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## Concept of Sports Injuries and Their Management - An Ayurveda Perspective



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**D Dinesh Goud\*<sup>1</sup>, Ramesh Killedar<sup>2</sup>, Pradeep.S. Shindhe<sup>3</sup>**

*1.Final year P.G Scholar, Department of Shalya Tantra, KAHER'S Shri B.M Kankanawadi Ayurved Mahavidyalaya, Shahapur, Belagavi, Karnataka. India.*

*2.Assistant Professor, Department of Shalya Tantra, KAHER'S Shri B.M Kankanawadi Ayurved Mahavidyalaya, Shahapur, Belagavi, Karnataka. India.*

*3.Professor & H.O.D, Department of Shalya Tantra, KAHER'S Shri B.M Kankanawadi Ayurved Mahavidyalaya, Shahapur, Belagavi, Karnataka. India.*

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### ABSTRACT

Sports persons are prone to various kinds of injuries due to improper training, poor awareness, improper techniques, Poor techniques. Sports medicine is a branch which deals with the prevention, diagnosis, treatment of the persons. Ayurveda is the science of life has various concepts like *Bhagna*, *Sandhimukta*, *Sadyovrana*, *Marma-abhighata* with its prevention and treatment in the classical texts of *Susruta Samhita*, *Charaka Samhita*, *Ashtanga Hrudaya*. All these concepts can be effectively co-related with sports injuries and helps in developing sports medicine in the field of ayurveda.



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## INTRODUCTION:

Sports medicine and exercise medicine are interdisciplinary subspecialties of medicine that deal with the general care of amateur and professional athletes of all levels<sup>1</sup>. Sports medicine is an emerging topic in Ayurveda that focuses with maintaining excellent physical and mental health in athletes. Sprains, strains, shin splints, tendonitis, fractures, and dislocations are all common ailments among athletes<sup>2</sup>...Ayurveda the traditional science of healing not only given importance to curative approaches but also offers preventive aspects<sup>22</sup>. *Acharya Sushruta* has explained *Bhagnachikitsa*, *sandhimuktachikitsa*, *Vranachikitsa*, *marma abhighata*<sup>11, 12</sup>. Therefore *Ayurveda* can effectively co-relate with modern era of sports injuries.

### Concept of Sports injuries in modern medicine:

Sports injuries are injuries that occur in athletic activities or exercising. They can result from accidents, poor training technique in practice, inadequate equipment, and overuse of a particular body part.

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Sports injuries are described as any type of injury, discomfort, or bodily damage that happens as a result of sport, exercise, or physical activity<sup>3</sup>. Common causes of sports injury is due to Poor training practices, improper equipment, accidents, and Poor awareness and safety measures<sup>3</sup>. The average injury rate per 1000 hours was 2.64. Football had the highest percentage (7.21). Lumbar muscle strains (12.24 percent), ankle sprains (11.98 percent), and bone fractures were the most common injuries (9.31 percent). The most common locations for injuries were the ankles (36.12 percent), knees (19.32 percent), and shoulders (6.47 percent)<sup>4</sup>. Sports injuries can be divided into two, Acute and Chronic<sup>5</sup>. Acute injuries mainly occur due to over stretching and fall, during sports activities<sup>5</sup>. Bruises, abrasions, lacerations, sprains, strains, fractures, and dislocations are the most common injuries<sup>5</sup>. Chronic injuries occur due to continue straining and delaying in treating acute injuries. They are Tendinitis, Stress fractures, shin splints<sup>5</sup>.

**Management:** In sports athletes physical & mental fitness plays a major role in better outcome of the game<sup>6</sup>. In case of an injured athlete, needs treatment specific and also an

overall care, so that he can return to the play<sup>6</sup>. Treatment principles of sports athletes broadly divided into curative and preventive management<sup>6</sup>. Among the curative approach surgical management also place an important role in acute sports injuries. Most of the sports injuries are musculo-skeletal injuries, these can be treated conservatively with RICE protocol, anti-inflammatory drugs, analgesics, corticosteroids etc., except complete tears and displaced fractures<sup>7,8</sup>. In case of complete tears and displaced fractures, surgical procedures like open reduction, internal fixation and tendon, muscle repair etc., can be done<sup>8</sup>. To prevent injuries education programs specific to the type of the sports and training, warm up, screening, protective equipment, training, and rehabilitation are employed for awareness and to reduce the risk of injuries<sup>6</sup>.

