelvic region.
- It makes the hamstring muscles elastic.

Kurmasana (Turtle)***

Figure 60: Kurmasana.

1) Sit with your legs extended (as in Dandasana).
2) Bend your knees slightly and spread your feet about 18 inches. Place your arms one at a time beneath your knees. Stretch your arms sideways with your palms down (as in Figure 61).

Kurmasana (Turtle) continued

Figure 61

3) Try to straighten your legs as much as you can. Place your hands on your back. Slowly rest your head on the floor. Breathe normally. Stay in this final pose, Kurmasana (as in Figure 60) for 2 to 3 breaths.

Benefits (p. 87):

- Kurmasana makes the spine supple.
- It soothes and quiets the mind.

Bharadvajasana I (Twist 1)***

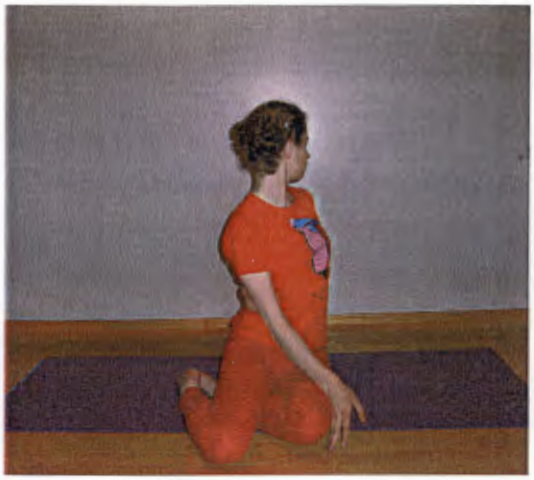

Figure 62: Bharadvajasana I; Front View.

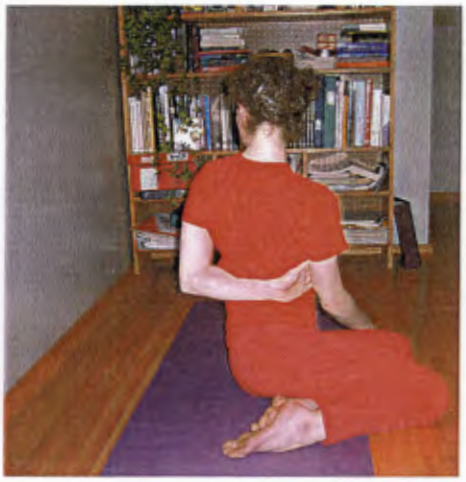

Figure 63: Side View.

1) Sit with your legs extended (as in Dandasana). Bend both your legs to the right side and put your feet beside your hips. Place your right ankle over the arch of your left foot (as in Figure 64).

Figure 64

2) Insert your right hand under your left knee (as in Figure 65).

Figure 65

3) Slowly take your left arm behind your back to hold your right arm. If you cannot hold the arm then hold the sleeve of your shirt.
4) First, slowly turn your torso to the left. Then, slowly turn your head left to look over your left shoulder. Do not move or turn your knees. Breathe normally. Stay in this final pose, Bharadvajasana I (as in Figure 62; front view, the side view looks as in figure 63) for 2 to 3 breaths.
5) Come out of the pose and repeat it on the left side.

Benefits (p. 90):

Bharadvajasana I helps to relieve sore backs and stiff necks.

Ardha Matsyendrasana I (Twist 2)***

Figure 66: Ardha Matsyendrasana I.

1) Sit with your legs extended (as in Dandasana). Bend your right leg and sit on your right foot. Bend your left knee towards your chest. Place your left foot across your right knee (as in Figure 67).

Ardha Matsyendrasana I (Twist 2) continued

Figure 67

2) Slowly turn your waist to your left side. Firmly place your right upper arm against the outer side of your left knee. Place your left arm behind your back (as in Figure 68).

Figure 68

3) Take your right arm around your left shin to clasp your left hand. Turn your head to look over your left shoulder. Breathe normally. Stay in this final pose, Ardha Matsyendrasana I (as in Figure 66) for 2 to 3 breaths.
4) If you cannot clasp your hand, then just keep the right hand straight pointing towards the ceiling (as in Figure 69; front. The side view looks as in Figure 70).

Figure 69: Front View

Figure 70: Side View

5) Come out of the pose and repeat on the left side.

Benefits (p. 94):

- Ardha Matsyendrasana I prevents and cures backaches.
- It tones the liver, spleen and pancreas.

