



SPORTS INJURIES AND REHABILITATION

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Abstract

In the modern era, rehabilitation after sports injury has become a domain for specialists, and its Evolution has necessarily brought together the sports physiotherapist, the sports physician, and the Orthopaedic surgeon. The changing profile of sports related injury, as well as limited availability of facilities for rehabilitation in many areas of India, is a matter of concern. Elite sportspersons have some protection, but the average athlete is often left to fend for himself. Key factors in successful sports injury rehabilitation protocols are the application of modern rehabilitation protocols under appropriate supervision, appropriate and well timed surgical interventions, and judicious and need based use of pharmaceutical agents. Modern rehabilitation protocols emphasize teamwork and proper rehabilitation planning, and the rehabilitation team has to be lead by a trained sports physiotherapist, with an understanding of the protocols and interventions require at various stages. Injury specific rehabilitation protocols are being practiced worldwide but need to be introduced according to the nature of the sport as well as available facilities. Even in India, sports physicians are increasingly joining specialist rehabilitation teams, and they can help with medication, nutritional supplements, and specialized tests that could improve injury understanding. Inputs from surgeons are mandatory if surgical interventions have been performed. What is often missing in the underdeveloped world is psychological support and a clear understanding by the athlete of his/her rehabilitation protocols. World over, the primary aims are safe return to sports and minimizing reinjure on return to sport; this involves rehabilitation in stages, and current methodology clearly demarcates acute and chronic phases of injury. Close coordination with trainers and coaches is mandatory, and all need to understand that the reconditioning phase is crucial; skill assessment before progression has now become a specialized domain and needs to be introduced at



Keywords: Conditioning, physiotherapy, return to sports, sports injury, sports rehabilitation

Introduction

The ever growing popularity of sports worldwide has made the “sports industry” extremely competitive and financially lucrative for athletes, with many striving for elite professionalism. This has consequently intensified the physical and emotional burden of



sports, increased the training and practice regimens required, and exposed those involved in this quest to a higher risk of injury. In modern competitive sport, injured athletes are under pressure to return to competition as early as possible, which is often a demand for both the sportsperson and the team management. Athletes also stand a chance of losing their place in the team due to the highly competitive scenario and naturally come under higher pressures to return. Thus, compared to traditional rehabilitation after injury, sports injuries rehabilitation requires more care, a highly structured and sports-specific approach, which should prepare both the athlete and the injured tissue for the following physical and psychological demands at the highest level of sport. The growing popularity of the recently incepted hockey, football, and kabaddi leagues in India is evidence of a growing sports culture in a country predominantly favouring cricket. These sports are fast paced, played over a short timeline, and often pose a high fatigue and injury risk to the involved athletes. Studies from around the world emphasize the relation between the demands of the sport and the risks of injury.

The Framework of Sports Injury Rehabilitation

a). The team approach and proper planning

In modern sports injury management, a team approach involving the sports physician, physiotherapist, strength and conditioning coaches, sports psychologist, nutritionist, coach, and the athlete is critical. Most importantly the rehabilitation needs to follow a bio psychosocial approach. We need an understanding of the sport and what biomechanical and physiological demands this has on the athlete. Therefore, reviewing the current literature regarding the particular sport will aid in providing the clinicians with the understanding of common types of injury, the mechanism behind them, and the current management protocols being used globally. Documentation of baseline measures is paramount to compare outcomes to a reinjure level. Baseline measures are usually undertaken during the preparticipation assessments and ideally done at the beginning of the sporting season.

b). Aims of rehabilitation and planning

The primary aim is a return to sports at a reinjure physical and emotional level and to prevent reinjure. It is important to have an end goal in mind, preferably using baseline measures and player attributes documented at preparticipation, and work backward from where you want the player to be. The key points in the rehabilitation program should be planned and charted



out. In addition to injury-specific rehabilitation, it is important to eliminate risk factors and identify why the injury happened in the first place. Another issue of note is the prevention of overall reconditioning, which has to be factored in when designing the rehabilitation protocol.

