Common sports injuries

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Common sports injuries

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Abstract
Every day, a lot of people all over the world participate in games and sports activities or competitions. Participation in sports improves physical fitness and overall health and wellness. Games and sports can also result in injuries, some minor, some serious and still other in lifelong medical problem. Sports injuries result from acute trauma or repetitive stress associated with athletic activities. Sports injuries can affect bones or soft tissue (ligaments, muscles, tendons). There are numerous sports injuries happened in the field of sports. It is very important for all coaches, trainers and players to know the causes symptoms, prevention and treatment for all these common injuries in order to avoid most of these types of injuries, also to update the poor training methods. This paper will review the general common sports injuries.

Keywords: Sports injuries, exercise, sports, physical education

1. Introduction
Sports injuries are injuries that occur in athletic activities or exercising. They can result from accidents, poor training technique in practice, inadequate equipment, and overuse of a particular body part. In the United States there are about 30 million teenagers and children alone that participate in some form of organized sport. About 3 million avid sports competitors 14 years of age and under experience sports injuries annually, which causes some loss of time of participation in the sport. [1] In the process to determine what exactly happened in the body and the standing effects most medical professionals choose a method of technological medical devices to acquire a credible solution to the site of injury. Prevention helps reduce potential sport injuries. It is important to establish participation in warm-ups, stretching, and exercises that focus on main muscle groups commonly used in the sport of interest. Also, creating an injury prevention program as a team, which includes education on rehydration, nutrition, monitoring team members "at risk", monitoring behavior, skills, and techniques.[2] Season analysis reviews and preseason screenings are also beneficial reviews for preventing player sport injuries. Adults are less likely to suffer sports injuries than children, whose vulnerability is heightened by immature reflexes, an inability to recognize and evaluate risks, and underdeveloped coordination. Injury rates are highest for athletes who participate in contact sports, but the most serious injuries are associated with individual activities [3]. Between one-half and two-thirds of childhood sports injuries occur during practice, or in the course of unorganized athletic activity. Baseball and softball are the leading causes of sports-related facial trauma in the United States, with 68% of these injuries caused by contact with the ball rather than player-player collision or being hit by a swung bat [4].

Common Sports Injuries [5, 6, 7]
2. Sprains
A sprain is where one or more of your ligaments is stretched, twisted or torn. Ligaments are strong bands of tissue around joints. They connect one bone to another and help keep your bones together and stable. Sprains often occur in ligaments around joints in the ankle or knee. The joint is not dislocated or fractured. The symptoms of a sprain include:

- pain,
- inflammation (swelling),
- Bruising, and Restricted movement in the affected area.

Sprains are common injuries in many sports and, if necessary, can be treated with rest and anti-inflammatory medication.

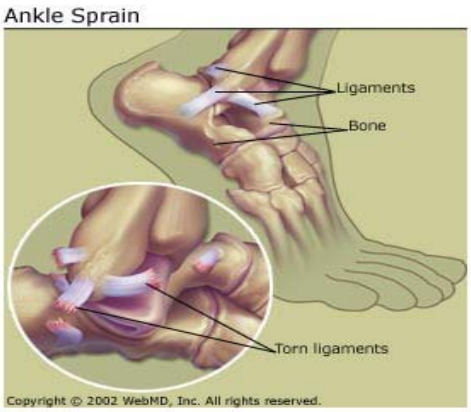

Fig 1: Sample of ankle sprain injury [8]

3. Strains

A muscle strain is where muscle tissues or fibers are stretched or torn. A muscle strain is sometimes referred to as 'pulling a muscle'. Tendons can also be strained. A tendon is the tough, narrow tissue at the end of a muscle that connects it to the bone. Strains are caused by a muscle that is overstretched or that over-contracts. Symptoms of a strain include:

- pain,
- Muscle spasm,
- A loss of strength in the muscle.

Strains are common to many sports, particularly those involving running, jumping or rapid changes of direction.
To help prevent sprains and strains, you should warm up properly before exercising and wear suitable footwear. Conditioning and strengthening exercises can also help.

