

# An Analysis of Yoga's Value in the Context of Sports and Physical Education

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**Abstract:** Working with the body to promote healthy attitudes and actions is emphasized heavily in yoga, one of the Indian spiritual traditions. Yoga also contributes to the preservation of mental and physical equilibrium. However, it seems that a decline in the practice, especially among athletes, has been attributed to a lack of awareness about the advantages of yoga for athletes. Thus, athletes, PE students, teachers, yoga practitioners, health professionals, and those interested in studying yoga are the target audience for this narrative review. The advantages of yoga for physical education and sports are discussed in this review, which also reveals a lower connection between the yoga and sports systems. The whole of the material for this article was obtained by doing searches using keywords such as "yoga," "physical education," "asana," and "sports." Numerous beneficial yoga components impact athletic performance, and these important features are explained with pertinent facts. The findings of the review study all highlight the benefits of yoga for physical education and sports, and they also underscore the need for a more thorough comprehension of the yoga system in relation to health, PE, and sports education.

**Keywords:** Physical education, Sports, Athletic Injuries

## I. INTRODUCTION

The push-button age minimizes physical exertion needed to execute daily chores, lowering fitness and increasing sickness. To avoid health difficulties, individuals must exercise daily. Exercise is the easiest and most effective approach to stay healthy (Chatterjee & Mondal, 2014). With judicious usage and exercise, every part of the body will grow and become healthy. If neglected and inactive, it will age faster, grow slower, and become sicker. Physical education improves performance and growth via physical exercises. Physical education aims to enhance motor skills, maintain fitness, increase knowledge, and foster a good attitude toward exercise. Thus, healthy living requires physical education (Bailey, 2006). A sportsperson influenced by internal and external factors defines sports as an organized competitive activity demanding great physical effort or advanced ability. Sports are becoming more popular, and this trend is likely to continue. Since they foster global understanding, sports and physical education are becoming global topics. Every nation must promote physical education and sports morally and socially (Mosler et al., 2022). Indian yoga is a unique way to develop awareness. By vibrating with the body, mind, and intellect, one may control internal and external forces. Yoga brings life fullness, completeness, and purity. Man seeks pleasure from birth to death, and diverse yoga practices meet the needs of different social groups. To completely enjoy holistic living, practice yoga purposefully (Hayes & Timalina, 2017). Despite the preponderance of studies on yoga and its benefits, there is little information regarding its role in physical education and sports. Most study does not address using yoga to reduce sports' negative effects and side effects. Thus, this study investigated yoga and sports. This research aimed to give complete yoga information, including its health benefits and role in minimizing sports-related side effects.