c). Restore function and performance to a reinjure level

For this, it is important to have baseline data in as many athletes possible, thus signifying the importance of routine screening of athletes and the documentation of their physical status. However, this may not be possible at all levels in most Indian sports and is not available at the amateur level. Strength and conditioning should aim to achieve power, strength, and endurance somewhat higher than what it was reinjure, as we have to factor in preventive measures for reinjure

d). Minimize risks of reinjure

Injury is the biggest risk factor for a reinjure. Once athletes are back competing, careful monitoring is required. The importance of monitoring the physical load on players returning to competition is highlighted later in the review, and further, reading on monitoring of acute-chronic workload ratio is highly recommended. Monitoring the physical workload on athletes assists the clinicians in determining the optimum transition back to sport while ensuring minimal reinjure risk

Stage Of Rehabilitation

We train a lot of athletes with the aim of getting stronger and faster for their sport and reduce the risk of picking up an injury. We also work with athletes who have long term injuries and require structured rehabilitation to return to play as quickly and safely as possible limiting the risk of re-injury. So, what are the processes we go through in rehabilitation? These stages are all dependant on the type and severity of injury as well as the demands of the sport. Rehabilitation strategies should be designed individually as no two cases are the same. In this article, we will talk about the stages of rehabilitation.

a). Regeneration

The regeneration phase of rehabilitation is the stage where, we allow the injured area to rest and recover. For muscle tears, inflammation and strains of tendons, we can use ice packs and for sprains we can use supportive braces. It is important that pain is avoided to avoid further aggravation of the injured area and allow the body to begin to repair itself. Physiotherapy will ensure that joints remain mobile and recovery can be accelerated. This process is case



specific. Some injuries can progress through this stage in a matter of days, others may be weeks or even months depending on the severity of injury i.e. acute tendinitis vs grade 2 hamstring strain vs ACL rupture.

b). Reconditioning

During the early stages of rehabilitation, we should look to isolate the injured area. This may include the use of machine weights avoiding compound exercises. Progressive load and progressive volume increases will develop the structural characteristics of the injured area and accentuate the healing process. Recovery at this stage is important and no pain should be recorded during activities. Cardiovascular activities should also be pain free. If you have been out for a prolonged period of time, begin with aerobic activities such as walking or light running gradually progressing the duration and then intensity.

During the mid stage of rehabilitation, begin to include more sport specific activities for example, passing in football or light throwing if returning from a shoulder injury in cricket. You shouldn't try and do as many repetitions of these activities as you would in full training. Gradually build up the quantity and intensity of activity over time. Don't just go into kicking a ball 50 yards down field or going into maximal fast bowling in your first sessions back in training. Begin to increase the intensity of your conditioning with sport specific change of direction and begin to increase your anaerobic conditioning i.e. high speed running. You should be able to complete some maximal bouts of activity.

c). End Stage

At the end stage of rehabilitation, you should be able to complete any task asked of you for example, hits in rugby, maximal sprints in football or boundary throws in cricket. At this stage, we are building a load tolerance to transition towards full training. We want to avoid spikes in load, continually building intensity and duration to match the demands of training. It is important to integrate technical and tactical aspects of match play at this time to adequately prepare an athlete for return to play. If a player goes straight back into full training without building his tolerance to load, the athlete will be at a high risk of re-injury due to the body not being prepared for the demands of sport.



d). Return to play

Once athletes can perform all sport specific tasks and have a tolerance to the demands of training, it is important to start to integrate players back into their squads and regular training. This can mean completing the warm up with the team, before performing a conditioning session, progressing on to a full practice. Plan ahead and explain to your player why they are doing limited practices and give a clear timeline to return to game and full practice to maintain player motivation and buy-in for each session.

When there are no physical limitations and the athlete is able to cope with the demands of training after a pre-determined amount of time, they can begin to enter competitive games. It is important to be mindful of the amount of time they are playing in relation to the load they can theoretically tolerate to minimise the risk of re-injury.

Conclusion

Rehabilitation after a sports injury is a crucial aspect to ensure full recovery, minimize time off from sports, and to prevent re-injury. Modern rehabilitation methods have surpassed traditional management protocols and are based on an active rehabilitation framework that demands equal participation from the athlete and the entire rehabilitation team. Attempts are made to ensure the earliest RTP, and even though the sports clinicians are responsible for a safe transition back to competition, it is important to remember that the athlete has the final say. The role of surgical interventions, as well as pharmaceutical requirements, is need based and beyond the scope of this manuscript, but the major work on a sportsperson after injury is done by the rehabilitation team.

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