Salabhasana (Locust)***

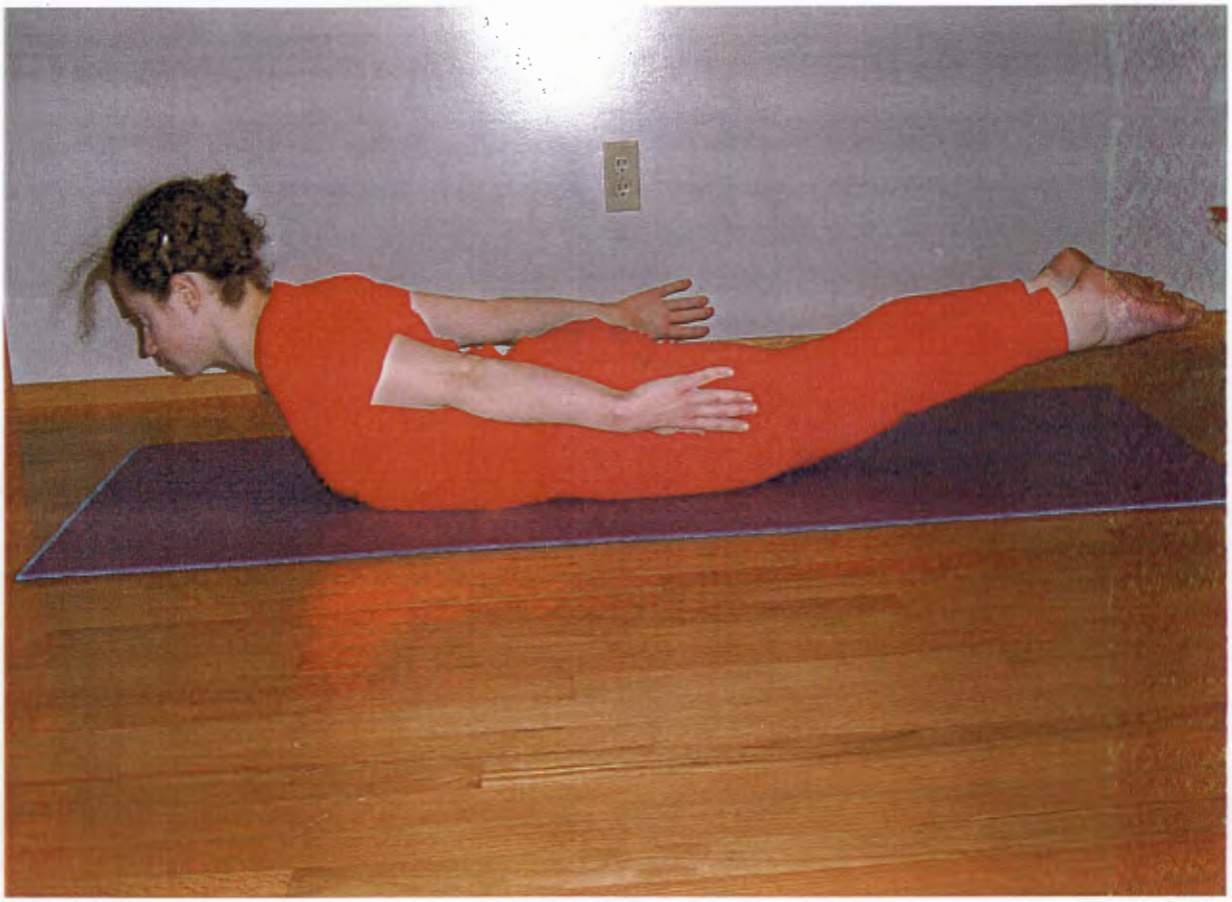

Figure 71: Salabhasana.

1) Lie down flat on your stomach with your arms by your side. Have your palms face each other. Keep your legs together with toes pointing.
2) Slowly lift your head, shoulders, chest, and arms off the floor. At the same time, slowly lift your legs as far as you can. Do not bend your knees. Breathe normally. Stay in this final pose, Salabhasana (as in Figure 71) for 2 to 3 breaths.

Benefits (p. 98):

- Salabhasana strengthens the muscles of the back, the hips, and the back of the thighs.

Makarasana (Sea creature)***

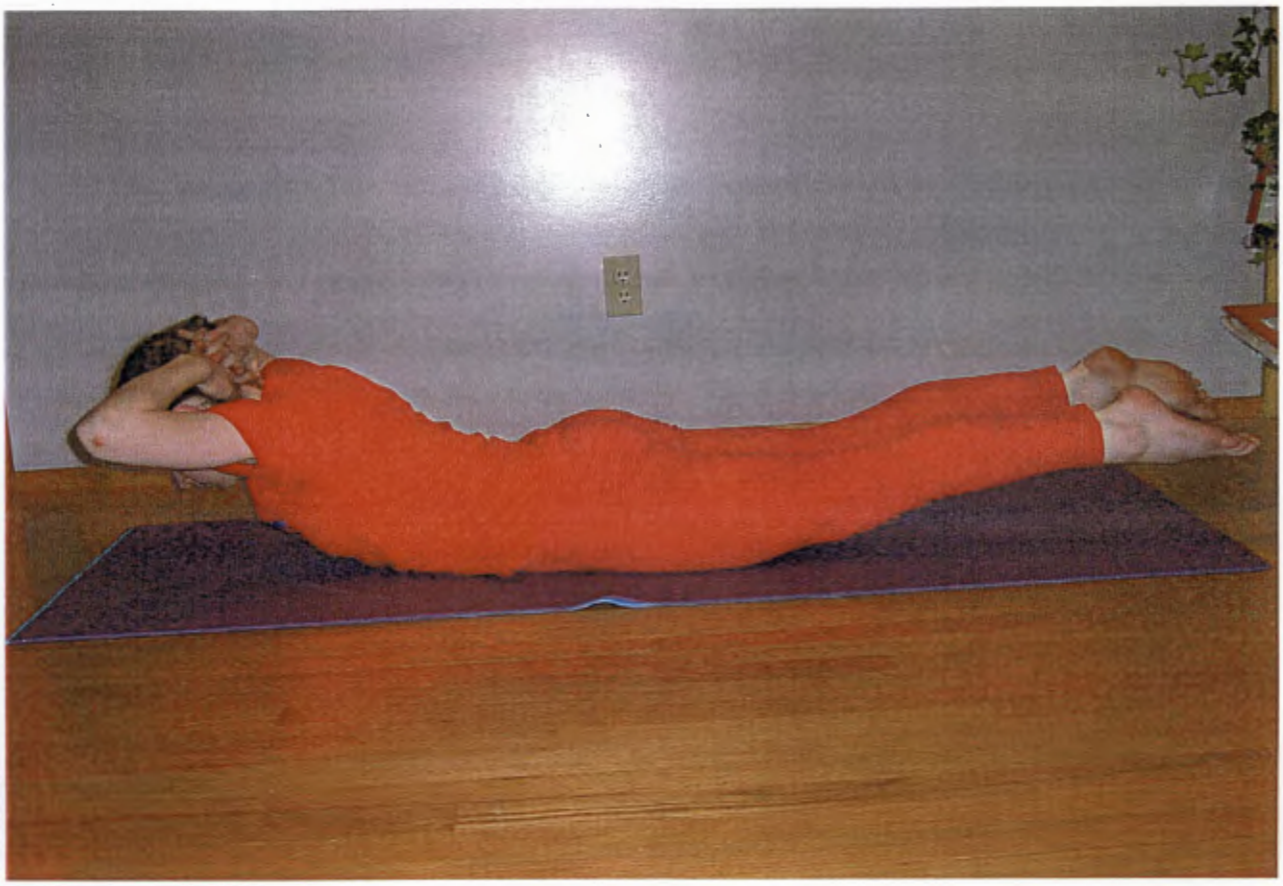

Figure 72: Makarasana.

1) Lie down flat on your stomach with your arms by your side. Interlock your fingers with one another behind your head. Keep your legs joined with toes pointing.
2) Slowly lift your head, chest, and legs off the floor at the same time. Try to lift your thighs and do not bend your knees. Breathe normally. Stay in this final pose, Makarasana (as in Figure 72) for 2 to 3 breaths.

Benefits (p. 99):

- Makarasana strengthens the muscles of the back, the neck, and the back of the thighs.