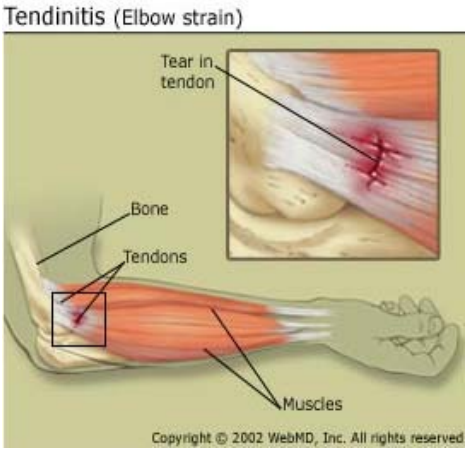

Fig 2: Sample of elbow strain injury [9]

4. Dislocation

A dislocation is an injury in which the ends of your bones are forced from their normal positions. The cause is usually trauma resulting from a fall, an auto accident, or a collision during contact or high-speed sports. Dislocation usually involves the body's larger joints. In adults, the most common site of the injury is the shoulder. In children, it's the elbow. Your thumb and fingers also are vulnerable if forcibly bent the wrong way. The injury will temporarily deform and immobilize your joint and may result in sudden and severe pain and swelling. A dislocation requires prompt medical attention to return your bones to their proper positions.

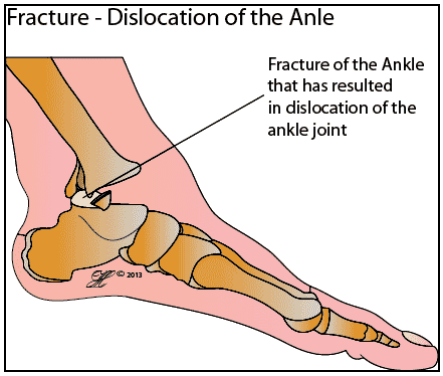

Fig 3: Sample of ankle dislocation injury [10]

5. Fractures

Fractures are a common injury for people of all ages. Diagnosing a fracture can sometimes be complicated as it depends on location and how the fragments are aligned. The difference between a compound fracture and a simple fracture is visible, and an x-ray will be able to determine the shape of the fracture. Children will heal faster than adults as their bodies are still growing. A fracture for a child could take only a few weeks to heal, whereas an older adult could take months. The best way to prevent one from occurring is to practice safety and awareness.

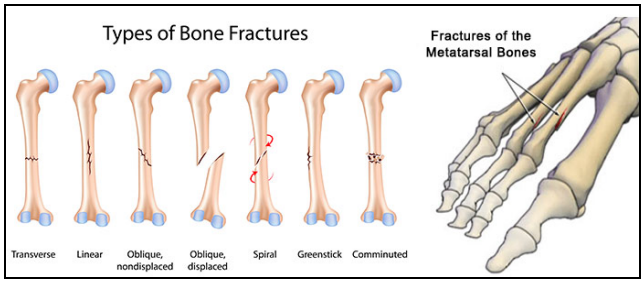

Fig 4: Types of bone fractures [11]

6. Knockout

Knock out is a fight-ending, winning criterion in several full-contact combat sports, such as boxing, kickboxing, karate, some forms of taekwondo and other sports involving striking [12]. The term is often associated with a sudden traumatic loss of consciousness caused by a physical blow. Single powerful blows to the head can produce a cerebral concussion or a carotid sinus reflex with syncope and cause a sudden, dramatic knock out [13].

Fig 5: Game over: Carl Froch knocked out George Groves in the eighth round of their rematch at Wembley [14]

7. Punch Syndrome

Punch syndrome is a condition seen in boxers and alcoholics, caused by repeated cerebral concussions and characterized by weakness in the lower limbs, unsteadiness of gait, slowness of muscular movements, hand tremors, hesitancy of speech, and mental dullness. Punch syndrome most often affects fighters of the slugging type, who are usually poor boxers and who take considerable head punishment, seeking only to land a knockout blow [15]. It is also common in second rate fighters used for training purposes, who may be knocked down several times a day. Frequently it takes a fighter from one to two hours to recover from a severe blow to the head or jaw. In some cases consciousness may be lost for a considerable period of time [16].

