

Yoga Therapy and Chiropractic for Peak Athletic Performance Training

Yoga, an ancient science, is becoming an integral component in contemporary athletic training. This literature review details some of the mental and physical benefits of yoga that can be applied to sports chiropractic. I will discuss the scientific research of the use of yoga as a therapy in developing psychological skills and physical training for sports, and the effects of meditation, breath control and yoga postures in the enhancement of increased athletic performance. I will also describe the coordination of mental and physical training and the elimination of psychological barriers that often inhibit performance potential. The concept of combining chiropractic and yoga philosophy will also be presented.

Introduction

The relationship between the goals of yoga and sports is the main focus of this review. The word yoga is derived from the Sanskrit root term yui, meaning "to bind, to join, to direct and concentrate one's attention."¹

Yoga is a holistic system that teaches skills many athletes seek, such as control over the mind; control over the body; good breathing habits; relaxation under pressure; highly developed concentration skills; and the ability to focus on the present. According to Patanjali, the scholar who codified yoga in the second century BC, meditation (a component of yoga) is "... the uninterrupted flow of concentration toward an object."¹ Meditation is superconcentration. The importance of focus in sports is obvious; the greatest athletes are legendary for their powers of concentration."²

In competition, athletes at all ability levels tend to have a fear of losing, of other competitors, or of developing mental deterrents to excellent performance. Meditation is useful in overcoming these problems.

According to Pearce, "... meditation trains thought to be one pointed in the face of the brain's continual barrage of sensory impressions and desires."³

Pearce notes that meditation will then develop one's will power; that is, the ability and desire to retain to single-pointedness and discrimination in the face of confusion and distraction. Increased willpower through meditation can improve both athletic performance and enjoyment in sports.^{2,3}

The purpose of yoga is to combine the forces of the mind and body so that they are not at odds with one another. The philosophy is that one cannot acquire control over the body without also acquiring control over the mind. The traditional thinking (training the body to the demands of the sport and hoping the mind is trained along with it) has already been challenged with a contemporary view that suggests the mind and body are separate entities requiring equal consideration in the development of training skills.³

Yoga may enhance whole-brain function. Studies indicate that when the brain was vibrated in the

alpha state, subjects relaxed until they attained an alert state of awareness.³ The more aware the athlete is of body and mind, the greater his or her opportunity to prevent or control injuries. The body and mind can only cope with a certain amount of stress before breakdown occurs, producing illness and injury.^{2,3}

The three aims of yoga are:

- physical tone and awareness
- controlled breathing
- controlled concentration

These function together to produce a greater control over the mind and body in competition.³

Physiological investigations by Pasek and Romanowski have shown that function of the central nervous system in yogis has displayed tendencies toward increased parasympathetic predominance. The meditator's physiology is characterized by a decrease in oxygen consumption, metabolic rate, breath rate, cardiac output and blood lactate.⁴

The consequence of this deep relaxation (or alpha) state for the meditator is increased mind-body coordination; faster reaction; more effective interaction with the environment; increased intelligence; increased ability; and decreased anxiety.⁵ Psychological investigations suggest that yoga improves mood, reduces anxiety and develops willpower, which helps eliminate psychological barriers.²

My intention is to discuss the physiological and psychological benefits of yoga and provide research on it and its components: meditation, hatha yoga (physical postures) and pranayama (breath control). I will also show that yoga as a therapy will enhance athletic performance potential and dictate how well yoga therapy merges with the principles and practice of chiropractic. Yoga uses awareness, relaxation, visualization, and willpower techniques, which have been found over thousands of years of experience to be effective in remolding the mind and body.

Hatha Yoga (Physical Postures for Flexibility, Strength and Recovery)

The most pertinent form of yoga to athletes is hatha yoga, characterized by holding passive physical positions, relaxing the mind and body, and focusing attention. Yoga asanas, or postures, are similar to passive stretching before or after competition or training. Asanas help develop flexibility, an easily recognized benefit. These also help develop an awareness of the body to maintain good tone and tension of specific muscles. Hatha yoga practices are not designed to increase the fitness of the individual as measured by traditional fitness tests. However, according to Gharote, after administering several tests of physical fitness before and after a three-week program of yoga training, the results showed a statistically significant positive change in the overall fitness index of those tested.⁶ Asana is a relaxation technique that athletes find accessible. It can be easily incorporated into an athlete's competition/preparation schedule.

Mental concentration is of great benefit to all athletes. The development of concentration occurs because when one is in an asana, one focuses the mind on one aspect of the body position. Any extraneous thoughts that pass through, interrupting the flow of concentration, are allowed to pass through with one's attention always returning to the point of focus. The aim of all yoga is to focus the mind on the present and the present only.³

Asanas are both static and dynamic. They are designed to relax and strengthen both body and mind. They are not gymnastically exercised requiring strain and effort, or even muscle development. Instead, asanas afford relaxation and increased energy, and they help one gain more out of meditation.⁵

There is an important distinction between physical exercise and yoga asanas. Exercise is derived from *exercere*, a Latin word roughly meaning "to drive forth"; hence, to employ, to set to work. Exercise connotes exertion of the muscles and limbs. Exertion, in turn, requires vigorous action or effort.