Bhujangasana (Snake)***

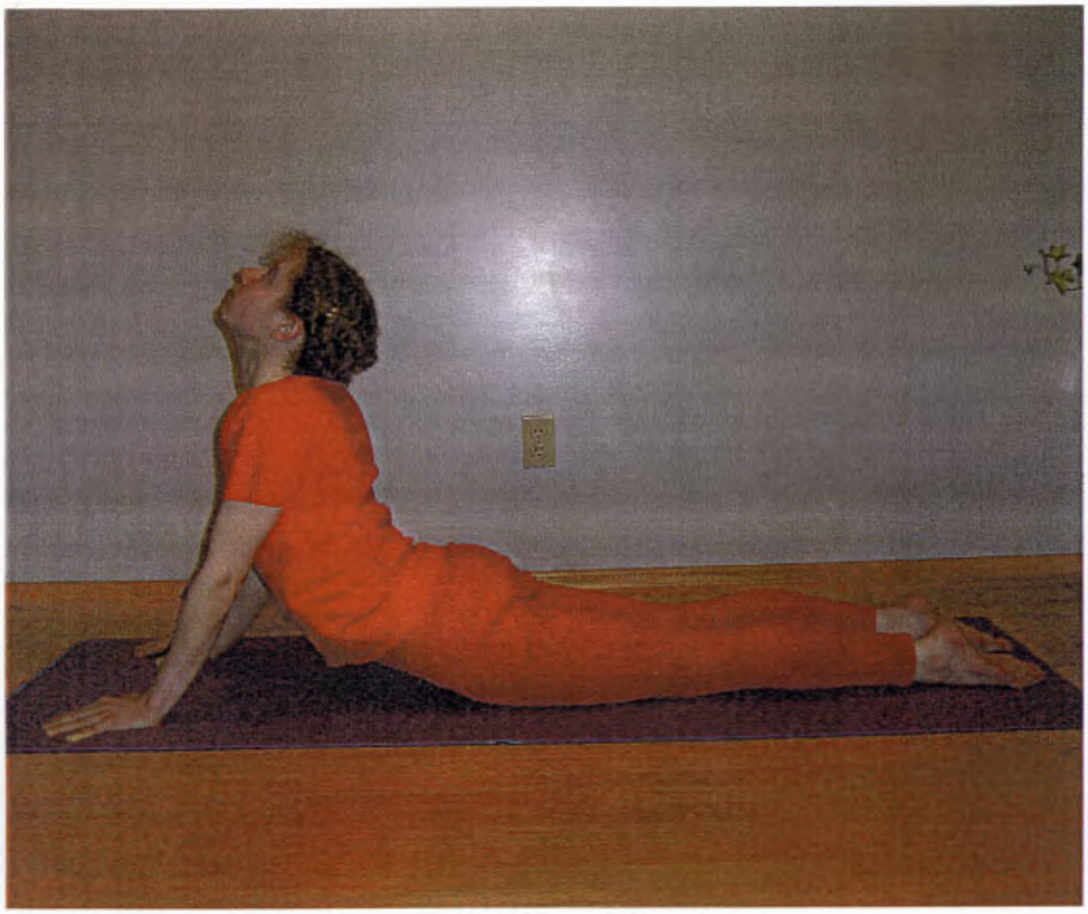

Figure 73: Bhujangasana.

1) Lie flat on your stomach with your hands beside your chest. Keep your palms down on the floor and your fingers pointing forward. Keep your legs together and your toes pointing.
2) Keeping your legs flat on the floor, lift your head and your chest off the floor. Keep your arms straight (as in Figure 74).

Bhujangasana (Snake) continued

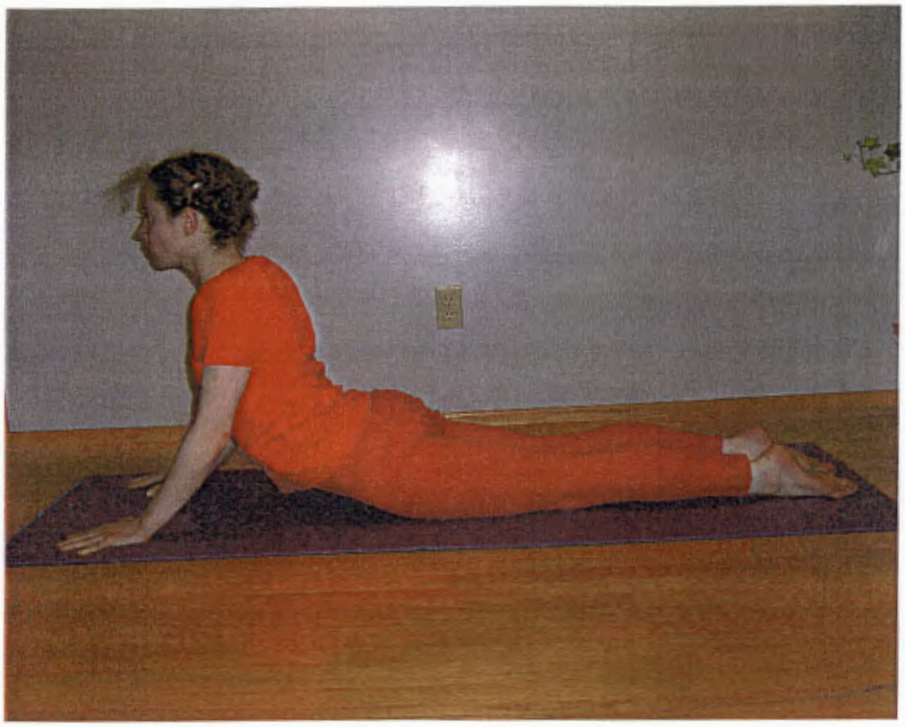

Figure 74

3) Slowly push your head back and arch your spine as much as possible. Do not lift your thighs off the floor. Breathe normally. Stay in this final pose, Bhujangasana (as in Figure 73) for 2 to 3 breaths. If you like, you can hiss like a snake.
4) Come down slowly, roll over and hug your knees to your chest. Then slowly stand up.

Benefits (p. 100):

- Bhujangasana helps to remove stiffness in the neck and spine.