Fig 6: MMA Fighter Andrei Arlovski sustaining a severe concussion [17]

8. Wrestler Ear

The term cauliflower or wrestler ear refers to a deformity of the ear caused by blunt trauma or other injury, such as what may occur during a boxing or wrestling match [18]. Left untreated, the injury leads to a blockage that prevents blood flow and damages tissue. This results in a bumpy or lumpy appearance on part of the ear, similar to a cauliflower. The most common cause of wrestler ear is a hit to the ear or repeated hits to the ear that leads to hematomas, or small collections of blood that clot and block the flow of blood and nutrients. These can also occur when skin is pulled away from cartilage, the semi-rigid tissue that gives the ear its shape fortunately, the types of injuries that cause cauliflower ear are often preventable by wearing the right type of protective head gear. Early treatment can help prevent permanent deformity [19].

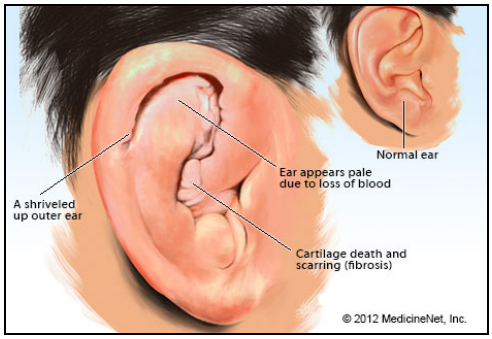

Fig 7: Sample of wrestler ear or cauliflower ear. [20].

9. Weight lifter blackout

Blacking out while exercising can be due to a variety of causes that restrict blood flow to your brain. Dehydration as not having enough fluids in your body it can lower your blood pressure and lead to blacking out, particularly if you are sweating a lot [21].Dehydration is the most common cause of orthostatic hypotension, this causes significant drops in blood pressure when you go from laying to sitting to standing. If you are significantly dehydrated and trying to squat it is not unreasonable to think your blood pressure changes could cause you to become light headed and close to blacking out [22].

Fig 8: Sample of blackout condition [23].

10. Stitch at side

Side stitches are muscle spasms of the diaphragm, and they occur occasionally during strenuous exercise [24]. Most people experience stitches on their right side, immediately below the ribs. A sudden sharp pain during exercise that occurs below the bottom of the ribcage, and disappears once exercise stops [25]. Though there are different theories, some experts think stitches are the result of a cramp in the diaphragm, perhaps due to. As you run, you increase pressure on your abdominal muscles and breathe rapidly, expanding your lungs. This pain gradually subside as the activity continues [26].

Fig 9: Sample of stitch at side injury [27]

11. Low back pain

Lower back pain can be caused by a variety of problems with any parts of the complex, interconnected network of spinal muscles, nerves, bones, discs or tendons in the lumbar spine[28]. Pain in the low back can be a result of conditions affecting the bony lumbar spine, discs between the vertebrae, ligaments around the spine and discs, spinal cord and nerves, muscles of the low back, internal organs of the pelvis and abdomen, and the skin covering the lumbar area. Treatment of low back pain is optimally directed toward a diagnosed or suspected specific cause [29]. For acute lumbar strain, use of a home remedy initially can be beneficial. Exercise appears to be useful for preventing low back pain [30]. Exercise is also probably effective in preventing recurrences in those with pain that has lasted more than six weeks.

Fig 10: Sample of low back pain injury [31].

12. Shoulder impingement syndrome

Shoulder impingement syndrome is a common cause of shoulder pain. It occurs when there is impingement of tendons from bones of the shoulder [32]. Overhead activity of the shoulder, especially repeated activity, is a risk factor for shoulder impingement syndrome. Examples include: painting, lifting, swimming, tennis, and other overhead sports. Other risk factors include bone and joint abnormalities. With impingement syndrome, pain is persistent and affects everyday activities. Motions such as reaching up behind the back or reaching up overhead to put on a coat or blouse for example may pain. Over time, impingement syndrome can lead to inflammation of the rotator cuff tendons (tendinitis) and bursa (bursitis). Impingement syndrome is usually treated conservatively, but sometimes it is treated with arthroscopic surgery or open surgery [33]. Conservative treatment includes rest, cessation of painful activity, and physical therapy.