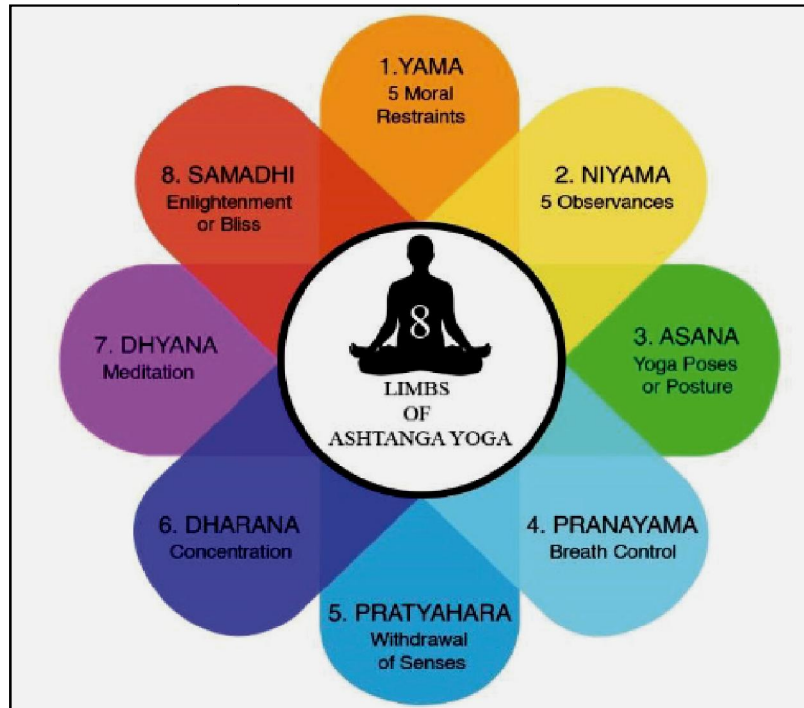
### Systems of yoga and its importance

According to the Vedas, yoga has numerous systems: Karma, Bhakthi, Janana, Hatha, Mantra, Yantra, Laya, Kundalini, Tantra, and Raja. Following Karma yoga is completing your task without concern for oneself. Karma yoga aims to manage and release the ego (Pallathadka et al., 2022). Bhakti yoga is devotional or love yoga. Bhakti yoga seeks Rasa (essence), pure happiness achieved through devoted surrender to the almighty. Meditation, self-inquiry, and

contemplation are used in janana yoga to discover truth (Hayes & Timalsina, 2017). Hatha yoga utilizes physical practices to channel and safeguard vital energy (Petrič et al., 2014). Mantra yoga involves reciting holy words, mindful breathing, and meditative attention to calm the mind, develop spiritual energy, and gain enlightenment (Vaidik et al., 2020). Yantra yoga uses seven-phase breathing and movement. Positioning at the core portion of each movement helps create deep, subtle breath retentions (Rathore et al., 2017). Laya and Kundalini yoga emphasize significant dharma accomplishments or the life objective of liberation from Karma. Raja yoga focuses on concentration and energy to manage mind and body (KR, 2019; Hayes & Timalsina, 2017). All yoga methods help practitioners in distinct ways (Roland et al., 2011).

**Raja Yoga or Astanga Yoga**

Raja yoga is the most effective body-tuning method. Astanga yoga is Raja yoga. “Ashtanga” refers to Raja yoga's eight steps (Figure 01): Yama, Niyama, Asana, Pranayama, Pratyahara, Samadhi, Dharana, and Dhyana (KR, 2019). The limbs are ordered hierarchically and lead to each other. Each limb must be learned before practicing the next. Players profit differently from each level (Y. Sharma et al., 2018).



**FIGURE 1. Eight Limbs of Ashtanga Yoga**

**Yama**

Yama is a universal moral law. General discipline (social attitude) and body, mental, and voice control. For the finest sportsmanship, players should know five Yama (Ross & Thomas, 2010).

**Yama:**

- Ahimsa - Non- violence
- Satya - Truthfulness
- Asetya - Non- stealing
- Brahmcharya - Faithfulness
- Aparigraha - Non-greed

**Niyama**

Niyama is self-purification via discipline or propriety. Niyama—devotion to an unlimited power—is the way of life. It emphasizes remembering and giving God everything. Players must observe Niyama's five rules to preserve discipline with opponents, teammates, physical education instructors, coaches, authorities, family, and society (Y. Sharma et al., 2018). The Yamas and Niyamas emotionally and physically prepare the body for asana.

**Niyamas:**

- Saucha - Cleanliness
- Santosha - Contentment
- Tapas - Self-discipline
- Svadyaya - Self-study
- Ishvara pranidhana - Surrendering to the divine and high power

**Asana**

Asana is the third of eight yoga limbs. Physical education and sports are linked to it (Ross & Thomas, 2010). It is the oldest self-development science for physical, mental, and spiritual control. Asana may be done by all sexes, ages, and professions (Jose & Shailesh, 2021). If physical education professionals, coaches, and players are creative, asana may be used for many reasons in sports and physical education (Cowen & Adams, 2005). Asana is used in physical education and sports to promote a healthy body and self-control and mental stability (Ross & Thomas, 2010). Playing requires a healthy body and mind since humans are psychosomatic. Asana helps players synchronize their body and mind (Bal & Kaur, 2009; Chatterjee & Mondal, 2014). Figure 02 shows yoga poses.

