



# Prevention and Treatment of Sports Injuries in Cricket Players

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## Mini Review

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## Abstract

Sport training is characterized by being increasingly scientific; a foundation that justifies the competitive results obtained in all sports scenarios where athletes efficiently develop their qualities and capabilities, implicit in this is the appearance of sports injuries from various causes. Cricket is the national sport in English-speaking countries and the fundamental root of baseball and sports injuries are common in this sport, although it is strictly a non-contact sport. This work is based on the injuries that occur most frequently in cricket fast bowlers and proposes therapeutic physical exercises for their treatment. Most fast bowlers in cricket suffer upper body injuries and some do not recover and have to leave the sport. In general, fast bowlers do not have the necessary guidance and some practice more than one discipline that can be very dangerous to athletic life and contribute to injuries. It has been shown that it is possible to apply therapeutic physical exercises as an effective treatment in the prevention and rehabilitation of sports injuries.

The Therapeutic Physical Culture (CFT) is a multidisciplinary science in charge of using the means of physical culture and sport, for the prophylaxis, cure and recovery of diseases. During the last decades, many rehabilitation programs and services have been developed to compensate for functional disability resulting from illness or injury, so that people can resume their activities as soon as possible, not only for physical recovery, but also Social and vocational rehabilitation are receiving increasing attention from these important services. At present, diseases of the osteomioarticular system are one of the leading causes of physical disability with a large percentage of patients, including athletes, who come to different rehabilitation departments with indications for treatment for these causes. The appearance of injuries mainly in the upper limbs, the ankle and the back, cause the premature retirement of many players from the sport, a frequent increase in these injuries has been observed during training and competitive activities because prevention is not considered as a fundamental element, as well as the little effectiveness of the rehabilitation process intended for this, being the inspiration for the realization of this research work that as a scientific problem arises How to contribute to the prevention and treatment of sports injuries that occur in players in cricket players?. It is derived from the problem raised as a general objective of the research. Propose therapeutic physical exercises for the prevention and treatment of sports injuries in cricket players and for this an analysis of the theoretical-practical and methodological conceptions that exist about the treatment of sports injuries, the current diagnosis of the treatment of sports injuries in cricket and therapeutic physical exercises are analyzed and proposed that can be used for the prevention and treatment of sports injuries that occur in cricket players.

**Keywords:** Sports Injuries; Rehabilitation; Physical Exercises; Sports Injuries

## Mini Review

The high level of effort required by sports physical activity often causes multiple traumas and injuries, more or less serious. This forces, in many cases, the temporary or permanent withdrawal of this activity. These circumstances are found both at the initiation level and in elite sport. The casuistry is different in each case, being more frequent in the grassroots sport the injuries produced by the lack of corporal and technical control of the execution, while in the high performance injuries by excess of confidence or by a high demand without a sufficient period of preparation or recovery [1-3].

Strengthening exercises help prevent injuries. Regular exercise does not increase or strengthen muscles significantly. The only way to strengthen your muscles is to exercise them against a greater resistance progressively, such as playing an increasingly intense sport, lifting increasingly greater weights, or using special strengthening machines. Rehabilitation exercises to strengthen muscles and tendons that are already healthy are usually done by lifting or pressing against resistant elements, in sets of 8 to 20 repetitions, every other day maximum [4].

### Factors Leading to Injury

**Intrinsic factors:** (elements attributable to the athlete)

- Loss of muscle strength
- Lack of flexibility
- Overloads
- Biomechanical errors
- Absence of physical form
- Size (body size)
- Execution capacity
- Play style

### Extrinsic Factors

- Defective equipment
- Other athletes
- Playing surface
- Training
- Weather

### Diagnostic Imaging

Diagnostic imaging studies should always include anteroposterior, lateral, and oblique radiographs first.

- Computerized axial tomography
- Magnetic resonance.
- Bone scan
- Electromyography.
- Bone Densitometry.

## Rehabilitative Prognosis

In healthy bone, if the damage is not excessive, it can heal, by a biological process called remodeling in which new bone is deposited to heal the damage. For this process to occur, the body must be given the appropriate treatment to be able to rejoin the sport without any problem. If the damage is excessive the remodeling process is faulty, then microscopic failures (fractures) occur [5,6].

## Treatment

The conduct to follow a patient with an injury consists of:

### 1. Conservative treatment

- General measures
- Rehabilitation treatment
- Preventive treatment

### 2. Surgical treatment

Before a sports injury, the immediate action guidelines are rest, ice, compression and elevation.