Ustrasana (Camel)***

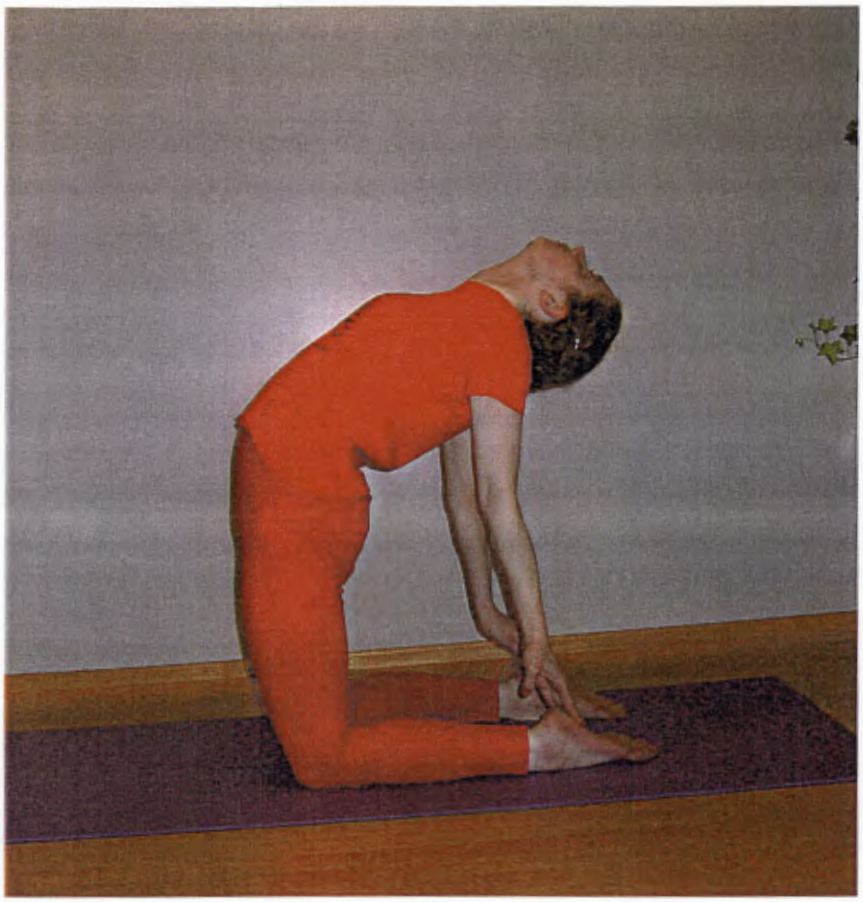

Figure 75: Ustrasana.

1) Kneel with your toes pointing backwards. Place your hands on your hips. Push your back to make a curve (as in Figure 76).

Ustrasana (Camel) continued

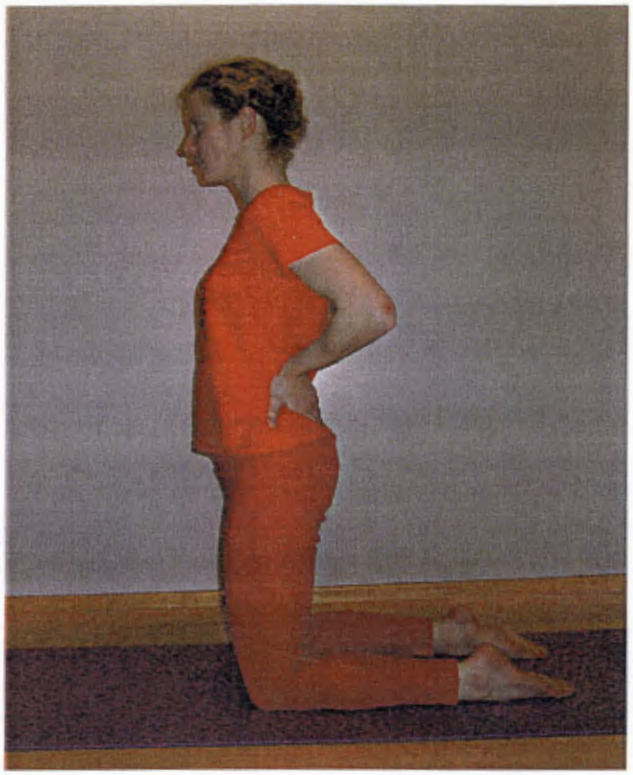

Figure 76

2) Slowly touch your feet with your palms one at a time. Keep your hands straight. Bend your head and keep looking at the tip of your nose. Do not strain your eyes. Breathe normally. Stay in this final pose, Ustrasana (as in Figure 75) for 2 to 3 breaths.

3) To come out of the pose, release one hand at a time and come up straight.

Benefits (p. 101):

- Ustrasana helps to remove stiffness in the neck and the shoulders.

Savasana (Corpse)***

Figure 77: Savasana; Front View.

Figure 78: Savasana; Side View.

1) Sit down on the center of a mat with your knees bent and feet flat on the floor.
2) Slowly lower your trunk to bring your back to rest in a straight line on the mat.
3) Extend your legs one at a time and spread them about 30 cm. Flop your feet sideways.
4) Place your arms on the floor beside you, a little away from your chest, with palms facing the ceiling. Let the palms curl naturally.
5) Let your chin rest on your chest and your head in the center (place a folded blanket under your head if you need to support your head). Now close your eyes. Breathe normally. Mentally suggest that each part of your body from toes to top of your head relax. Suggest the internal organs relax.

Savasana (Corpse) continued

6) Feel your body really heavy on the ground and sinking further down every time you breathe out. Lie down completely motionless like a dead person. Breathe normally. Watch how your breath rises and falls. Stay in this final pose, Savasana (as in Figure 77; front view, the side view looks as in Figure 78) for at least 3 minutes.

7) To come out of the pose first bring awareness in your fingers and toes by moving them slowly, hug your knees, open your eyes, and then roll to your side. Keeping your gaze on the floor and maintaining the relaxed state slowly sit up with the support of your hands.

Note: Savasana looks very simple yet is the most difficult of all the poses.
It is recommended that you do this pose before and after yoga class.
It can be done at anytime and whenever you are tired.

Benefits (p. 122):

- Savasana relaxes the nervous system and your brain.
- It helps to remove fatigue.
- It aids in concentration.
- It calms your emotions.

Recommendations

This project is a work in progress. After teachers have had a chance to use this curriculum for a year, I recommend they suggest ways to improve this curriculum. For example, more suggestions of how to incorporate asanas in the classroom, across curricula, and other ways in which the curriculum could be made more suitable and appropriate. I would welcome ideas regarding stories, poetry, and other plans. I also recommend that this curriculum be shared with parents willing to teach asanas to their children out of school hours.

Future Research

An important focus for future research would be to study the implementation of this curriculum in an elementary school classroom, and to evaluate the effectiveness of the curriculum in improving students' affect, behavior, and learning. I suggest conducting a pilot study using this curriculum. Moreover, this curriculum can be compared with other strategies for improving classroom behavior and learning such as biofeedback.

