

Role of Ayurveda in sports medicine

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INTRODUCTION

The term *Ayurveda* (science of life) combines two Sanskrit words *Ayu* which means life and *Veda* which means knowledge or science, comes from the Vedic civilization of India, is considered the ancient and most comprehensive health system in the world. Although practiced for thousands of years in India, Ayurveda's valuable approaches and therapies have been forgotten through its long history. The principles of Ayurveda are cherished in three major textbooks of Ayurveda called the "*Brihat Trayee*" (great three) viz. *Susruta Samhita*, *Charaka Samhita* and *Ashtanga Hridaya* which form the basis for the science of Ayurveda^(1,2,3). Although there had been many innovations and additions to the practice of *Ayurveda* subsequently, these texts remain the main stay of Ayurvedic practice even today.

Sports medicine has always been difficult to define because it is not a single specialty, but an area that involves health care professional from a wide variety of disciplines. Its function is not only curative and rehabilitative, but also preventive, which may actually be the most important one of all.

Despite this wide scope, there has been a tendency for many to assume that sport-related problems are by default musculoskeletal and that sports medicine is an orthopedic specialty. There is much more to sports medicine than just musculoskeletal diagnosis and treatment. Illness or injury in sport can be caused by many factors – from environmental to physiological and psychological. Consequently, sports medicine can incorporate a range of specialties, including cardiology, pulmonology, orthopedic surgery, psychiatry, exercise physiology, biomechanics, and traumatology.

DISCUSSION:

Ayurveda and Sports medicine:

Sports medicine, as a separate medical specialty has a fairly recent origin and it is quite relevant to ask how a medical system, that is more than five thousand years old, can make any contribution in a field like sports medicine which is not more than a few decades old.

Ayurveda interpretation of sports:

Physical activity keeps our body fit and active, builds muscles, and strengthens all internal organs. Playing sport is

healthy, but overdoing it can be more destructive for your health, than just suffering a strain or sprain.

Certainly, sport should be fun, both during and after exercise. The long-term effects of overdoing sport are especially unhealthy: Your body loses its balance and its resources are depleted.

Healthy sport from the Ayurveda point of view:

Stress Free:

Too much exertion in sport can be just as unhealthy as too little. But how do you find the right balance for yourself? The Ayurveda rule of thumb is: When you start to sweat and breathe heavily, such that you no longer breathe through the nose, but through the mouth, you should slow down or stop. In this way, you use no more than 50 % of your capacity. Such a fitness program is balancing, and ideal for your health. This differs from current medical opinion, which considers the purpose of sport is mainly to build muscles and strengthen circulation, whereas Ayurveda considers sport much more holistically. Sports should help to maintain inner balance throughout the body, to strengthen all organs, and to make the immune system more strong. In the right amount, sport increases well-being and reduce the stress. This makes sport more fun and is much healthier than overloading the body to achieve short-lived joy. *Charak Samhita*, the classical Ayurveda textbook, says: "He who undertakes sport in excess loses his energies in time, as a lion trying to compete with an elephant." After a healthy training session, sport normally makes you feel better and more energetic than before. Exhaustion, according to Ayurveda, is a sign of unhealthy sport.

Regularity:

It is better to exercise for a few minutes, to half an hour daily, to keep fit, rather than exhaust yourself for two hours once or twice a week. The body benefits more from regular exercise and, according to the classical Ayurveda texts, over time it becomes strong, energetic, flexible, and stamina increases. Heart and internal organs are strengthened, the digestive power is stimulated, and the mind becomes balanced and calm.

Precise Guidelines for sports from angle of Ayurveda^(1,2,3):

According to Ayurveda before application of medicine for sports a person should be judged for the following

- *Vaya* (age)
- *Prakriti* (constitution)
- *Vikriti* (morbidity)

- *Sara* (constitution of the *dhatus*)
- *Samhananam* (compactness)
- *Praman* (measurement),
- *Satmya*(suitability)
- *Sattwa* (psyche)

1. Vaya(age): Those under 25 years of age should participate regularly in sport. This age group can easily make a judgement of how much exercise is good for them on the other hand they should not be forced to achieve target goals.

Between 25 and 40, the fitness program can be somewhat more moderate, depending on one's constitutional type (point 2).

People over 40 should, with increasing age, undertake more moderate but regular sports (about 15 to 30 min per day).

2. *Prakruti*(body constitution):

According to Ayurveda a person can have the body constitution according to the three *doshas* (*Vata*, *Pitta* *Kapha*) or their combinations. There can be ten such combinations. This constitution is formed at the time of fertilization and remains unchanged till death.

i) For a person with *Vata* (lean) type of body constitution, slow and light sports, which keep the body moving continuously for 15 - 20 minutes, are the most appropriate. The type of sport which they should take up include walking, swimming, dancing and cycling.