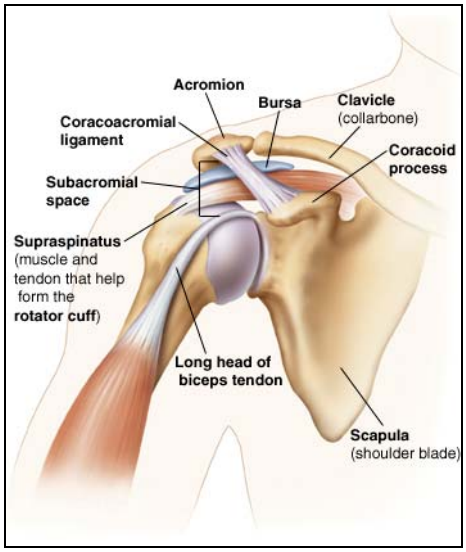

Fig 111: Anatomical structure of shoulder impingement syndrome [34]

13. Tennis elbow

Tennis elbow" is a common term for a condition caused by overuse of arm, forearm, and hand muscles that results in elbow pain. You don't have to play tennis to get this, but the term came into use because it can be a significant problem for some tennis players. Tennis elbow is caused by either sudden or indirect injury of the muscle and tendon area around the outside of the elbow[35]. Tennis elbow specifically involves the area where the muscles and tendons of the forearm attach to the outside bony area (called the lateral epicondyle) of the elbow. Overuse injury can also affect the back or posterior part of the elbow as well. Tennis elbow most commonly affects people in their dominant arm, but it can also occur in the non-dominant arm or both arms [36].

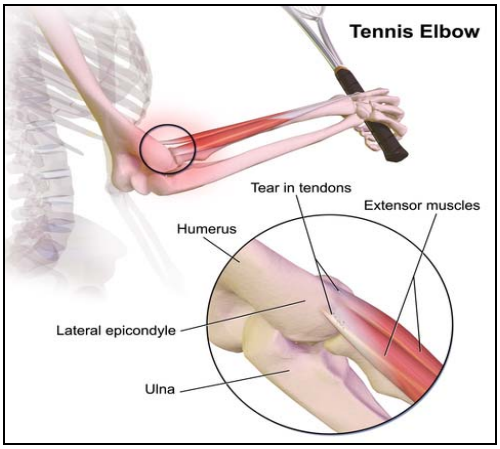

Fig 12: Sample of tennis elbow injury [37].

14. Javelin throwers elbow

Throwers elbow occurs when there is damage to the bones, muscles, tendons and ligaments around the elbow joint and forearm. The throwing motion causes the structures on the medial side (inside) of the elbow to stretch, while at the same time compresses the structures on the lateral side (outside) of the elbow. The damage eventually causes a restriction of movement, inflammation and pain, and leads to the formation of scar tissue, bone spurs and calcium deposits. If untreated, this damage can put so much pressure on the muscles and nerves that they can cut off the blood flow and pinch the nerves responsible for controlling the muscles in the forearm. By far the most common cause of throwers elbow is overuse, Poor technique, using ill-fitted equipment and poor level of general fitness and conditioning. Any action which places a repetitive and prolonged strain on the forearm muscles, coupled with inadequate rest, will strain and overwork those muscles [38].

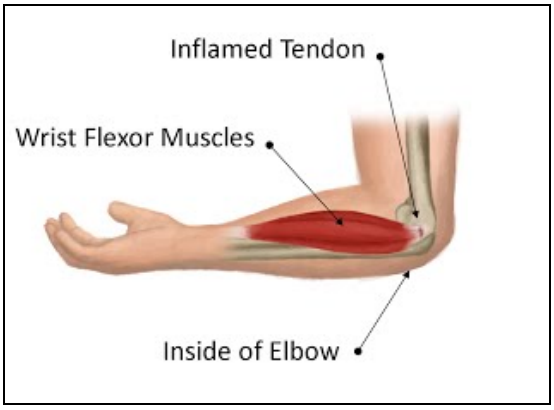

Fig 13: Sample of throwers elbow injury [39].