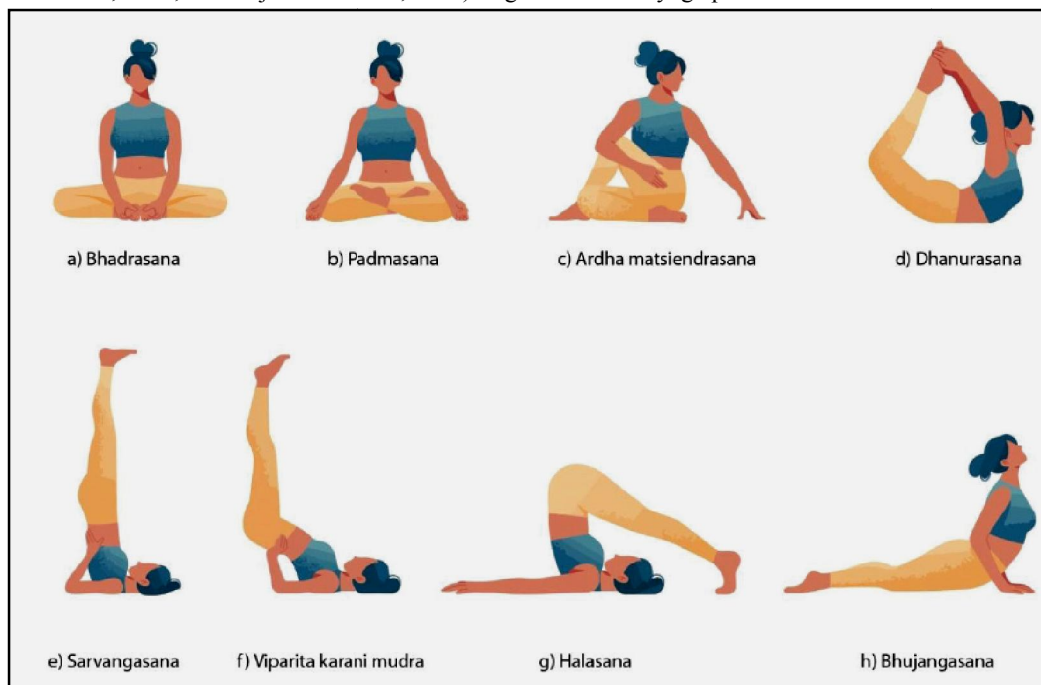


FIGURE 2. Yoga Asanas

**Pranayama**

Pranayama contains three phases: Puraka (inhalation), Kumbhaka (retention), and Rechaka (exhalation). These are best done early morning or late evening. The diaphragm was completely used in pranayama by bringing air into the lowest and biggest lungs (Sengupta, 2012). Pranayama improves respiratory efficiency, lung vital capacity, heart rate, and training to tolerate mild hypoxia, which can stimulate the myocardium to increase its vascularization at higher altitudes. Practicing Pranayama regularly benefits players in several sports (Telles & Naveen, 2008). It benefits aerobic athletes.

### **Pratyahara**

Pratyahara involves isolating sense organs from worldly things (Ross & Thomas, 2010). It involves willpower and sensory suppression. Sanskrit gave us “Pratyahara”. Two Sanskrit terms are included: “Prati” (meaning “to withdraw”) and “Ahara” (meaning “food”). What humans mentally ingest is called "food" (Himashree et al., 2016). To elaborate, “Ahara” may be everything individuals put into their bodies and minds physically and emotionally. This phenomena helps athletes modulate their senses, enhancing fitness, health, and performance (Taneja, 2014).

### **Dharana**

Dharana is object focus. The last stage of Samadhi meditation begins. Dharana focuses a person's attention on one thing (KR, 2019). Sports failure results from distractions during training and performance. Archery, shooting, chess, etc. demand greater focus. Football, hockey, and handball goalkeepers need more focus than field players (Y. Sharma et al., 2018).