### Concept of Sports medicine in Ayurveda:

Ayurveda as a sports medicine is relatively new concept. Although ancient India relied upon this system to treat and maintain the well-being of Battle field warriors<sup>9</sup>. The traditional texts of Ayurveda inherently proposed various aspects that can be co-related with sports medicine or sports injury. *Acharyas* like *Sushruta* and *Vagbhata* has described concepts of *Bhagna*, *Sandhi Mukta*, *Vrana(sadyovrana)*, *Marma abhigata*<sup>10,11</sup>. These can be applied in various sports injuries and can attain overall improvement of a sports athlete. In *Bhagnachikitsa Adhyaya of Sushruta Samhita*-acharya *Susruta* has explained- a) *Sandhimukta* b) *Kanda bhagna*. In *vrnachikitsa Adhyaya* various types of wounds like *chinna*, *bhinna*, *viddha*, *kshata*, *picchita* has been explained<sup>11</sup>. *Marma-abhigata*- Based on effect of injury *marmas* are of 5 types. In these *rujakara* and *vaikalya kara* can be co-related with sports injuries<sup>12</sup>. Because in these types of *marmas* there will be severe pain and structural deformity is present<sup>12</sup>. All these various concepts explained in authentic texts of ayurveda can be co-related with sports injuries with its signs and symptoms and can be treated effectively with different treatment approaches, this helps to develop a new system of medicine in the field of ayurveda<sup>10, 11, 12</sup>.

### Chikitsa:

Acute Injuries: In acute stage *Svasthanasthapana* followed by *kushabandhana*, *lepana*, *parisheka*- In case of fractures, dislocations. *Marmaabhigatachikitsa*- *Manjishtadilepa* application, *murivennataila*, *marmanigulika*, *bhadrakadighrita*, *bala arishta*<sup>13,14,15,16,17,18</sup>.

Chronic injuries: Athletes with chronic injuries require long-term treatment. So, according to the condition of the disease first purification therapies are employed followed by *shamanaushadies*. Purificatory therapies like *Snehana*, *Swedana*, *Basti* etc., and *Anu Shashtra karma- Agnikarma, Rakta-mokshana* can be practiced<sup>19,20</sup>.

Preventive: In prevention of injuries the athletes should be guided and provided awareness on probable injuries encounters. Selection of appropriate athletes to the specific sports can be done through *Dasha vidhapariksha*<sup>21</sup>. Daily Practicing *Dinacharya*, *rutucharya* helps in concentration and co-ordination<sup>22</sup>.

### **Preventive:**

#### **Role of *Dasha vidhapariksha* in sports medicine<sup>21</sup>**

As modern science conducts many fitness tests such as weight, height, running, and so on, Ayurveda has ten examinations referred to as *Dasha vidhapariksha*, which will be useful in the selection of an athlete.

**A) *Prakruti*:** In the athletic world, physical fitness and performance are crucial. The human body's constitution has an impact on it. According to *Vata*, *Pitta*, and *Kapha* and their combinations, there are a total of 7 *Prakruthi*. They will remain unaltered till the person's death. *Prakruthi* is developed during conception, and it has been observed that a *vataprakruthi* person can be a better athlete than a *kaphaprakruthi* person based on observation. A chess player, for example, should be a *kapha* dominating individual.

**B) *Vikruthi*:** Based on *dosh-dushya*, *prakruti*, *desh*, *bala*, and *kala*. Modern science is comparable to *vikruthipariksha* in that they study disease first, then patients, and finally disease management.

**C) *Sara*:** Our body has seven *dhatus*. *Sara* refers to the maximum purity of a certain *dhatus*. *Tvaksara*, *Raktasara*, *Mamsasara*, *Medosara*, *Asthisara*, *Majjasara*, *Sukrasara*, *Satwasara*, and *Ojosara*. Individuals from *Asthisara* and *Majjasara* have the potential to be the best athletes.