Conclusion

As teachers, we always expect and ask our students to behave, to be creative, to be attentive, and to be successful. We expect positive, cheerful behavior from our students. But we seldom tell them how to achieve such qualities so as to attain success. Moreover, from my own personal experience, I feel that schools are devoid of deeper spiritual training. Schools may teach us to earn our living but may not teach us how to live our lives. Hatha Yoga is such a technique, which can help all students to achieve their best at school and in their lives by remaining calm and active concurrently. Through practice of asanas, children can learn to achieve the best positive approach towards life, their surrounding and with Mother Nature. To me Mother Nature means an awareness to be united and a part of everything in nature. Moreover, the teachers can also benefit from practicing asanas along with children thus making a two way process. Hatha Yoga is a therapy for which one has to depend on nobody but oneself. I think it would be appropriate to recommend integration of asanas in the curriculum for the all-round development of children because there is nothing to lose yet everything to gain. Why not try something different for children that has been around us for centuries, practiced and studied experimentally by many, and which appears to be proven to work?

References

Bauwens, J., & Hourcade, J.J. (1992). School based sources of stress among elementary and secondary at-risk students. *The School Counselor*, *40*, 97-102.

Benson, H., Kornhaber, A., Kornhaber, C., LeChanu, M.N., Zuttermeister, P.C., Myers, P., & Friedman, R. (1994). Increases in positive psychological characteristics with a new relaxation-response curriculum in high school students. *Journal of Research and Development in Education*, *27*(4), 226-231.

Benson, H., Wilcher, M., Greenberg, B., Huggins, E., Ennis, M., Zuttermeister, P. C., Myers, P., & Friedman, R. (2000). Academic performance among middle school students after exposure to a relaxation response curriculum. *Journal of Research and Development in Education*, *33*(3), 156-165.

Bera, T. K., Rajapurkar M.V., & Ganguly S. K. (1990). Effect of yogic training on body density in school-going boys. *NIS Scientific Journal*, *13*(2), 23-35.

Berger, B.G., & Owens, D.R. (1988). Stress reduction and mood enhancement in four exercise modes: Swimming, Body Conditioning, Hatha Yoga, and Fencing. *Research Quarterly For Exercises and Sports*, *59*(2), 148-159.

Berger, B.G., & Owens, D.R. (1992). Mood alteration with yoga and swimming: Aerobic exercise may not be necessary. *Perceptual and Motor Skills*, *75*(3), 1331-1343.

Carr, R., (1973). Creative yoga exercises for children. Toronto, Canada: Fitzhenry & Whiteside Limited.

Chanchani, S., & Chanchani, R. (1995). *Yoga for children: A complete illustrated guide to yoga including a manual for parents and teachers*. New Delhi: UBS Publishers' Distributors Ltd.

Dhanaraj, H. V. (1975). *Yoga and physical fitness: Collected papers on yoga*. Lonavala, India: Yoga Mimamsa Press.

Diwakar, R. R. (1975). *Yoga: The science and art of conscious human evolution: Collected papers on yoga*. Lonavala, India: Yoga Mimamsa Press.

Dostalek, C. (1975). *Some aspects of yogic exercises and physiology: Collected papers on yoga*. Lonavala, India: Yoga Mimamsa Press.

Duggal, S. P. (1976). Yoga education and industrial civilization. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.107-116). Varanasi, India: Manisha Mudranalaya.

Edelstein, D. (2000, July). *Test + Stress = Problems for students*. Retrieved September 24, 2002, from http://www.brainconnection.com/topics/?main=fa/test-stress

Fazahbhoy, F. A. (1976). Yoga for everybody for all times. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.53-58). Varanasi, India: Manisha Mudranalaya.

Feuerstein, G. (1996). *Styles of HathaYoga*. Retrieved October 8, 2002, from http://www.yrec.org./styles.html

Feuerstein, G. (1997). *What is yoga?* Retrieved October 8, 2002, from http://www.yrec.org/publications.html

Feuerstein, G. (1999). *Ten fundamental principles of yoga*. Retrieved November 19, 2002 from http://www.yrec.org/10principles.html#top

Feuerstein, T. L. (2001). http://www.iayt.org/benefits.html Or Feuerstein, T. L. (2001, January-March). *The health benefits of yoga.* Yoga World: International

newsletter for yoga teachers and students, Issue 16, p.6, 3p, 1 graph. (Database: Alternative Health Watch).

Frey, H. (1980). Improving the performance of poor readers through autogenic relaxation training. *The reading teacher, 33*, 928-933.

Gaiam Yoga for Life (see http://www.gaiam.com/gaiam/1,1267,ArticleDetail:learn:105:433,00.html).

Gharote, M.L. (1971). A psychophysiological study of the effects of short term yogic training. *Yoga Mimamsa, 14*(1/2), 92-99.

Gharote, M. L. (1976). Effects of yoga exercises on failures on the Kraus-Weber tests. *Perceptual and Motor Skills, 43*(2), 654.

Hendricks, G. & Wills, R. (1975). *The centering book.* Englewood Cliffs, NJ: Prentice-Hall, Inc.

Hopkins, J. T. & Hopkins L. J. (1979). A study of yoga and concentration. *Academic Therapy, 14*(3), 341-345.

Integrated Resource Package, (1995). Province of British Columbia, Ministry of Education, Curriculum Branch. Retrieved on September 9, 2002, from http://www.gov.bc.ca/bced

Isham, M.S. (MSI) (1996). *Enlightenment! The Yoga Sutras of Patanjali: A new translation and commentary.* Waynesville, NC: SFA Publications.

Iyengar, B.K.S. (1991). *Light on yoga.* Great Britain: The Aquarian Press.

Iyengar, B. K. S. (2001). *Yoga for educational institutions.* Retrieved on July 3, 2001, from http://www.skys.com.au/children_school.html

Iyengar, G. S. (2001). *Yoga for school children*. Retrieved on July 3, 2001, from http://www.skys.com.au/children_schoolchild.html

Joseph, S., Sridharan, K., Patil, S. K. B., Kumaria, M. L., Selvamurthy, W., Joseph, N. T., & Nayar, H. S. (1981). Study of some physiological and biochemical parameters in subjects undergoing yogic training. *Indian Journal of Medical Research, 74*, 120-124.

Khumar, S. S., Kaur, P., & Kaur, S. (1993). Effectiveness of Shavasana on depression among university students. *Indian Journal of Clinical Psychology, 20*(2), 82-87.

