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## Sports injuries: A rehabilitation and prevention

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### Abstract

Sports Medicine involves not only traditional treatment; it is also a guide and reflection on the state of play according to sporting rules and breaches of them. Injuries that result from athletics predominantly involve the muscular and skeletal system. Sprains, strains, contusion of joints and muscle, and fractures and dislocations of bones and joints make up the bulk of these injuries. Head, face, neck injuries and internal injuries of thorax and abdomen statistically play a minor role, but they can be quite serious and even fatal. Abrasions and lacerations of the skin and bruises of the subcutaneous tissue are so common place that they represent red and then black and blue status badges of body contact. These injuries present no great difficulty in treatment unless they become infected.

**Keywords:** Sports injuries, muscle, injuries, traditional treatment

### Introduction

The physical- education personnel can make a major contribution to the welfare of the athlete in the area of rehabilitation. The quality of rehabilitation programme determines what level of athletics participation will be possible in the future and also influences the frequency of injury. As Dr. Freel Allman has said- "The goal of treatment must be restoration of function to the shortest possible time". The rehabilitation should begin at the same time as treatment of the injured part, so that it may result an early return to the activity.

### Rehabilitation Process

It is not within the scope of this paper to discuss in detail, the diagnosis and treatment of all the clinical condition that result from athletics injuries. Only some basic principles can be noted for some more common injuries. The design of a rehabilitation programme has been largely based on empirical observation combined with current trends of tendencies in weight training. It is essential to include the following information with the database before making, decisions as to the appropriateness of a given exercise:-

1. What are the requirements of a given sports in which athlete participate?
2. How long each session should last and the number of times per week that each exercises should be performed?
3. What are the positions of risk that need to be avoided?
4. What is the level of participation and motivation of the athlete?
5. What is the biomechanical, physiological and psychological status of athlete?

### Conservative Treatment

The initial treatment can be conservative if the exact severity of the injury is in question. The conservative management includes the following points:

- Total rest of the involve part,
- Application of ice for pain and inflammation,
- Use of other modalities like RICE and sometime worn during activity,
- Decrease in activities such as cycling, downhill running, squatting, sitting with knee at 90 degree of flexion,
- In-shoes orthotic devices (excessive pronation of the feet)
- Increase in flexibility,
- Improvement of strength and power of the muscle,

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- Use of braces,
- Use of anti-inflammatory medicines, and cortisone injection to reduce pain and tenderness.

### **Surgical Option**

Surgery is reserved for the exceptionally unresponsive and difficult case and should not be undertaken until all conservative measures have been exhausted. As example, removal of the medical meniscus, lateral meniscus, releasing impingement and repairing of any tear and reconstruction of anterior cruciate ligament.

### **Postoperative rehabilitation, immobilisation**

While the injured part is immobilized the athlete can still perform the following exercises under supervision of coach:

1. Isometric contraction of the muscle should be performed.
2. Muscle stimulation can also frequently be used at this stage.
3. Emphasis should be on cardiovascular fitness.
4. Exercising the opposite limb may evoke a crossover reaction and muscle of the opposite limb.

When the immobilization/ cast is removed, a careful controlled rehabilitation programme should be carried out following an adequate period of about 4 to 8 weeks of cast immobilization. The athlete should be started on gentle range of motion (ROM) together with electrical stimulation of an injured part. Ice massage can also be used.

Stretching is an integral part of a full rehabilitation and prevention programme. Stretching helps to increase the flexibility of the joints and it is generally agreed that flexibility is an important component for optimum performance. Stretching can focus primarily on muscle, the capsule and ligament or both. Method of stretching varied and include (A) Static, (B) ballistic (C) proprioceptive neuromuscular facilitation patterns (PNP) Though there are many other approaches available, and most of people agree that the safest approach is a modified PNP- technique that employs a minimum contraction in a stretched position for 8 to 10 seconds followed by a stretch into new position. Single movement pattern such as flexion/extension and internal/external rotation are commonly used techniques. An advantage of PNP is the use of spiral or diagonal pattern. Which more realistically intimate function pattern. The diagonal movement pattern, used often in full ROM, PNP is comprised of three components. Either flexion or extension, internal rotation or external rotation, and abduction or adduction are combined with a pattern for a particular joint. Other related joints may also have associated pattern that accompany a selected pattern.

### **Prevention of injury**

Prevention is better than cure” nowhere holds better than in case of sporting injuries. Many of them are unnecessary and the harm that they do, not only in terms of loss of earning capacity but 6 also in terms of wasted effort and frustration is quite disproportionate to their severity.

### **Fitness**

An appropriate level of fitness is in itself the most valuable factor in the prevention of injury. Not for nothing is unaccustomed exercise said to be “occasionally fatal, frequently injurious and always painful”. Strength, speed and endurance to say nothing of flexibility are all in their way safeguard against injury.

### **Skill**

Skill is how ever the factor of paramount importance in safety. It involve not only the physical control to make the body what the mind will, but also the mental ability to realize the risk and know how to offset it as well as be able physically to take the necessary actions. At a purely physical level the player’s object is to develop effective and efficient movement patterns to the level of conditioned reflexes.

### **Self control**

The most important aspect of injury – prevention by control is self-control. If a person loses temper and thus his self-control, he is liable to injure not only himself but others. Self-control is the essence of self-discipline and without it no one can aspire to any degree of fitness.

### **Proper clothing and equipments**

In many sports and games the participants may or indeed must wear some form of protective clothing or use of protective equipment. Such clothing or equipment may to protect themselves or to protect other with whom they come into contact. Although there are many forms of protective clothing available it is remarkable that so few are subject to minimum standard of safety.

### **Principal of prevention of injury**

The following principles if conscientiously applied must inevitable result in a decrease in the incidence of sports injury.

1. Be physically fit.
2. Obey the rules of Sports and Games.
3. Wear the right sort of apparel.

### **Conclusion**

The need of hour is an integrated sports management programme and it primary thrust in pursuit of excellence. The sports management system should be in such a way that the research bindings of sports scientists of various areas should be known to the coach. During training the Coach should apply these knowledge in appropriate time. There should be proper understanding among sports scientists and coaches. Some of us may think that it is very difficult to follow this scheme in Indian Conditions. If we think of medals in International tournaments, it is a must to follows systematic training. ‘Rome was not built in a day’. Day by day and step by step such a coaching system can be establishing.

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