**D) *Samhananam*:** A compact body has symmetrical and well-grown bone, well-developed joints, and muscles. It decides a person's strength. Compactness is important in activities like weight lifting, running.

**E) *Pramana*:** *Pramana* is a Sanskrit term that signifies measuring. The quality and strength of a person may be determined by measuring their body. It depicts a person's life. To be a great athlete, one must have a particular body proportion that allows them to have a high mechanical advantage and hence an advantage over their competitors.

**F) *Satmya*:** *Satmya* is a term that refers to a person's natural ability to resist adversity. This is linked to the components (*Prakruthi*). There are four varieties of *satmya*, of which *Charaka's Oka satmya* and *Susrutha's Vyayamasatmya* may be discussed in particular here. *Oka satmya* refers to a person's capacity to adapt to a certain activity. It is based on everyday activity, and repetition of activity improves the body's capacity.

**G) *Satwam*:** *Satwam* is a Sanskrit word that means "mind." To be a good athlete, you need not only a strong body but also a sharp mind. The *Satwam* is divided into three types based on its strength: *Pravaram* (superior), *Madhyamam* (moderate), and *Avaram* (Inferior).

**H) *Aahara Shakti*:** It depends on quantity of individual capacity to intake of food and his digestive capacity. The athlete needs stamina and strength in the sports field to withstand for duration in sports like cricket, football etc.,

**I) *Vyayama Shakti*:** It refers to the capacity of an individual. Athletes need an all-round development of health, physically, and psychologically. Ayurveda is the science has given importance to both physical and psychological health. By practicing *Yoga & Pranayama* helps in all-round development of an athlete and can effectively concentrate on sports.

**J) *Vaya*:** It refers to the age. Young athletes have good strength and stamina as the age increases the body starts to degenerate and hence strength decreases.

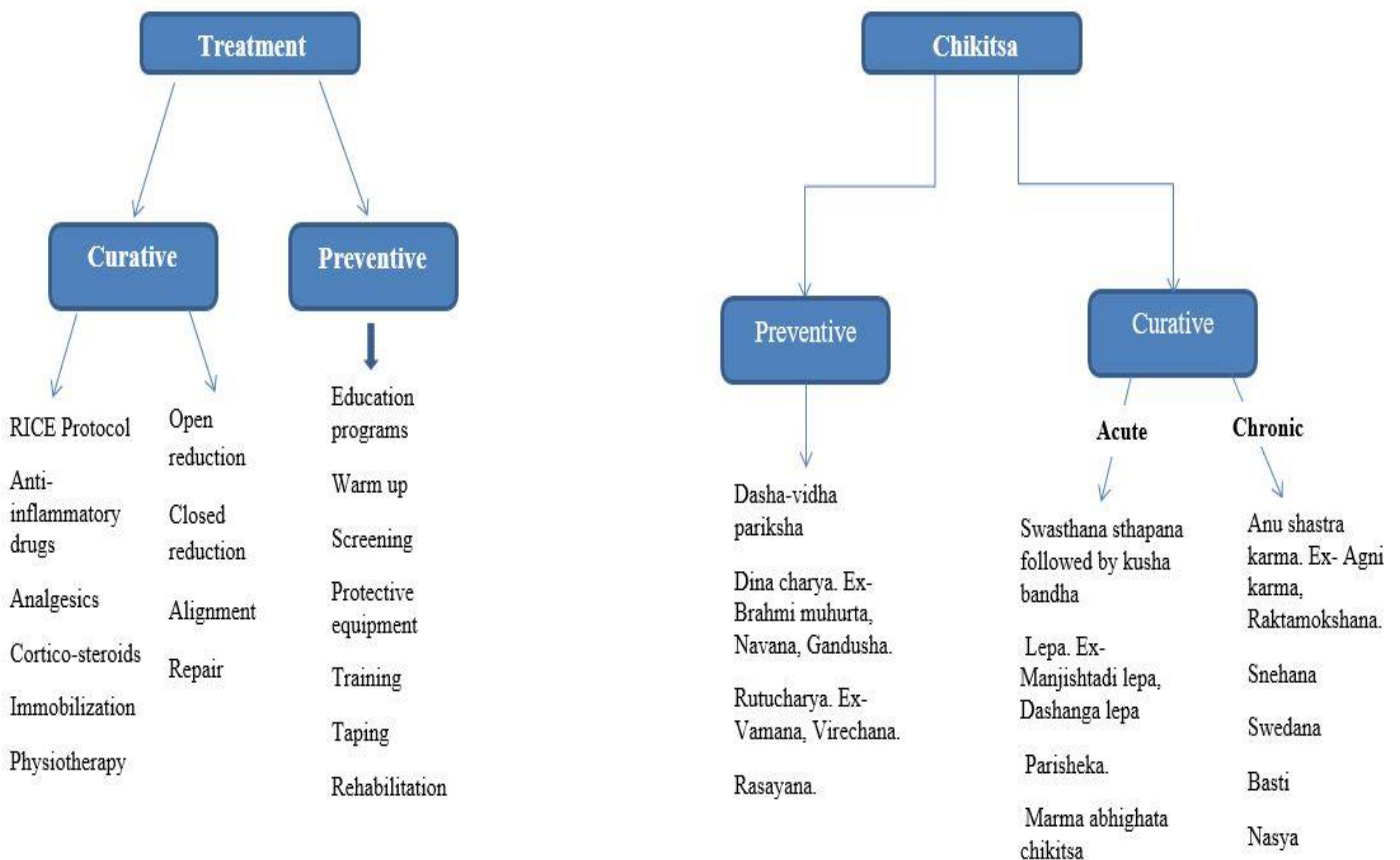
**Role of *dina-charya*:** Ayurveda has been explained daily regimens beginning with the *Brahmi muhurta* to *nidra* and also routine activities to prevent diseases and also to maintain good health. Daily regimens like *Brahmi muhurta*, *anjana*, *navana*, *gandusha*, *abhyanga*, *vyayama*, *udvartana* can be adopted to the sports athletes to maintain physique and to improve the concentration & co-ordination<sup>22</sup>.