15. Boxer elbow

As is the case with any complex joint, elbow injuries can range from minor to acute. Boxing injuries of the acute variety could include elbow dislocations, tendon tears and serious damage to the structures around the elbow. These injuries require medical attention and possibly surgery. For minor injuries overuse and boxer's elbow, which involve pain in the posterior of the joint, rest and rehabilitation should be sufficient. Once you damage

your elbows by striking too hard and too fast or missing the target completely, you need to take a patient approach to make a full and lasting recovery. Strengthening exercises include liberal stretching of the area, along with exercises to strengthen the grip. Working on wrist flexion will help to strengthen tendons that run from the hand all the way up to the elbow [40].

Fig 14: X-ray case shows a posterior dislocation of the elbow [41].

16. Mallet finger

A mallet finger is a deformity of the finger caused when the tendon that straightens your finger (the extensor tendon) is damaged. When a ball or other object strikes the tip of the finger or thumb and forcibly bends it, the force tears the tendon that straightens the finger. The force of the blow may even pull away a piece of bone along with the tendon. In a mallet finger, the fingertip droops, it cannot straighten on its own power. The finger may be painful, swollen and bruised, especially if there is an associated fracture, but often the only finding is the inability to straighten the tip [42].

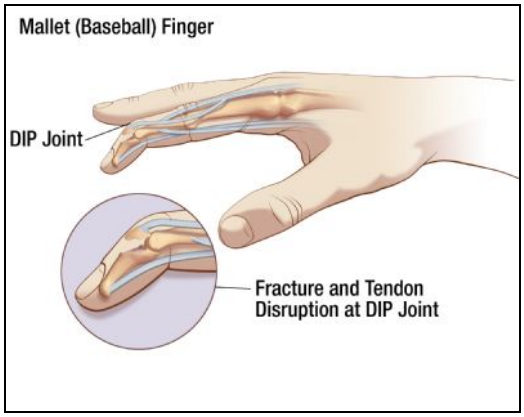

Fig 15: Sample of mallet finger injury in baseball [43].

17. Runner's Knee

Runner's knee, got its nickname for an obvious and very unfortunate reason, it's common among runners, But it can also strike any athlete who does activities that require a lot of knee bending like walking, biking, and jumping. It usually causes aching pain around the kneecap. The stress of running can cause irritation where the kneecap (patella) rests on the thighbone. The resulting pain can be sharp and sudden or dull and chronic, and it may disappear while you're running, only to return again afterward, the cause can often be traced back to poorly conditioned quadriceps and tight hamstrings [44]. In the absence of cartilage damage, pain at the front of the knee due to overuse can be managed with a combination of RICE (rest, ice, compression, elevation), anti-inflammatory medications, and physiotherapy [45].

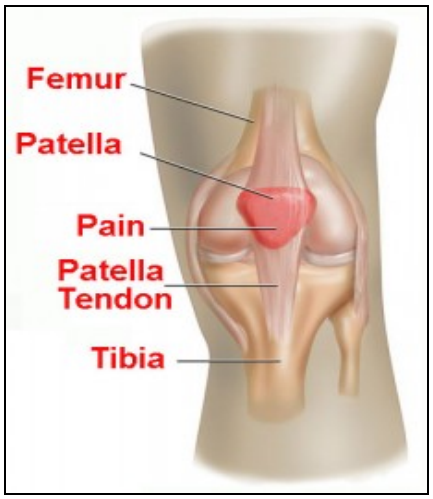

Fig 16: Sample of pain in Patella tendon as a result of knee injury [46].