### **Dhyana**

Dhyana involves total meditation on the focus. Meditation is the best mental and physical tonic. It leads to intuitive understanding, outward joy, and mental peace. Regular meditation helps athletes calm their mind and body, improving psychological stability (Mastun et al., 2020; L. Sharma, 2015).

### **Samadhi**

Samadhi is yoga's peak. Genuine conversation and tranquility. Samadhi is mind-stillness that permits one to unite with the cosmos (KR, 2019). Yoga is about calming the mind and transcending the senses through body and mind purification. The last and most crucial level of yoga is not suitable for athletes.

### **General importance of yoga**

Yoga is beneficial physically, biochemically, and psychologically (Büssing et al., 2012). Yoga has physical benefits, especially via asana training and appropriate posture (Petrič et al., 2014; Y. Sharma et al., 2018). Activity increases strength, lower back, hamstring, and shoulder flexibility (Tracy & Hart, 2013). This improves health and strengthens weak areas (Ross & Thomas, 2010; L. Sharma, 2015). Yoga benefits from pranayama are largely physiological. Slowly adapting receptors stretch lung tissues during deep breathing (Zaccaro et al., 2018). This improves lung capacity, oxygen intake, and respiratory and cardiovascular efficiency (Cooper, 2003). Thus, blood pressure and pulse were controlled automatically. Vitality is also increased. Pranayama improves immunity and neuromuscular coordination (V. Sharma et al., 2013; Telles & Naveen, 2008). Total cholesterol, LDL, triglycerides, and blood urea decrease with yoga (Himashree et al., 2016). Yoga boosts respiration, VO2 max, and hemoglobin. Yoga lowers stress and increases endorphins and gamma aminobutyric acids. These chemicals improve mood and reduce anxiety (Y. Sharma et al., 2018). Yoga decreases anxiety, anger, sadness, inattention, social stress, and enhances mental focus, attention, self-control, self-acculturation, psychological stability, social skills, and connections with parents and peers.

### **Importance of yoga for sports and innate side effects of sports**

Sports allow people from across the globe to bond and share ideals. Sports activities are good for human interaction. Most individuals do sports for fun and health (Chen & Sun, 2017). Games have also become a procession. Competitive sports vary greatly from leisure sports. Competitive sports need extensive, hard training. Competition success is very important to athletes. Competitive sports often cause injuries (Finch & Staines, 2017). Most sports employ one body component, which causes asymmetry and abuse of limbs, causing players physical and emotional stress (Bailey, 2006). As sports become more professional, athletes experience stress. Athletes' minds and bodies benefit from yoga (Ross & Thomas, 2010). Professional athletes should know that yoga helps them reach and sustain peak physical and mental strength (Banerjee et al., 2007; Sahu & Yadav, 2020).

### **Importance of Yoga for Athletes – Running**

Long-distance runners often overtrain without realizing it. Running irritates the lungs and heart, upsets the stomach organs, and cramps the blood flow (Bramble & Lieberman, 2004). As athletes age, their endurance ability declines. Yoga softens hard-working hamstrings from jogging (Cowen & Adams, 2005). Marathon runners benefit from Sitali Pranayama's heat-removal (Telles et al., 2020). Asanas like Supta Virasana and Urvottanasana safeguard the heart, lungs, and abdominal organs with back and forward bends and twisting. These poses also improve reproductive organ core muscles (Cowen & Adams, 2005). Bridge poses, shoulder stands, and restorative postures stimulate the primary reproductive glands, which generate hormones (Chatterjee & Mondal, 2014).

### **Importance of Yoga for Athletes in disciplines that include jumping**

One-legged leaps are performed. Body asymmetry comes from frequent usage of one side. One side opens the groin muscles and strains the hip joints (McClanahan, 2002). Asanas that open the groin, such as Upavishta Konasana, Samakonasana, Buddha Konasana, and Supta Padangusthasana, may help jumpers avoid imbalances (Solakoğlu et al., 2021). Hanumanasana optimises triple and long jumpers' muscles. Pole vaulters exercise both sides for weight bearing using balancing asana (Jose & Shailesh, 2021). Kasyapasana and Vasishtasana work the sides and latissimus dorsi (Rathore et al., 2017).