King, R. (1999). *Indian philosophy: An introduction to Hindu and Buddhist thought.* Washington, D.C: Georgetown University Press.

Kokaje Shastri, R. G. (1975). *A historical review of yoga: Collected papers on yoga.* Lonavala, India: Yoga Mimamsa Press.

Manjunath, N. K. & Telles, S. (1999). Improvement in visual perceptual sensitivity in children following yoga training. *Journal of Indian Psychology, 17*(2), 41-45.

Manuvaryaji, S. (1976). Yoga and its scope. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.23-29). Varanasi, India: Manisha Mudranalaya.

McCormick, A. (1979). *The extent to which relaxation techniques are taught at community colleges in California*. ERIC Document Reproduction Service No. ED 186 074.

Merriam-Webster Online. http://www.m-w.com/netdict.htm

Miller, J.P. & Seller, W. (1985). Curriculum: Perspectives and practice. NY: Longman Inc.

Moorthy, A.M. (1983). Detraining effect of yogic and non-yogic exercises on minimum muscular fitness. *Yoga Mimamsa*, *21*(3/4), 49-54.

Nathawat, S. S. (1976). Yoga and behaviour therapy. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.83-93). Varanasi, India: Manisha Mudranalaya.

Omizo, M.M., Omizo, S.A., & Suzuki, L.A. (1988). Children and stressors: An exploratory study of stressors and symptoms. *The School Counselor*, *35*, 267-274.

Pelletier, K., & Peper, E. (1976). The Chutzpah factor in the psychophysiology of altered states of consciousness. In G. Hendricks & J. Fadiman (Eds). *Transpersonal Education* (pp.3-23). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Potter, K. (2000, May). *Vancouver's diverse yoga community*. Common Ground, 106, pp. 3 & 15.

Proeger, C., and Myrick, R. D. (1980). *Teaching children to relax*. ERIC Document Reproduction Service No. ED 206 393.

Putney, V. (1999, January 17). *Yoga can help schools*. News & Record.

Ramanavani, P., Nagarathna, R., Nagendra, H. R., & Telles, S. (1997). Progressive increase in critical flicker fusion frequency following yoga training. *Indian Journal of Physiology and Pharmacology*, *41*(1), 71-74.

Roberts, T. B., & Clark, F. V. (1976). Transpersonal Psychology in education. In G. Hendricks & J. Fadiman (Eds). *Transpersonal Education* (pp.3-23). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Roquemore, B. (2001, August). *The yoga craze*. Ebony, 56(10), p.122, 3p, 4c. (Database: Academic Search Elite).

School District Of Hillsborough County-Tampa, Florida (1999). *Curriculum Models*. Retrieved on April 4, 2003, from http://www.sdhc.K12.fl.us/~pe.elementary/curriculum.htm

Sen, D. B. (1976). Yoga Vibhutis-A philosophical study. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.13-21). Varanasi, India: Manisha Mudranalaya.

Sexton, T. G., and Poling, D. R. (1973). *Can intelligence be taught?* ERIC Document Reproduction Service No. ED 113 248.

Shankar, G. (1993). Yoga in education institutions. *Journal of Indian Education,* 18(6), 27-29.

Sharma, B. L. (1976). Yoga: A way of life. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.31-35). Varanasi, India: Manisha Mudranalaya.

Schultz, E.W. (1980). Teaching coping skills for stress and anxiety. *Teaching Exceptional Children, 13*, 12-15.

Sinha, A. K. (1976). Yoga and modern civilization. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.117-130). Varanasi, India: Manisha Mudranalaya.

Spicer, M. (2002). Personal Communication.

Stewart, M., & Phillips, K. (1992). *Yoga for children*. New York, NY: Simon & Schuster Inc.

Stukin, S. (2001, November). *Omschooling*. Yoga Journal, 163, pp.89-93 & 151-153.

Sturgess, S. (1997). *The yoga book: A practical guide to self-realizations*. Rockport, MA: Element Books, Inc.

Swami Satyananada, S. (1990). *Yoga education for children*. Munger, Bihar: Swami Satyasangananda Saraswati.

Telles, S., Hanumanthaiah, B., Nagarathna, R., & Nagendra, H. R. (1993). Improvement in static motor performance following yogic training of school children. *Perceptual and Motor Skills*, *76*, 1264-1266.

Telles, S., Nagarathna, R., & Nagendra, H. R. (1995). Improvement in visual perception following yoga training. *Journal of Indian Psychology*, *13*(1), 30-32.

Telles, S., Nagarathna, R., Ramanavani, P., & Nagendra, H. R. (1997). A combination of focusing and defocusing through yoga reduces optical illusion more that focusing alone. *Indian Journal of Physiology & Pharmacology*, *41*(2), 179-182.

Telles, S., Narendran, S., Raghuraj, P., Nagarathna, R., & Nagendra, H. R. (1997). Comparison of changes in autonomic and respiratory parameters of girls after yoga and games at a community home. *Perceptual and Motor Skills*, *84*(1), 251-257.

Thompson, J. (2003). Personal Communication.

Tomlinson, C. (2000). *Simple yoga*. Berkeley, CA: Conari Press.

Uma, K., Nagendra, H. R., Nagarathna, R., Vaidehi, S., & Seethalakshmi, R. (1989). The integrated approach of yoga: a therapeutic tool for mentally retarded children: a one-year controlled study. *Journal of Mental Deficiency Research*, *33* (5), 415-421.

Vaishwanar, P. S. (1975). *Modern physiological concepts in yoga therapy: Collected papers on yoga.* Lonavala, India: Yoga Mimamsa Press.

Vohra, D. (1976). Field and scope of yoga therapy. In A. K. Sinha (Ed.), *Perspectives in yoga* (pp.95-98). Varanasi, India: Manisha Mudranalaya.

Weintraub, A. (2000, November-December). *Yoga: It's not just an exercise.* Psychology Today, 33(6), p.22, 2p, 1c. (Database: Academic Search Elite).

Yellin, D. (1983). Left brain, right brain, super brain: The holistic model. *Reading World*, *23*(1), 36-44.

Yoga Inside Foundation (see www.yoga inside.org/who/school.html).

Yogananda, P. (1975). *Man's eternal quest.* Los Angeles, CA: Self Realization Fellowship.