The *Vata* types should be particularly careful not to overdo sports, and in winter should possibly prefer indoor sports, because they are not so well suited to the cold.

ii) A person with *Pitta* (with moderate to vigorous physique) type of body constitution have good thermo stasis, whose heat production is balanced, can tolerate more exercise. The type of sports which they can take up are swimming and surfing, all sports that are practiced in the open air such as, skiing, climbing, cycling, light jogging and all ball and team sports.

iii) A person with *Kapha* (overweight) types, may often not be very motivated, but, they will especially benefit from regular exercise. They may make their sport sessions a little more intense and longer. Recommended sports include jogging, long distance running and rowing.

3) ***Sara*(constitution of the *dhatus*)**- there are seven *dhatus* (*sara*) in our body. Among these the *asthisara* and *majjasara* individuals can be a better sports person who can perform well in outdoor events.

Charactersitics of *Asthisara*

People exhibiting this *sara* have strong bones, prominent joints at heels, ankles, elbows, shoulders, chin, thick nails and prominent teeth. They possess high energy and are addicted to actions. They are capable of bearing pain and fatigue. Their body will be slim but strong and firm. They are best suitable for hard physical activities, sports and war.

Charactersitics of *Majjasara*

It is related to *majjadhatu*. *Majjasara* are small built and having good strength, strong bones and joints. They are oily in complexion and are very responsive. They are blessed with good physical stamina, power, knowledge, and demand dignity and respect.

5) *Samhananam* (*Compactness*):

A compact body is characterized by symmetrical and healthy grown bone, well-knit joints and well bound muscles. Individual with compact body is very strong and vice versa. Compactness of the body can be taken as an indication for athletic ability Compactness of a particular part of the body or group of muscle will be corresponding to their particular sport event. Compactness has significance in events such as weight lifting sprinting etc. Here hypertrophy of a certain group muscle is unavoidable.

6) *Praman*(*measurement*):

The quality and strength of a person can be determined by measuring the height length and breadth in comparison with the other organs. To be an outstanding athlete one should possess unique proportion of the body which enables high mechanical advantage .

7) *Satmya*(*suitability*)⁽⁴⁾

Satmya is defined as inbuilt *ability* to withstand. This goes hand in hand with constituents (*Prakruthi*). There are four types of *satmya* out of which *Okasatmya* or *Vyayamasatmya* of Charaka and *Susrutha* respectively can be dealt in detail here. *Oka satmya* means the adaptability of a person to a particular activity. It depends upon the daily activity and repetition of an activity increases the ability of the body to continue the same.

8) *Satwam*(*psyche*):

Satwam is mind. To be a good athlete one should not only have a strong body but a capable mind. Depending upon the strength the mind is of three types

Pravaram (Superior),
Madhyamam (Mediocre)
Avaram (Inferior)

Decree of Ayurveda for an athlete:

Practice makes a man perfect. If one has to perform he has to undergo rigorous practices.

A concept that is quite unique to Ayurveda is the concept of daily and seasonal regimen mentioned very elaborately to promote a healthy living. This regimen is quite exhaustive, giving very fine details like:

1. When a person should get up in the morning.
2. The necessary activities to be done in a day.
3. The amount of exercise he should perform.
4. The type of food he should consume in a particular season.
5. Seasonal purificatory therapies to be performed to detoxify the body periodically.
6. To avoid incompatible food stuffs
7. Sleep
8. Celibacy

Ayurvedic recipe for sports people:

Three primary factors that influence athletic performance are genetic endowment, state of training and nutrition. Even though good diet cannot guarantee success, poor diet can certainly undermine training. Ayurveda gives

comprehensive description of food substances that can increase muscle mass and physical competence. Food should be taken according to eight factors such as nature of food, processing of food, combination, quantity, place, time, dietetic rules, constitution. *Sarvagraha and parigraha* are two nomenclatures used for total quantity of food and quantity of individual items of food respectively. The list of wholesome items in food would be red *Sali* rice among cereals, green gram among pulses, rock salt among salts, *Jeevanti* among herbs, meat of deer among *animal* meats, meat of quail among birds, meat of *Iguana* among the animals living in holes, *Rohita* among fish, Amalaka (Fruits) barley, water, cows milk among milk, ghee among clarified animal fats, sesame oil among vegetable oils and honey are prescribed

Vyayamasakthi:

It is the capacity to perform physical exercise. The physical fitness are influenced by many factors such as age, *sara*, *ahara*, mental stability so on so forth

The challenges faced by a modern sports person are not just musculo-skeletal but it also include physical, physiological psychological social, economical, environmental stresses. Ayurveda aims at the preventive, promotive, curative corrective and rehabilitative aspects of a sportsman.

The approach in Ayurveda is holistic, where in it combines treatment modalities with yoga, *pranayama* etc to have a profound impact on not just the physical problems but the much more important psyche of the sports person. It can effectively work towards stress relieving and in developing concentration.

Ayurveda has mentioned certain management protocol for a person who has been debilitated due to a disease, these could be used effectively used in sportspersons who are recovering from an injury and could do well to hasten

For all body types, warm up time is important.