**Role of *rutucharya*:** Seasonal internal cleansing therapies like *Vamana*, *virechana*, *Basti*, *Nasya* etc., helps to eliminate the toxins from the body and helps to maintain health and also increases the endurance of the sports person<sup>22</sup>.

**Role of *rasayana* therapy:** *Rasayana* or rejuvenation therapy is one of the eight major clinical disciplines of Ayurveda, which plays a pivoted role in dealing the process of ageing. By *Rasayan* therapy an individual will get longevity of lifespan, memory power, intelligence, health, youth, lustre, and complexion, and good voice, and stronger sensory and motor organ<sup>23</sup>.

**Commonly practiced medications:** Internal medications-*Lakshadiguggulu*, *Yogarajaguggulu*, *Vatavindhvasaka rasa*, *Panchatiktaguggulu*, *Balaarishta*, *Marmani gulika*<sup>24, 25,26,27,28</sup>.

External medications: *Manjishtadilepa*, *Dashanga lepa*<sup>29, 30</sup>.



## DISCUSSION:

Ayurveda the science of life the has given importance to the both prevention of diseases and also curative approach. The various disciplines of Ayurveda like *Sushruta*, *charaka*, *Vagbhata* have developed and focused on specific fields like surgery, internal medicine, prevention medicine and toxicology<sup>10,11,22</sup>. All the various postulated theories and diseases explained in the authentic texts are the essence to develop a new branch of

Ayurveda<sup>11,12,22</sup>. Even though there is no direct reference found in Ayurveda on sports injuries but considering *purvarupa*, *rupa*, *lakshanas* of the diseases can be effectively co-related with sports injuries<sup>10</sup>. The treatment modalities explained by *acharyas* can be modified and helps in treating the sports injuries<sup>10,11,12</sup>. By these approaches, Ayurveda can contribute to the field of sports medicine and helps in the development of a new branch of medicine.

## CONCLUSION:

Classification of sports injuries and its Clinical features are similar off to the injuries explained by *acharyas*. Ayurveda can be effectively co-related with modern sports injuries and can be treated with the traditional approach. These approaches gives the scope of development of sports medicine in ayurveda.

## Conflicts of interest

There are no conflicts of interest.

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