### **Importance of Yoga for Athletes in disciplines that include throwing**

Most throwing is one-arm. Overused and underused muscles cause problems (McCLANAHAN, 2002). Throwing discus always requires one folded hand and no other. Shot-put throw one-sidedness may continue for years after the sport finishes. Right-sided spine rotation (excluding lefthanders) is common. Overstraining facet joints causes uneven wear and scholastic deformation (Russell et al., 2012). Yoga twists and lateral bends reduce spinal strain and maintain usage evenness (Holtzman & Beggs, 2013).

### **Importance of Yoga for Archery In archery,**

One eye, shoulder, and brain side are overused (Sahu & Yadav, 2020). Archers acquire trapezius nodules with time. Use symmetrical eyes in standing positions to help the archer improve both orbital muscles and ocular concentration (Jose & Shailesh, 2021). Handstand, elbow stand, balance poses, unilateral balancing poses like Vasisthasana, and dog poses done both ways with fingers on the wall and in the opposite direction help balance the body, including the hands, and reduce visual discomfort (Telles et al., 2006). The inattentive archer might benefit from meditative Pranayama and Nadi suddhi (Sahu & Yadav, 2020).

### **Importance of Yoga for Shooting**

Shooting and archery strain the eyes. Forward bends with the bandage on the eyes and Shanmukhi mudra and asanas reduce eye strain (Telles et al., 2006). Balance and flexibility necessitate lengthy gun grip without bouncing in the shooting game. Yoga improves balance and flexibility (Cowen & Adams, 2005). It also strengthens and refines connective tissues (Iftekher et al., 2017; Bühlmayer, 2017).

### **Importance of Yoga for Boxing**

Allowing two people to play a sport that involves striking one other and risking damage is unreasonable. Crowding hands close to the body hinders breathing and extending hand and torso muscles. For the spine, back bends beat forward bends. Handstand, Urdhva dhanurasana, elbow balancing, dog position, and wall ropes to protect the spine are beneficial asanas for extending the frontal torso (Telles et al., 2006). Uttanasana, sitting forward bends, dog pose, headstand, shoulder stand, Viparita, and asanas soothe the mind, brain, and senses from incessant hammering (Banerjee et al., 2007).

### **Importance of Yoga for Wrestling**

Ancient wrestling isn't that physically or mentally demanding. Wrestlers have diverse styles, but they all need to be big and heavy (Yamauchi et al., 2004). Pushing the opponent out of the ring is sumo wrestling's mildest form. Sumo



wrestlers, who are obese, have hypertension, diabetes, and early spine, hip, ankle, and knee degenerative diseases (Mouzan et al., 2010). An inactive, overweight wrestler rapidly ruins his physique after retiring. Wrestlers regularly adjust their diet to lose weight for a category, which damages their metabolism. Standing asana protects hips and knees. Asana, which opens the groin, aligns and supplies blood (Shaw & Kaytaz, 2021; Lehecka et al., 2021).

#### **Importance of Yoga for Weightlifting**

Weightlifting exerts significant stresses on the body. The lungs, heart, and abdomen are constantly stressed by additional weight. Overloading strains the cervical spine, causing persistent low back discomfort (Alabbad & Muaidi, 2016). Twisting postures are great for softening weightlifters' rigid muscles (Cowen & Adams, 2005). Resting the posterior muscles of the spine in passive backbends reduces back strain (Keogh & Winwood, 2016). Front bends enhance blood flow to the posterior spinal muscles, which are usually limited during weightlifting (Ernst, 2016). Upavistha and Baddha konasana relieve squat-pressured pelvic organs (Hemmerich et al., 2019). Ujjayi pranayama calms the mind, heart, lungs, and senses (Sahu & Yadav, 2020). As the elevator finishes, the weightlifter must execute Kumbhaka. Constricting the diaphragm reduces circulation. Pranayama's protracted exhale relieves this tension (Holtzman & Beggs, 2013; Lynn & Basso, 2023).