- **Rest:** it is important to rest the injured part or limb and not continue exercising it. Otherwise, the injury may worsen and the necessary recovery time may increase.
- **Ice:** the application of cold has a vasoconstrictive effect, avoiding a greater blood supply to the damaged area, which prevents bleeding, reduces if it has occurred and reduces pain and inflammation. Apply it for 15 or 20 minutes every three hours.
- **Compression:** compression bandages decrease blood flow, preventing greater inflammation in the injured area.
- **Elevation:** the elevation of the injured limb facilitates the return of blood reducing the inflammation in the area.
- **Preventive treatment**  
The most important and indispensable factor is prevention, through education so that they become aware of the possible outcome.
- **Warming** involves exercising your muscles in a relaxed way for a few minutes before intense exertion. A few minutes of exercise can raise muscle temperature up to 38°C, making the muscle more elastic, strong and resistant to injury. Active warm-up from exercise prepares muscles for intense work more effectively than passive warm-up with hot water, heat pack, ultrasound, or infrared lamp.
- **Stretching** does not prevent injury, but it can improve performance by lengthening the muscles so they can develop a greater effort. Stretching should be done after a warm-up or other exercise. Athletes can hold stretch up to 30 seconds. To avoid direct injury, athletes never stretch more than they can hold for 10 seconds.
- **Cooling** (gradually descending until exercise stops) can

prevent dizziness and syncope. In a person who exercises vigorously and stops abruptly, blood can get stuck in the dilated veins, causing dizziness and syncope. Cooling maintains increased circulation and helps remove lactic acid from the bloodstream. It does not prevent muscle pain the next day (stiffness), which is caused by injuries to the muscle fibers.

Conservative treatment is proposed that includes rehabilitative treatment and this in turn therapeutic physical exercise in order to avoid acute processes and complications of the injury, together with the fundamental aspects to take into account to carry it out from a medical point of view – pedagogical (Table 1).

### Before Starting the Work, the Following Aspects are Considered

Physical exam:	Physical exploration:	The physical agents that can be used are:
General data.	Visual inspection of posture	Magneto
Diagnosis (vital signs such as HR and T / A)	Palpation (active passive ROM and muscle strength)	Current
Pain test (location, frequency and intensity scale 1-10)	Functional diagnostics	Microwave
History of the disease	Treatment regimen	Ultrasound
		Laser
		Lumbar Traction
		Massage

**Table 1:** General Data.

#### General Objective of the Exercises

- Promote tissue regeneration.
- Reestablish joint range of motion and soft tissue extensibility.
- Reestablish joint resistance.
- Restore muscle strength.

#### The Proposed Model is Designed and Structured by Different Types of Exercises

- Diaphragmatic breathing exercises as a basic model for strengthening the respiratory muscles, good blood circulation and oxygenation of the muscles.
- Lubrication and calisthenics exercises that allow the body to prepare to start working and thus avoid secondary problems.
- Stabilization exercises for the specific work of the lumbar area avoiding further damage due to unnecessary movement or poor posture.
- Abdominal and lumbar strengthening exercises to maintain strength.
- Aerobic exercises to improve physical fitness.
- Advanced exercises to strengthen the trunk and as a prophylactic treatment.
- Slouching exercises to reduce negative effects on the lumbar spine.

- Stretching exercises to achieve a recovery of the muscles at work.

The exercises will be done symmetrically and starting from initial positions that cause unloading and a correct alignment of the spine.

- a. Supine position (lying on your back)
- b. Prone position (lying face down)
- c. Quadrupeds (four-point support)

The work sessions will have three parts: initial, main and final.

- **Initial part:** It constitutes the introductory or adaptation part to physical work, it aims to optimally prepare the players to successfully face the intermediate or main part. Its essential task is to first condition the cardiorespiratory system, as well as all the joints and muscular planes to give way to the main part.

- **Main part:** It constitutes the essential and fundamental part of the class. This is where the objectives of it are met. From the didactic and methodological point of view, exercise constitutes the main element through which essential habits, skills and abilities are developed and consolidated. From the point of view of the dosage of the load, the exercises are placed gradually according to the evolution of the fast bowler.

➤ **Final part:** It constitutes the part of the class where the player's body recovers, until you reach heart rate values that are close to normal at the beginning of the activity. From the methodological didactic point of view,

the conclusions are made and the results are evaluated, recommendations are provided to reinforce the activities carried out.

Initial part	Main intermediate part	Final part
10-15 min	20-40 min	10-15 min
Breathing exercises.	Stabilization exercises.	Stretching exercises.
	Stretching and bending exercises.	Breathing exercises
Lubrication or calisthenics exercises.	Abdominal strengthening exercises.	
	Aerobic exercises	
	Advanced Exercises	

**Table 2:** Each rehabilitation session has a specific duration and specific exercises.

### Dosage

It will begin with 6 to 8 repetitions of each exercise and as they are mastered, they will progressively increase up to 20 repetitions of each one. Starting from 3 series of each exercise progressively increasing according to the evolution of the player until reaching 5 series of each exercise. A new cycle begins with greater complexity or resistance. Respiratory exercises serve as recovery within the session. The session time can range from 60 to 70 min., Depending on the number of repetitions and amount of exercises to be developed. The best effect of the treatment is achieved with five frequencies a week [7,8].

### Control and Evaluation

The controls of the therapeutic physical exercises must be carried out before and after each session.

The evaluations can be weekly, monthly and quarterly according to the evolution, which include imaging studies and comparative functional tests.

### Conclusion

- The theoretical study carried out on the most current conceptions on rehabilitation and therapeutic exercises allowed to expand the scientific knowledge on the subject and conceive the proposal presented.
- It was found that the treatment of sports injuries is deficient, since not all cases are fully rehabilitated from the injury and many are those that have as a consequence,

that they abandon sports.

- The proposal of therapeutic physical exercises contributes to the rehabilitative treatment since it gives the possibility of acting positively on the state of health of cricket players.

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