Asana, on the other hand, literally means "sitting positions or posture." As used by Patanjali, it refers to the attainment of a steady and comfortable posture for the practices of pranayama (breath control) and dyana (meditation).⁶

Asanas are composed of meditative sitting postures and the non-meditative asanas that promote general physical well-being. When practiced correctly in conjunction with mental concentration and breath control awareness, homeostasis is the beneficial result.⁵

According to Pasek and Romanowski, heavy physical exercises strain and tire the body rather than give energy to it. The muscles hypertrophy and consequently use up more oxygen. When the oxygen stores become depleted because of tension or heavy exercise, the lactate level increases because of increased muscle bulk. This leads to exhaustion and, subsequently, to physical disease. Asanas, on the other hand, do not add muscle bulk but increase the efficiency and strength of the body by aiding in the removal of lactic acid. Asanas rest the body and facilitate oxygen utilization, which in itself prevents lactate formation. At the same time, they allow more work to be carried out, because oxygen provides more energy and strength through the oxidation of glucose.⁴

Pasek et al. have conducted experiments that point to increased input to the brain from the various sensory receptors during asana practice. This occurs because of increased pressure on particular muscle and organ groups while the muscles remained relaxed. Simultaneously, there is increased blood flow and oxygen to the brain, liver, and other organs combined with excitation of certain centers within the brain through mental concentration. This increases tissue health through a massaging effect on the affected muscles and external organs.^{4,5} This stimulation to the brain registers relaxation and reduces tension, which increases energy within the body.

After some time, there develops a new pattern in the lower centers of the brain, which is harmoniously integrated with the higher cortex of the brain and is conducive to good health. This is a very important difference between yoga asanas and ordinary exercises. The research findings of Pasek et al. confirm that with systematic use of asanas, better autonomic patterns and greater control and coordination evolve in the lower brain, resulting in better coordination of all brain functions. Emotional equilibrium and control are established to an extent not found in conventional physical cultures.^{4,7}

Many diseases are linked to a crooked spine. If the spine is not straight, energy from the brain is disturbed by pressure applied on the nerves from associated spinal-vertebral structures. With the help of asanas, the spinal column remains supple and the spinal cord functions in its normal manner. By allowing poor spinal posture, discomfort is created while attempting to meditate. Health and strength of the abdominal musculature are needed to maintain the health of the intestinal tract and assist the diaphragm in breathing practices.^{5,6}

Experiments have shown that illness causes the spine to become misaligned, and subluxation complexes ensue. Hence, misaligned vertebra can irritate nerves as they emerge from the spinal cord through the spinal column and impinge on the flow of nerve impulses. Asanas prevent this by straightening the spinal column. Asanas help realign the spinal column and encourage blood flow to nourish the spinal cord and associated nerve plexes.⁵

Interaction of Sports Chiropractic and Yoga Therapy for Peak Athletic Performance

The correlation between chiropractic and yoga is through the spine. Both disciplines recognize that a healthy, aligned spine is conducive to better health. As we already know, by freeing the energies of the spine, the tissues of the entire body are better controlled by the higher centers of the brain.

The organs of the body benefit, and their internal function is synergistically enhanced.⁵

Yoga and chiropractic recognize disease as a process of imbalance. They seek to rebalance and maintain homeostasis. Yoga and chiropractic philosophy are based on a holistic view of the universe, in which the mind and body are seen as one organ functioning as an expression of a universal intelligence that manifests itself as our human innate intelligence.

Chiropractic and yoga can be aligned to clinically enhance health and well-being to all athletes. The sports chiropractor may want to include yoga as a personal lifestyle/philosophy and practice to enhance and improve mental and physical relaxation and concentration.

Yoga asanas are closely related to chiropractic techniques; they are based on the structural aspects of the human body and their replacement and manipulation into positions of better function. The sports chiropractor can incorporate yoga along with chiropractic adjustments to alleviate acute suffering, or they can give the necessary adjustment so that the body can immediately resume a position of better function. Through asana, pranayama and dyana or meditational techniques as self-help methods to maintain an aligned position and a more relaxed nervous system, athletes can learn to improve their concentration and refocus techniques for peak performance enhancement.

Sports chiropractors can offer relaxation and mental concentration techniques provided by yoga asanas, breathing, and meditation to enhance athletes' ability to learn how to dive deep within themselves and find the cause of their imbalances, pain, or tension, etc., as well as to discover their inner peace and harmony.

I suggest that the best and most effective method of introducing yoga is for sports chiropractors to learn yoga techniques for themselves and feel the many benefits of such a system before they apply and recommend yoga for their athletes.

Conclusion

Scientific investigations on the main components of yoga have concluded that yoga improves mind-body coordination by increasing physical tone and awareness while improving mind and breath control, which are necessary components for better performance in competition. Meditation has been proven to reduce anxiety, stress and muscular tension, and it aids in the process of focusing and refocusing on an object, which is essential to athletic performance. Sports chiropractors and other practitioners will benefit by relaxed awareness or alert relation.

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