#### **Importance of Yoga for Gymnastics**

Gymnastics is one of the most elegant and fashionable sports. Gymnastics is interrupted by extension movements. This loosens ligaments and muscles (Kerr et al., 2015). Lower lumbar muscle sprains and spine injuries are prevalent (Kruse & Lemmen, 2009). Gymnastics requires much practice due of its complexity. Yoga aligns and balances all cells (Jose & Shailesh, 2021). Backbends help the body and mind endure mental distress (Bal & Kaur, 2009). Yoga teaches right position geometry to avoid injuries (V. Sharma et al., 2013). Pranayama reduces mental and sensory stress.

#### **Importance of Yoga for Swimming**

Swimming uses the upper and lower extremities symmetrically. This eliminates field sports' damage. Buoyancy relieves lower back discomfort, making swimming easy (Smith et al., 2006). Nutritional deficiencies result from weight maintenance (Hoogenboom et al., 2009). The glandular system may change temperature when the swimmer goes from land to water. Swimmers spend more time in water, which adapts their muscles to G force stimuli and may modify their ability to resist physiological stress and strain on land (Kline et al., 2007). This may be avoided by doing some ground exercises daily. This non-stressful workout should aid recovery. Handstands, dog posture, back bends, elbow balance, and correct arm stretch reduce tension (Jose & Shailesh, 2021). Inversions reduce eye, sinus, ear, and leg fatigue. A backbend helps the body sweat off heat (Keogh & Winwood, 2016). Upavishta and Baddha konasana enhance tight groins (Bal & Kaur, 2009). As the upper respiratory organs enter and exit water, pranayama helps coordinate inhalation and exhalation (Chatterjee & Mondal, 2014). It also helps clear nasal secretions and lower and upper respiratory tracts. Kumbhaka boosts water sports endurance (Ross & Thomas, 2010; Telles & Naveen, 2008).

#### **Importance of Yoga for Rowing**

Rowers are always bending forward. Body parts affected include the spine, groin, and hands. Frequent flexion forces may prematurely deteriorate the spine and bow the dorsal spine (Thornton et al., 2016). Constant pressure makes buttock bones painful. Spinal muscles may degenerate prematurely and arms can be stressed by asymmetry (Hosea & Hannafin, 2012). Knees must be extended. The position strains breathing and circulation (Kohli et al., 2019). Elbow balancing, handstand, and backbends improve arm extension and blood flow (Tran et al., 2001). Oarsmen's spinal muscles and lower limbs benefit from standing postures (Jose & Shailesh, 2021). Inversions cool the brain, which is continually contracted, whereas Baddha and Upavishta konasana tighten the groin and increase blood circulation (Bhavanani, 2013). Pranayama boosts endurance and reduces sensory stress. Yoga has benefits for rowers (Das & Yoga, 2022).

### **Importance of Yoga for Football**

This game has the most semi-lunar cartilage tears. Weight-bearing makes knee rotations outward excellent for yoga. All yoga standing postures strengthen realign, massage cartilages, and increase weight bearing (Liu et al., 2021). Padmasana and Virasana, which massage the joints, should be done everyday before and after the game to help the player.

### **Importance of Yoga for Hockey**

Hockey strains the knees, shoulders, and spine most. Hockey players must always bend one direction while tackling. With one arm extended and the other flexed, the spine is twisted to one side. Strain in the dominant shoulder (Barboza et al., 2018). Forearms and inner biceps are worked. Asymmetry is employed with legs, emphasizing the back knee (Cowen & Adams, 2005). Low back discomfort, knee wear, and cervical muscular tension are long-term concerns (Barboza et al., 2018). Following the ball exhausts the mind and senses. Dog stance corrects spinal muscle imbalance best (Govindaraj et al., 2016). Virasana and Padmasana relieve tired knees (Kohli et al., 2019). Synchrony in hand and shoulder posture supports backbends like Viparita dandasana and Urdhva dhanurasana (Tran et al., 2001). Supine pranayama and band forward bends calm the mind and eyes (Bühlmayer et al., 2017).

