

Injuries In Sports

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Introduction:

In recent years, increasing numbers of people of all ages have been heeding their health professionals advice to get active for all of the health benefits exercise has to offer. But for some people particularly those who overdo or who don't properly train or warm up these benefits can come at a price; sports injuries. Fortunately, most sports injuries can be treated effectively, and most people who suffer injuries can return to a satisfying level of physical activity after an injury. Even better, many sports injuries can be prevented if people take the proper precautions.

It is for casual and more serious athletes as well as the trainers, coaches, and health professional who deal with sports injuries.

What are Sports Injuries?

The term sports injury, in the broadest sense, refers to the kinds of injuries that most commonly occur during sports or exercise. Some sports injuries result from accidents; others are due to poor training practices, improper equipment and sports kit, lack of conditioning, or insufficient warm-up stretching.

Although virtually any part of your body can be injured during sports or exercise, the term is usually reserved for injuries that involve the musculoskeletal system, which includes the muscles, bones, and associated tissues like cartilage. Traumatic brain and spinal cord injuries, and bruises are considered.

An Injury is defined as any physical complaint, including match or training session, that requires absence form almost training session or match.

Common Injuries:

Strain:

Strains are injury involving the musculotendinous unit and may involve the muscle tendon and the junction between two as well as their

attachments to bone. Some of the strain in football are:

a) Low Back Strain:

A low back strain, often called a lumbar strain is an injury to the large muscles in the low back. These injuries are very common, affecting most everyone at some point in their life Low back strains can be painful and debilitating.

b) Groin Strain:

A Groin strain is a common sports injury that is due to a strain at the muscles at the inner thigh.

c) Hamstring Strain :

A pulled hamstring is common sports injury seen most commonly in sprinters. A pulled hamstring is a muscle called a hamstring strain.

d) Neck Strain :

A strain of the neck, or the muscle around the cervical spine is often called whiplash. This neck muscle strain occurs when there is a sudden extension and flexion of the neck.

Sprain:

A Sprain is an injury involving a ligament, Ligaments are basically inelastic and designed to prevent abnormal motion of a joint whenever a joint is forced to move in an abnormal directions ligaments are stressed some of the common sprain in football are :

a) Knee sprain:

Violent overstretching of one or more ligaments in the knee. Sprain Involving two or more ligaments cause considerable more disability than single ligaments sprains. When the ligament is overstretched, it become tense and gives way at its weakest points, either where it is attached to bone or within the ligaments itself. If the ligaments

pull or loose a fragment of bone it is called a sprain fracture.

b) Ankle sprain :

A severe injury to the ankle in with one or more ligaments are stretched and totally turn. A severe sprain may include a temporary or lasting dissolution. A Two ligaments cases more disability than a single ligament sprain.

c) Wrist Sprain:

Wrist Sprains are common injuries to the ligaments around the wrist joint. Wrist sprain causes problem by limiting the use of our hands.

d) High Ankle Sprain :

A high Ankle sprain is a used to describe an injury to the ligaments that connect the two bones of the lower ligament, called a syndesmosis, joint's the bones together and runs form the knee to the ankle. In a high ankle syndesmosis is injuries.

e) Finger Sprain :

Finger sprains are injuries to the ligaments and soft- tissues around the small joint.

f) Thumb Sprain :

An ulnar collateral ligament sprain of the thumb is a painful injury that may cause looseness in base of the thumb where it attaches to a hand.

Head Injury:

Head injury can be fatal or serious in football. Head injury usually caused by head collisions with players, Goalpost, and the ground surface. Football players also frequently use their unprotected heads to pass or shoot the ball. A Football can hit the head with significant force and there has been considerable debate over whether such " it may be called a head or brain injury

Groin Injury:

Generally tall and thin athletes built requires a mix of aerobic and anaerobic running, kicking, and jumping efforts. Groin injury results from overuse or generally managed conservatively during match and training session.