18. Jumper's Knee

Jumper's knee also known as patellar tendonitis or patellar tendinopathy, is an inflammation or injury of the patellar tendon, the cord-like tissue that joins the patella (kneecap) to the tibia (shin bone). Jumper's knee is an overuse injury, regularly happened to the one who plays sports that involve a lot of repetitive jumping - like track and field (particularly high-jumping), basketball, volleyball, gymnastics, running, and soccer can put a lot of strain on their knees [47].

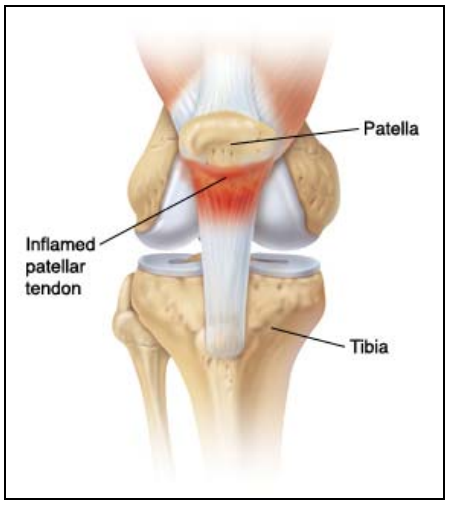

Fig 17: Sample of jumper's knee injury-inflamed patellar tendon [48].

19. Shin Splint

The term "shin splints" refers to pain along the shinbone (tibia) the large bone in the front of your lower leg. Shin splints are common in runners, dancers and military recruits. Medically known as medial tibia stress syndrome, shin splints often occur in athletes who have recently intensified or changed their training routines. The muscles, tendons and bone tissue become overworked by the increased activity. Most cases of shin splints can be treated with rest, ice and other self-care measures. Wearing proper footwear and modifying your exercise routine can help prevent shin splints from recurring [49].

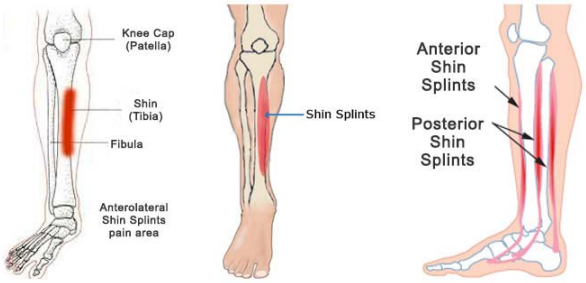

Fig 18: Sample shows anterior and posterior shin splint injury [50].

20. Turf toe

"Turf toe" is the common term used to describe a sprain of the ligaments around the big toe joint. Although it's commonly associated with football players who play on artificial turf [51], it affects athletes in other sports including soccer, basketball, wrestling, gymnastics, and dance. It's a condition that's caused by jamming the big toe or repeatedly pushing off the big toe forcefully as in running and jumping [52].

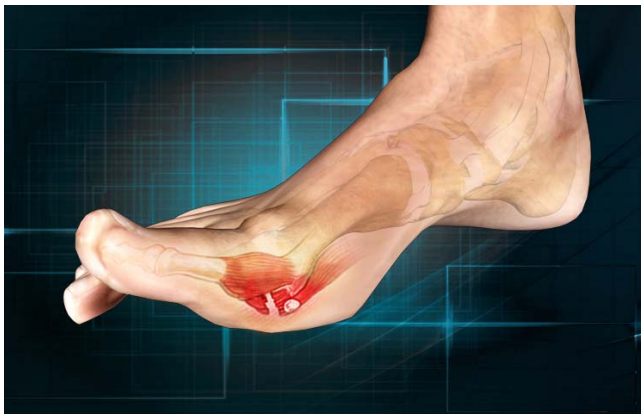

Fig 19: Photo shows the case of turf toe injury [53].

21. Conclusion

All the above sports injuries occur during any sports activities or exercising. They can result from accidents, poor training or warming up technique in practice, inadequate equipment, and overuse of a particular body part. It is very important for any one related to sports field to be aware about all kinds of sports injuries; causes symptoms, prevention and treatment, in order to manage an injury prevention program as a team, which includes education on rehydration, nutrition, monitoring team members, monitoring behavior, skills, and techniques.

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