

Role of Exercise in Prevention of Sports Injuries

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Abstract

Exercise is good for the body, and with proper precautions, sports injuries can often be prevented. The quality of protective equipment, padding, helmets, shoes, mouth guards, has helped to improve safety in sports. But you can still be susceptible to injury. Our body is composed of 60% of water. When we exercise or we do sports, we lose this water. We need to replace those water through proper hydration. According to sports dietitians, water is essential in maintaining blood volume, regulating body temperature and allowing muscle contractions. Apart from water, hydrating drinks that are rich in electrolytes are recommended for athletes. Warming up is a must before engaging in sports. It prepares your body, mind, and heart for training or sports. Warming-up gradually raises your heart rate, warms your muscles and connective tissues, improves your mobility and promotes functionality of all your body's movements. It also allows entry of oxygen to your muscles, tendons, ligaments and flexible joints. If warming up is important, cooling down is also essential. After working out or training, you have to spend at least 10 minutes performing gentle exercises that will return your heart rate to a normal pace. By cooling down, you are allowing your body to remove excess wastes and allow the flow of oxygen and nutrients into your muscles. It is important that you maintain and develop flexibility in your body to prevent acquiring injuries. Poor flexibility is equivalent to short and tight muscles which cause muscle and tendon strains. Through stretching, you can improve or maintain your flexibility. After cooling down, make sure you spend time stretching. During a continuous training or a long play, remember to take a break so that your body and mind will have ample time to recover and gain energy. If you will not take a rest between sets or periods, your mind will keep on pushing your body to work which will lead to injuries. Sleep plays a vital part in your recovery which is vital in your overall training program and optimal performance. Sleep can make you stronger and will prevent you from fatigue, poor judgment, and certain injuries. Diet and proper nutrition are important for athletes. A good nutrition plan is the foundation of an effective fitness program. It is necessary that you see your sports therapist very often so that they can check your health.

Keywords: Injuries, prevention, exercise and treatment.

Introduction:

Before you engage in sports or training, always keep in mind that you should be in proper physical condition. Perform regular conditioning exercises that are designed specifically for your sport. Moreover, train slowly but surely. You do not learn any sports overnight. To condition your body, you need to undergo training. The demands of sports and exercise on the body mean that you should replace all the energy and nutrients consumed by eating healthy food. For athletes, it is important that they eat regular, small meals to fuel their training or sport. They should also take protein to promote muscle health. Pain is the number one symptom of injury. If you experience a pain that is intolerable, stop playing

or take a break. Pain is the earliest symptom of a possible injury. It will be followed by swelling, stiffness, instability, weakness, numbness, tingling and redness, among others. Pain can be felt in shoulders, elbows, wrists, fingers, spines, hips, knees, ankles and feet.

causes of sport injuries may include.

Improper or poor training practices. Wearing improper sporting wear.
Being in poor health.
Incorrect warm-up or stretching practices before a sporting event or exercise.

Common sports injuries can include.

Sprains and strains
Joint injuries (knee, shoulder, ankle)
Muscle injuries
Dislocations
Fractures
Achilles tendon injuries
Pain along the shin bone.

How can we prevent a sports injury?

Basic steps to prevent a sports injury:

- Develop a fitness plan that includes cardiovascular exercise, strength training, and flexibility.
- Alternate exercising different muscle groups and exercise every other day and three in weeks.
- Cool down and stretch properly after exercise or sports. It should take 2 times as long as your warm-ups.
- Stay hydrated. Drink water to prevent dehydration, heat exhaustion, and heatstroke.
- Stretching exercises can improve the ability of muscles to contract and perform, reducing the risk for injury. Each stretch should start slowly until you reach a point of muscle tension. Stretching should not be painful. Aim to hold each stretch for up to 20 seconds.
- Use the right equipment or gear and wear good quality shoes that provide support and that may correct certain foot problems that can lead to injury.
- Learn the right techniques to play your sport.
- Rest when tired. Avoid exercise when you are tired or in pain.
- Always take your time during strength training and go through the full range of motion with each repetition.
- If you do sustain a sports injury then make sure you participate in adequate rehabilitation before resuming strenuous activity.

Acute injury:

- An acute injury is generally an injury that is severe and with sudden onset.
- Sprained ankles, strained backs, and fractured hands are acute injuries.
- Acute injury is a sudden injury that is usually associated with a traumatic event such as clashing into another player during sports or a fall from a bike.
- A traumatic impact can cause your bone to crack, muscles to tear or ligaments to snap.
- You will experience a sudden sharp pain that is often severe, immediate swelling and even cold purple regions in your body that indicates

a lack of proper blood circulation in that injured part.