The Right Time for Sport:

According to Ayurveda right time for the sport depends on the biological rhythm, certain times are either more or less suitable for your personal exercise program.

1. Time : Between 6 and 10 a.m. is the best time for your fitness programme. Evening is the ideal time to relax, rest and renew.

2. Season: In summer you should not "work out" in the midday heat. Generally, it is better to do more sport in autumn, winter and spring than in summer.

You should avoid sports...

If you feel exhausted

- In case of illness
- When you're hungry or thirsty
- Just before or after eating. After eating wait at least 2-3 hours. There is, however, nothing wrong with an after-dinner digestive walk.
- During menstruation, pregnancy and for some time after childbirth, women should avoid vigorous sport but should certainly carry on yoga during

gestational period and postnatal exercises should also be done under supervision of expert.

Food and drinks:

Freshly prepared food and beverages are good for fitness. Ayurveda puts less emphasis on calorie counting and the question of vitamins and carbohydrates, than on recognizing your own individual needs. Lunch should be your main meal, breakfast and dinner can be lighter. Regular meal times are pleasant for the body and allow it to digest food perfectly.

The Secret of rasayanas:

Ayurveda describes a variety of herbal and mineral mixtures, called *rasayanas*. They contain not only highly concentrated nutrients, but also develop a unique effect on the mind and body by virtue of their specific compilation. Each of the different ingredients complement and reinforce each other synergistically, and can therefore be optimally absorbed by the body.

Amla juice has been designated as sport *rasayana* for physically active person. It has holistically nourishing and balancing as well as a natural anabolic (muscle building) effect. It supports the immune system in a holistic manner, and also has been proven to reduce cell-damaging substances known as free radicals. Free radicals are highly destructive molecular fragments that are increasingly produced at high levels of exertion

Yoga-Asana:

Yoga -asana are sequentially coordinated postures that will not only increase flexibility, but also improve the mind-body coordination. They should, however, only be learned from an skilled teacher.

Relaxation = Regeneration:

After exercise, a sufficient regeneration period is as important as the sport itself. During this time, the body recovers and regains energy. A gentle massage with oils relaxes the stressed limbs and joints. It also helps to reduce the build up of lactic acid, lactate, which produces delayed onset muscle soreness (DOMS). Regular mental relaxation is important for continued success and inner balance. Meditation is an ancient Vedic consciousness technique that is easy to learn and practice. More than several hundred scientific studies have clearly proven its unique effectiveness, as compared to other methods of relaxation.

Top Level Sport:

The professional athletes, need to train more in order to achieve top performance. They can stick to appropriate food supplements to reduce the damage caused by free radicals followed by daily regeneration phases, and twice a year take a *Panchakarma* course (ayurvedic purification therapy).

It is found in literature that professionals taking these measures have enhanced their performance and improve their health⁽⁵⁾.

Summary:

1. Remember the 50% load rule.
2. Regularity is the key to success.
3. Exercise between 6 -10 am in the morning.
4. Eat a healthy diet to support your mind and body.

5. After exercise, the relaxation and regeneration phase is essential.
6. Relax regularly by practising meditation.
7. Practice yoga asanas.
8. Natural performance enhancing agents (Bio-steroids)
9. One of the most exciting prospect that needs immediate exploration is the drugs (of pure herbal origin) mentioned for enhancing the physical competency of a person. There were apparently widely used in ancient times by warriors to enhance their performance during war and from getting tired easily. Among the 50 *MahakashayaBrimhaneeyadasaimani*(Muscle builder), *JeevaneeyaDasaimani* (Vitaliser) *BalakaraDasaimani*(Promotes strength) and *Sramaharadasaimani* (Promotes cheer)drugs are said to have components that can enhance the performance level. These drugs are non-steroidal and probably act by increasing the secretion of the biological hormones and enzymes. Here it is significant to note that research in the field of micro-biology has revealed a group of naturally occurring substances many plants classified as biological-steroids that have actions very similar to steroids without their dangerous side-effects. Here are few examples

*Draksha ,Dadima,Parooshaka,Iksu,Yava,Shastika,
Phalgu,Pindakharjura,Priyala,Barbara
Jeevak,Rishabhaka,Mahameda,Kakoli,
Ksheerakakoli,Mudgaparna,
Mashaparn,Jeevanti,Madhuuka*

CONCLUSION

Though ayurveda had been practiced in India since time immemorial, especially for the warriors, it was recently that sports ayurveda got some recognition in the sports scenario. This relatively new extension of Ayurveda, which through inbuilt of a person focuses on the health aspects of sports personalities, including stamina and flexibility of the body, more and more people including sports personalities have

showed interest in it. Ayurveda claims no use of steroids and doping. It is highly effective in treating soft tissue injuries like ligament, tendon, meniscus without any surgical intervention. With herbal treatment the scar formation is less and tissue regeneration is speedy which enables the injured sports personalities to come back to sports field rather quickly.

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