Appendix A

Information Sheet

Information Sheet for yoga demonstrators:

Researcher's Name	Dimple M. Joshi
Address	312-4427, Glenshee Road, Prince George, V2N 4E1, BC, Canada.
Phone#	(250) 960-5671 [Grad Office]; (250) 562-1876 [H]
E-mail	joshid@unbc.ca
Supervisor's Name	Dr. Dennis Procter
Title of Project	Hatha Yoga Curriculum

Type of Project

a) Project_____ b) Thesis_____ Faculty Research____

Purpose of research: To develop a yoga curriculum.

Potential risks: None

How were respondents chosen? Personal contact

What will respondents be asked to do: Demonstrate yoga postures

Who will have access to the photographs: Researcher and readers of the project.

Participation is voluntary: Yes

How anonymity and confidentiality is addressed: Demonstrators will be acknowledged for their participation. They agree that there is no need to provide anonymity because they are demonstrating classic poses and are not involved in any confidential activities.

How will the photographs be stored and how long: In a secured location with the researcher until the completion of the project (December, 2003) and the photographs will then be returned to the demonstrators.

Name and phone number of person to contact in case questions arise to demonstrators: Dimple Joshi (250) 960-5671 [Grad Office]; (250) 562-1876 [H]

How to get copy of research results: Through Dimple Joshi and UNBC library

Do you need a copy of your signed request form? a) Yes _____ b) No_____

In case of any complaints/concerns/questions about the project, please contact the Research Ethics Board at 960-5011.

Appendix B

Consent Form

Consent Form for participant participating in the photo shoot:

Do you understand that you have been asked to be in the photo shoot for the project titled "Hatha Yoga Curriculum"? Yes No

Have you read and received a copy of the information sheet? Yes No

Do you understand that your pictures in Hatha Yoga postures will be inserted in the final document of the project? Yes No

Do you understand that your pictures will be in a permanent document, which will be available for readers in the UNBC library? Yes No

Have you had an opportunity to ask questions and discuss this study with the researcher? Yes No

Do you understand that you are free to refuse to participate or to withdraw from the study at any time without giving any reason? Yes No

The nature of the photo shoot was explained to me by:

I agree to take part in this study.

_____ _____

Signature of participant Date

_____

Printed Name

I believe that the person signing this form understands what is involved in the project and voluntarily agrees to participate.

_____ _____

Signature of the researcher Date

Appendix C

Release of Liability and Waiver Form

Release of Liability and Waiver Form

Note: This is a legally binding agreement. By signing this agreement, you give up certain legal rights, including the right to sue. Please read carefully.

Assumptions of Risks and Agreement to abide by rules of Safety, Release of Liability, Waiver of Claims

I fully accept and fully assume all the risks, dangers, hazards, and the possibility of personal injury. I further acknowledge that all possible risks associated with the above activity are not possible to mention. The list of possible injury in no way limits the extent to reach of this release and covenant not to sue.

Agreement to abide by rules of safety

I hereby acknowledge and agree that I have a personal responsibility to follow safety rules and procedures established for the activity.

Release of liability and waiver

I have read and understood this form prior to signing it and I am aware that by signing this form I am waiving certain legal rights which I may have against the University of Northern British Columbia, the photographer, the supervisor, or the student researcher responsible for injuries that might occur during the photo shoot.

Signed this day of year

Signature of the demonstrator

(Demonstrator) Please print name clearly

Signature of Witness

(Witness) Please print name clearly

Student Researcher's signature

Appendix D

Story incorporating one asana

Story incorporating one asana

Uttanasana (Intense Stretch)

There was a very big forest with various kinds of trees, animals, birds, and other creatures. In this forest was a huge oak tree. Right beside this huge tree grew a bamboo thicket. This oak tree was very boastful about its huge trunk, hard branches, and tall height. It would say, "I am the tallest, the strongest and the hardest tree around" (p.54). Poor bamboo had to listen to its boasting each day.

One day, the wind god was passing through this forest and heard the boasting of the oak tree. The wind god created a wild storm that evening. In this wild storm the hard and the rigid oak tree was unable to bend with the wind and therefore was easily uprooted. However, the supple bamboo bent to the wind's might.

The moral of this story is that we must also learn to keep ourselves supple like the bamboo to withstand the storms of life.

So let's all bend by doing Uttanasana (Intense Stretch).

(Story Adapted From Chanchani & Chanchani, 1995; p. 54).

Note:

1) Teachers can relate to trees grown in BC such as a cottonwood tree or a cedar tree or a giant jack pine tree instead of the oak tree. The bamboo thicket can be replaced with willow or alder trees.
2) Incorporating two poses can further alter this story. Some children can do Vrksasana (Tree) while others can pose in Uttanasana (Intense Stretch).
3) This story can also be dramatized if there are enough children. One child can pose as a tree while others go in intense stretch. With the teacher's help, other children can catch the toppling over rigid big tree! while the bamboo/willows/alder bend in the wind.

Appendix E

Story incorporating various asanas

Story incorporating various asanas

The Name Of The Tree

Once there was a terrible drought. The animals roamed the world looking for water and for food. The animals on their journey crossed a mountain (mountain pose). Then the animals came near a river, drank water and crossed the river in a boat (boat pose) searching for food. As they all were tired, they decided to rest in the beautiful cool light of the half-moon (half-moon pose). The next day they began their journey and came across a tree growing in the middle of a desert. It was tall, and high up in its branches the animals could see all kinds of wonderful fruit. The turtle (turtle pose) told them that it was safe to eat the fruit.

The dog (dog pose) stretched (dog stretch pose) its neck to reach the fruit, but the branches were too high. The eagle (eagle pose) flew up to a branch, but was unable to pull the fruit from the branch. The cow (cow pose) also tried but in vain.

The animals decided the tree must be magic!

"There must be someone who knows how to get the fruit from the tree," said the dog.

The animals thought about it and decided that if anyone knew it would be the wise old lion who lived in a cave at the edge of the desert.

"I will go and talk to the lion," said Snake (snake pose).

So off went the snake. He had to cross a bridge (bridge pose) to reach the cave. He came to the cave and he explained to Lion (lion pose) the problem.

Lion said, "The tree will give you all the fruit you need if only you stand under her branches and say her name."

"Well," said snake, "what is the name of the tree (tree pose)?"

"The name of the tree is Oungalama."

Snake thanked the lion and started back across the desert. He said to himself, "Oungalama, Oungalama, Oungalama, Oungalama…"

Then he started to think about his empty belly and how nice it would be to eat a nice egg or a bug. And he started saying to himself, "Oobugaleggma, Bugeggalama, Eggbugalama, Ooeggalbugma…"

By the time he reached the tree the name was so mixed up that no one could untangle it.