### **Importance of Yoga for Cricket**

Cricket is a popular sport that's becoming harder. To prevent injury, players must wear helmets and other protective gear. Yoga challenges vary with playing position in the main game (Gamage et al., 2017).

### **The Batsman**

Right-handed hitters must continually sway their spine and gaze left. Every left hip and shoulder projects the same manner. The left collarbone is hollowed out and the right shoulder is always lower. Like the inner ankle, the inner knee bears greater weight. Forward bends cool the body after extensive sun exposure (De Zavala et al., 2017). Backbends provide batsmen the energy to play for hours (Mohanty et al., 2019).

### **The Bowler**

Forward bends keep the body cool after extensive sun exposure (De Zavala et al., 2017). Backbends offer bowlers energy, so they can play for hours. A nodule forms when the non-dominant shoulder trapezius muscle is constantly tensed. Rotational standing Marichyasana and Bharadwaj asana relieve neck pain (Li et al., 2019). Rope back bends, neck extension, and bar behind the back provide neck and shoulder relaxation. Backbends give fast bowlers endurance (Cowen & Adams, 2005). Ultimately, ardha halasana helps recover (Fishman, 2021).

### **The Wicket Keeper**

A wicketkeeper must crouch and rise multiple times daily. Due to constant neck flexion and extension, spinal, groin, low back, and cervical discomfort might result (Mount et al., 2014). Perception is also abused since the keeper must watch the ball and be alert. Rotations and lateral standing postures reduce back strain (Solakoğlu et al., 2021). Baddha, Upavishta, and Supta Baddha konasana relieve groin discomfort. Ardha halasana and forward bends relax. Shanmukhi mudra reduces visual and mental fatigue (Holtzman & Beggs, 2013).

### **The Fielder**

Fielders have less posture difficulties. Sunlight, salt, and fluid loss decrease energy. Supta virasana and passive inversions effectively reduce tiredness (Muñoz-Vergara et al., 2022).

### **Importance of Yoga for Tennis**

Tennis players overuse their serving arm. A thicker forearm and underuse of the opposite arm characterize the dominant hand. Players misuse their wrists and medial elbows while top spinning the ball (Marcora, 2009). The other upper arm and forearm muscles are best for single-handed backhanded strokes. Tennis causes elbow, shoulder, and knee discomfort (Pluim et al., 2006). Asanas including handstands, dog pose, upward dog, and balancing postures relieve

shoulder and elbow discomfort (Evans, 2013). Vitrita karani and Sputa virasana help the neuro-endocrine system relax and heal (Govindaraj et al., 2016). Asanas like Supta and Hasta padangusthasana keep achilles and hamstrings elastic (Luo & Xu, 2023). Padmasana and Virasana protect knees (Kohli et al., 2019). Sports endurance improves with pranayama (Mohanty et al., 2019).

### **Importance for netball**

Netball demands powerful legs to move rapidly. Players need strength and flexibility. Defensively, passing and shooting demand upper body strength, balance, and coordination (Cowen & Adams, 2005). Netball includes bumping and jostling yet is non-contact. Risk-stepping, shifting, and rapid turning are game rules. Therefore, injuries are likely. Netball injuries include ankle, muscular, finger, and knee sprains (Joseph et al., 2019). Tree position has been shown to improve ankle strength and balance (Solakoğlu et al., 2021). Uktasana prevents knee sprains. Support strengthens the knee, hamstrings, quadriceps, abdominals, and lower body (Zhu et al., 2021). Ekapadasana improves balance and coordination, and Pranayama helps players last longer (Tekur et al., 2012).

## **II. CONCLUSION**

The study's primary conclusions suggest that yoga may enhance a number of health-related outcome measures, such as psychological, physiological, physiological, and biochemical advantages. The premise that yoga significantly affects performance in a variety of sports, as well as its side effects and people in general, is supported by this review. Moreover, yoga may be very helpful in fostering the attention, physical fitness, and mental control that improve athletic performance. Yoga is a great way to be fit for life in general and for all sports.

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