Thoracic Injuries :

When spinal injuries occurs at chest level. Thoracic injuries result from collisions with players, goalpost, fall in the ground and direct hit by the ball. It is rare injury in football.

Hip Injury:

Hip injury generally occurs in most stress in hip structure. This high incidence result from the costly demands of the game, including punt kicking, sprinting and changing of direction. Higher extension and flexion of the hip is also cause of hip injury.

Spinal Cord Injury:

Spinal cord injury is damage to the spinal cord that is due to indirect injury from damage to the bones, soft tissues, and blood vessels surrounding the spinal cord. A seemingly minor injury can cause spinal cord injury due to spinal weakness and the spinal canal protecting the spinal cord become too narrow due to the normal aging process.

Cervical Injury:

When spinal cord injuries occur near the neck, this is called cervical injury. Cervical injury extremely is rare in football. The term " Cervical Spine" refers to the area around the seven vertebrae in the neck, and this is where the fracture can occur. In football the injury usually occurs by the player being struck on the head whilst heading the ball. The force arm form the blow to the head is transmitted to the neck, where it can be resolved as a fracture.

Turf Toe:

Turf toe describes injury to the capsuligamentous structure of the metatar so phalangeal joint. Hyperextension is the most common mechanism of injury in turf toe.

Typically, the forefoot is plant grade and slightly dorsiflexed, and the heel raised off the Ground.

Muscle Cramp:

"They are painful, sustained contraction of all the fiber in a muscle. They can last for just a few seconds or continue for several hours"cramp occurs most frequently under competitive playing conditions. Increase heat, high humidity fluid loss fatigue and tension all are contributory factors. A player having a previous history of muscle cramp is more likely to infinefloe again. Losses of salt, potassium, Manganese, and even zinc have postulated etiologic factors. However the exact cause is not known.

Muscle Pull :

It is an acute tear of skeletal muscle fiber and is characterized by sudden localized and persistent pain in a muscle, e. g. horse rider on inner thigh.

Muscle pull resulting from lack of proper warm up before physical activity, poor flexibility, over training, lack of co-ordination of activity. Poor training and imbalance in muscular strength between agonistic and antagonistic muscle particularly two joint it also occurs most frequently under competitive and training conditions.

Skier's Thumb:

An ulnar collateral ligament sprain of the thumb is a painful injury that may cause looseness of the thumb between base of the thumb where it attaches to the hand.

Blisters :

Blisters represent accumulation of fluid within intradermal slits that form primarily from horizontal shearing forces acting upon the skin. The slits develop secondary to pickle-cell neurosis and fill with fluid from dermis.

Stress Fracture:

The metatarsal and fibula are particularly susceptible to stress fracture. This condition appears as aching pain, soreness, and distress on function. There is no history of injury; however, examination will reveal local tenderness over the bone.

The Significance of stress fracture of the fibula is not great as that of the foot as the fibula is a non-weight-bearing bone. Careful rehabilitation is imperative the patient develop chronic muscular disability in the leg. Frequently, by the time of fracture is found the time for immobilization will be past and the treatment will be careful given to muscular restoration, local heat, and ice massage.

Fracture Of The Metatarsal Bone :

In cases without displacement, partial immobilization with a zinc oxide-gelatin cast in addition to a semi rigid sole, a rigid sole, or a rigid postoperative shoe will suffice. A semi rigid boot or rigid orthotic can also be helpful.

Anterior Tibial Syndrome :

The anterior tibia, extensor hallucis, and extensor digitorum longus muscles arise from the anterior compartment of the leg. This compartment is tightly roofed by the anterior fascia. In the anterior tibial syndrome, there is rapid swelling of the muscle within the compartment. This may come from active exercise of muscle that have not been previously conditioned, resulting in edema and swelling it may

also arise following direct injury in which there was hemorrhage and swelling in the space.

Tendon Achilles Bursitis:

This condition is caused by a sub-dermal enlargement immediately above the tendon. Achilles insertion although it is not the usual site of bursa. It is caused by prolonged pressure from the upper margin of the shoe counter rubbing against a prominent posterior-superior border or tuberosity of the calcaneus.