Camel (camel pose) said he would go and find the name. He walked and walked until he came to lion's cave.

Lion told him that the name of the tree was Oungalma.

Camel started back saying to himself, "Oungalama, Oungalama, Oungalama, Oungalama…"

Then he started thinking about how hungry he was and how nice it would be to eat some grass or some hay. He started saying to himself, "Oograssgahayma, Haygrassgalama, Oohaygagrassma…"

By the time he reached the tree, poor Camel couldn't remember the name no matter how hard he tried.

All the other animals tried but none of them were able to remember the name either. No one else volunteered to go because they were all afraid they would fail too.

Finally a young girl offered to go.

Everyone laughed.

Dog said, "Clever animals like Snake and others have gone. Fast animals like Camel have gone. Others tried too. And no one has been able to bring back the name. Why do you think you could do any better?"

"Please let me try," said the little girl. And since nobody else stepped to go and since everyone was still hungry, Dog said she could go.

The little girl walked until she came to lion's cave.

"Please," said the little girl, "could you tell me the name of the tree?"

"The name of the tree is Oungalama."

"Thank you very much. And if it's not too much trouble…" said the girl pulling a piece of paper and a pencil out from her pocket, "could you tell me how to spell that?"

So the lion spelled the name out for her and the little girl wrote it down.

She walked back to the others as fast as she could. There she gave the paper to Dog.

Dog looked at the strange word and said, "What is this? What does Oungalama mean?"

And down came the fruit. And the animals ate and they were never hungry again. So finally they all had a nice rest (corpse pose).

(A traditional tale retold by Ms. Thompson)

Appendix F

Asana incorporating a tunnel game

Asana incorporating a tunnel game

Figure 79: Passing through a tunnel made with Dog pose.

Appendix G

Asanas Plan for Elementary School Students during a calendar year

Asanas Plan for Elementary School Students during a calendar year

September Week 1

Day 1	Day 2	Day 3
General brief introduction on asanas (poses)	Tadasana (Standing Still)	Urdhva Hastasana (Upward Stretch)
Tadasana (Standing Still)	Urdhva Hastasana (Upward Stretch)	Uttanasana (Intense Stretch)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 2

Uttanasana (Intense Stretch)	Vrksasana (Tree)	Utkatasana (Mighty)
Vrksasana (Tree)	Utkatasana (Mighty)	Garudaasana (Eagle)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 3

Garudaasana (Eagle)	Utthita Trikonasana (Triangle)	Utthita Parsvakonasana (Side angle stretch)
Utthita Trikonasana (Triangle)	Utthita Parsvakonasana (Side angle stretch)	Virabhadrasana II (Warrior II)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 4

Virabhadrasana II (Warrior II)	Virabhadrasana I (Warrior I)	Virabhadrasana III (Warrior III)
Virabhadrasana I (Warrior I)	Virabhadrasana III (Warrior III)	Ardha Chandrasana (Half Moon)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

October Week 1

Day 1	Day 2	Day 3
Ardha Chandrasana (Half Moon)	Prasarita Pada Uttanasana (Intense leg spread)	Chaturanga Dandasana (Plank)
Prasarita Pada Uttanasana (Intense leg spread)	Chaturanga Dandasana (Plank)	Adho Mukha Svanasana (Dog)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 2

Adho Mukha Svanasana (Dog)	Urdhva Mukha Svanasana (Dog stretch)	Setu Bandha Sarvangasana (Bridge)
Urdhva Mukha Svanasana (Dog stretch)	Setu Bandha Sarvangasana (Bridge)	Adho Mukha Vrksasana (Inverted Tree)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 3

Adho Mukha Vrksasana (Inverted Tree)	Virasana (Hero) + Parvatasana in Virasana (Mountain in Hero)	Supta Virasana (Sleeping Hero)
Virasana (Hero) + Parvatasana in Virasana (Mountain in Hero)	Supta Virasana (Sleeping Hero)	Gomukhasana (Cow)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 4

Gomukhasana (Cow)	Navasana (Boat)	Padmasana (Lotus)
Navasana (Boat)	Padmasana (Lotus)	Baddha Padmasana (Tied Lotus)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

November Week 1

Day 1	Day 2	Day 3
Baddha Padmasana (Tied Lotus)	Parvatasana (Mountain)	Tolasana (Scales)
Parvatasana (Mountain)	Tolasana (Scales)	Simhasana (Lion)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 2

Simhasana (Lion)	Kukkutasana (Cock)	Dandasana (Staff)
Kukkutasana (Cock)	Dandasana (Staff)	Janu Sirsasana (Head-to-knee)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 3

Janu Sirsasana (Head-to-knee)	Paschima Uttanasana (Intense head-to-knee)	Baddha Konasana (Butterfly)
Paschima Uttanasana (Intense head-to-knee)	Baddha Konasana (Butterfly)	Upavistha Konasana (Fan)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 4

Upavistha Konasana (Fan)	Kurmasana (Turtle)	Bharadvajasana I (Twist 1)
Kurmasana (Turtle)	Bharadvajasana I (Twist 1)	Ardha Matsyendrasana I (Twist 2)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

December Week 1

Day1	Day 2	Day 3
Ardha Matsyendrasana I (Twist 2)	Salabhasana (Locust)	Makarasana (Sea creature)
Salabhasana (Locust)	Makarasana (Sea creature)	Bhujangasana (Snake)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 2

Bhujangasana (Snake)	Ustrasana (Camel)	Urdhva Hastasana (Upward Stretch)
Ustrasana (Camel)	Tadasana (Standing Still)	Ardha Matsyendrasana I (Twist 2)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

Week 3

Uttanasana (Intense Stretch)	Vrksasana (Tree)	Utkatasana (Mighty)
Ardha Matsyendrasana I (Twist 2)	Bharadvajasana I (Twist 1)	Bharadvajasana I (Twist 1)
Savasana (Corpse)	Savasana (Corpse)	Savasana (Corpse)

January

Week 1

Story incorporating asana (Refer Chanchani & Chanchani, 1995 for more ideas on stories).	Story incorporating asana	Story incorporating asana

Week 2

Game(s) involving poses (Refer Stewart & Phillips,	Game(s) involving poses	Game(s) involving poses

1992 for more ideas on games)		

Week 3, Week 4

Day 1	Day 2	Day 3
Story	Game	Story

The same pattern of story telling and games can be followed for the remaining semester or follow the lesson plan from September until December but now let the student stay in the pose for a longer time. Teachers can also follow their own new ideas and those of their students who are quite inventive.