- You may even lose your stability if your knee ligaments are torn and you will be unable to place your body weight on it. Those are prime examples of what an acute injury is.
- Acute injury is usually the result of a specific impact or traumatic event that occurs in one specific area of the body, such as tearing a muscle, breaking a bone, or injury to the joint.
- Acute pain from an injury issue typically requires immediate medical attention.
- If you suspect your injury is severe, you should go to the emergency department.
- Severe swelling and pain, crunching or popping sound from the injured area, visible deformities, inability to support weight on injured area, trouble breathing, fever, or dizziness.
- Otherwise some acute pain or injuries can be treated at home with the rice treatment.
- Rest, ice the area, compress or immobilize the injured area, and elevating the injured area above the heart will minimize swelling and pain.
- You should also see a doctor for further evaluation if after you have tried treatment at home using the rice method and you are still having pain or instability.

Overuse injury:

The term “overuse injury” is a broad term used to describe an injury caused by repeated microtrauma, rather than a specific or single injury event. The term "overuse" is used as the onset of these types of injuries are usually precipitated by a period of inappropriate tissue loading .

1. Excessive magnitude or volume of load
2. Insufficient recovery between bouts of load

An overuse injury is usually caused by repetitive activities over a period of time. It is often due to excessive and repetitive loading of the specific tissue with a gradual onset of symptoms. During the early stages of the injury, there is little or no pain and the athlete might unknowingly continue to place pressure on the injured area. As a result, the area does not have the necessary time to heal. The cause of an

overuse injury is often less obvious, compared to the macro-trauma of an acute injury. The principle in overuse injury is that the repetitive microtrauma overloads the capacity of the tissue to repair itself. During exercise, the various tissues such as muscles, tendons, bones and ligaments, are being loaded and experience excessive physiological stress. After the specific exercise activity, the tissues undergo adaptation in order to strengthen and to be able to withstand similar stress in the future. If the adaptive capability of a specific tissue type is exceeded and injury occurs, this is most often an overuse injury.

Intrinsic Risk Factors

- Malalignment issues, such as genu valgus or varus, patella alta, femoral neck anteversion
- Leg length discrepancy
- Muscle imbalance
- Muscle weakness
- Flexibility issues, such as generalized muscle tightness, restricted joint range of motion
- Body composition

Extrinsic Risk Factors

- Training load errors, such as excessive volume, intensity, increase, inadequate recovery
- Surfaces
- Shoes
- Equipment
- Environmental conditions
- Nutrition
- Psychological factors.

Consequences of overuse injuries include

- Pain
- Reduced physical performance
- Reduced sports participation
- This influences the athlete, but also the team and sports organizations as well
- There are also direct and indirect costs involved in the treatment of overuse injuries
- Overuse injuries often lead to an athlete's premature retirement from his/hersporting career
- An athlete may still be symptomatic even after the end of their sporting career.
- Overuse injuries pose a barrier to physical activity even in less-athletic populations, and this has consequences for long term health and quality of life.

Treatment of Overuse Injuries:

- identify and address the cause of injury
- reduce inflammation and pain
- promote healing
- prevent complications
- restore normal use of the injured area.
- relative rest and avoidance of aggravating activities while maintaining fitness
- use of ice and electrotherapeutic modalities
- soft tissue techniques
- strengthening and rehabilitation
- Medication

Sports Injury?

A sports injury is any common injury suffered while participating in sports, exercise or work. Most sports injuries are due to either trauma or overuse of muscles, ligaments, tendons or bones.

Common injuries include:

- Sprains
- Strains
- Bone fractures
- Ligament damage
- Dislocations
- Concussions

Preventions of sports injuries:

Sports Injuries Be Prevented Most sports injuries are caused by improper or poor training techniques, using improper sports equipment or improper stretching and warm up practices. Luckily, measures can be taken to help prevent injuries. Common cause of injury is jumping right into high impact or vigorous exercise without warming the body up first. Warming up usually involves stretching and light exercise to gradually raise your heart rate and increase muscle and joint usage. Light cardio exercises with very small increases in impact or weight load has been shown to be the safest method. Many team sports have made the use of protective gear mandatory. Wearing and using equipment that is well-fitting and appropriate for a specific sport is another way to avoid an unnecessary injury.

Conclusion:

Acute injuries where kids are hit by something (like a ball), fall, or run into another player. These can be minor (like a scratch or bruise) or more serious (like an eye injury or broken

bone). **overuse** (also called repetitive stress injuries) that happen from doing the same action over and over. They can cause problems with bone growth. Overuse injuries often happen in the feet, knees, elbows, and shoulders. **Reinjuries** that happen when an athlete returns to the sport before an earlier injury fully heals. Many of these injuries can be prevented by using the proper sports equipment, making sure kids are playing a sport that is a good fit for them, following doctor's instructions on when to go back to sports after an injury, and not overdoing a training routine and players also. It is extremely important that you always listen to your body. When you engage in sports, you have to begin slowly and steadily to avoid straining some of your muscles which may lead to injuries. using improper sports equipment or improper stretching and warm up practices Do not work beyond your limits.

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