Fractures:

An interruption in the continuity of the bone which may be a complete break in incomplete break or minor crack.

Dislocation:

Dislocation of the joint occurs when the articular surfaces are completely separated from each other so that all subluxation occurs when the articular surfaces are partially separated but there is still some part of each surface in contact. The main cause of either dislocation or subluxations is trauma. Congenital malformation of the joint surface can occur and this could result in dislocation, as for example in a congenital dislocation of the hip.

Plantar Fibromatosis And / Or Heel Spurs:

This can occur in either the flatfoot or immobile rigid foot with the high arch caused by a biomechanical fault or disturbance in function. This condition usually needs realignment of the foot fault by strapping or orthotics.

Foot Syndrome, Or Congenital Anatomic Disturbance:

With the first metatarsal bone shorter in length than the second metatarsal bone, a resulting abnormal biomechanical faults occur because of inability to pronate.

Inflammation:

This is the reaction that occurs in the body tissues as the result of an injury or irritant if the severity of the injury causes destruction of tissue then the inflammatory reaction will occur in the surrounding area. Then an inflammatory process is defensive and is an attempt to remove the irritant debris and dead cells. An inflammatory condition is indicated by the addition of the suffix-Itis hence tonsillitis, bronchitis, appendicitis and so on.

Soft Injuries:

Soft Tissue injury comprises damage to ligaments, muscles, tendons with synovial sheaths, fascia, and inter articular cartilage.

Injuries To Ligaments:

Sprain, Strain and Rupture are terms used to denote injuries. Acute sprain of the ligament is caused by a sudden twisting or wrenching of a joint which results in overstretching of the ligament. It is associated with the muscle controlling the joint being momentarily off guard so that the ligament is subjected to the full force of the movement. Only some of the fibers are reputed, the severity of the injury depending on the number of fibers affected. The joint remains stable but the quality of stability depends on the number of fibers remaining intact. Chronic sprain of a ligament is caused by repetitive stretching from a minor force which may be due to bad postural habit or poor quality of movement. Strain may be used as term in the diagnosis of partially ruptured ligaments but is more commonly applied to muscle and tendon injuries. Complete rupture is disruption of all fibers of the ligament caused by a sudden, violent force such that the joint is unstable.

Tendon Injuries:

Tendons are strong structures which connect muscle bones. The blends with tendon at the teno-muscular junction and the tendon blends with the periosteum at the tendon periosteal junction. Some tendons are enclosed in a synovial sheath. Tendons that do not have a synovial sheath slide smoothly within a compartment at deep fascia. The main cause of tendon injuries may be traumatic, i.e. Direct cuts, Sudden stretch. These injuries may be partial or complete to the footballers.

Tenosynovitis:

This is inflammation of the synovial sheath of a tendon. The commonest cause is over use, but pressure may also cause the condition.

Rupture:

There is complete loss of continuity of muscles fibers. Both strain and rupture are caused by sudden stretching force applied whilst the muscle in contracting.

Conclusion:

This is bruising without loss of continuity of fibers. It is caused by a blow to the muscle.

References:

- 1) Chomial J, Junge A, Peterson L, and Dvorak J (2000) Severe injuries in football players. Influencing factors. *Am J Sports Med* 28: S58-S68
- 2) Hawkins RD, Hulse MA, Wilkinson C, Hodson A, and Gibson M (2001) The association football medical research programme: an audit of injuries in professional football.
- 3) Ostenberg A and Roos H (2000) Injury risk factors in female European football. A prospective study of 123 players during one season. *Scand J Med Sci Sports* 10: 279-285
- 4) Rahama N, Reilly T, and Lees A (2002) Injury risk associated with playing actions during competitive soccer. *Br J Sports Med* 36: 354-359
- 5) Waston A. Incidence and nature of sports injuries in Ireland *American journal of sports Medicine* 1993; 21: 137-143.