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Sports injuries, types and prevention

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Abstract

This study set out to determine what the means to prevent sports injuries are. In conclusion, The warming up, limbering down, rest when injured protective gadgets strength and conditioning training programs seem to be effective to reduce the risk of sporting injuries. In the field of sports, there may be a gap between practice guidelines and evidence-based preventive methods. This is the case especially in amateur and youth sports, where coaches may not have adequate education and knowledge on injury prevention and where accustomed behavior may be difficult to change. The significance of the current findings is that at least to a certain extent sports injuries can be prevented and by taking these preventive actions to practice, major benefits can be accomplished.

Keywords: Sports injuries, warming up, limbering down, rest when injured

Introduction

Adhav *et al.* (2010) Studied A Survey of Injuries Prevalence in Varsity Volleyball Players The primary objectives of the study was to quality the injuries of varsity volleyball players and to determine the nature, location, causes, outcome of injuries and the possible risk factors involved. Information on injuries was collected through a questionnaire from members of twelve Indian varsity teams participating in all India Inter Varsity tournament held in Dr. Babasaheb Ambedkar Marathwada University, Aurangabad Maharashtra in December 2007. The age range of the players was 18 to 25 years. 58% of players were in the age range of 22 to 25 years. The volleyball players were asked to recall injuries over the preceding one year period. A total of 121 out of 144 volleyball players sustained injuries. One hundred seventy eight injuries were recorded of which 36% injuries were of recurrent nature. Lower limb injuries were found to be predominant; the ankle and knee being the most commonly injured anatomical location. Most injuries involved soft tissue and related to the muscle and tendon. Most common circumstances giving rise to injuries were spiking (33.70%), blocking (24.15%), diving (17.41%) and setting (11.23%). It was further observed that volleyball players directly involved in attack or defense were found to be more susceptible to injury. Muscle injuries were observed to be the most common type. Spiking is the most common cause of injuries. The results of the research provide a useful insight into the nature, incidence and sites of injuries in varsity level volleyball players. Jesse c. de lee (1992) conducted a study of "Incidence of injury in Texas high school football". This study was undertaken to determine the incidence of injury in high school football based on evaluation of 100 high schools in the State of Texas during a single football season (1989). Certified athletic trainers were the initial medical professionals providing on-site diagnosis and treatment of all injuries. An injury was defined as: 1) an incident causing an athlete to miss all or part of a single practice or game; 2) any incident treated by a physician; and 3) all head injuries reported to the athletic trainer. Data were collected that allowed calculation of the time of exposure to injury per athlete in the sample. There was 75.5% participation in the study by the certified athletic trainers in the 100 schools. A total of 4399 athletes in varsity football programs participated in the study. There were 2228 injuries, as defined in the study, during the period of study, giving an incidence of injury of 0.506 injury per athlete per year. Severe injuries & mdash; those requiring hospitalization & mdash; were found in 137 cases, for an incidence rate of 0.031 injury per athlete per year. The incidence of reportable defined injury was calculated to be 0.003 injury per hour of exposure per student athlete.

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The knee was found to be the most commonly injured anatomic site; the ankle ranked second.

Sports Injuries

Sports injuries are injuries that occur when engaging in sports or exercise. Sports injuries can occur due to overtraining, lack of conditioning, and improper form or technique. Failing to warm up increases the risk of sports injuries. Bruises, strains, sprains, tears, and broken bones can result from sports injuries. Soft tissues like muscles, ligaments, tendons, fascia, and bursae may be affected. Traumatic brain injury (TBI) is another potential type of sports injury.

Types of sports injuries

Pulled Muscle

Muscle strain is another name for a pulled muscle. It occurs when a muscle is overstretched and tears. Symptoms of a pulled muscle may include pain, swelling, weakness, and difficulty or inability to use the muscle. Muscles in the quadriceps, the calves, hamstrings, groin, low back, and shoulder are the most common sites for pulled muscles. Minor muscle strains resolve with RICE -- Rest, Ice, Compression, and Elevation. Nonsteroidal anti-inflammatory drugs (NSAIDs) may help manage pain and swelling as well. More serious muscle strains require evaluation and treatment by a doctor.

Torn ACL

The anterior cruciate ligament (ACL) helps hold the knee joint together and provides stability. A torn ACL is a sports injury that may occur when landing the wrong way, changing direction or stopping quickly, or from a direct blow to the knee. People who suffer a torn ACL may hear a pop and then feel their knee no longer functions. Pain, swelling, and loss of range of motion are symptoms of a torn ACL. It may be difficult to walk. A torn ACL needs to be reconstructed surgically, usually using a graft from another ligament in the patient's own body. Significant rehabilitation is necessary to restore the strength and function of the knee joint after surgery. Depending on the age, health status, and desired activity level of the patient, some may not elect to have surgery. In that case, braces and physical therapy will not cure the condition, but may provide some relief.

Torn MCL

The medial collateral ligament (MCL) connects the upper leg bone (femur) to the larger bone of the lower leg (tibia). It is located on the inner side of the knee. The MCL is typically injured when the knee joint is pushed sideways when making a wrong move or by receiving a direct blow to the knee. A torn MCL results in pain, swelling, and instability of the joint. The condition is often treated with ice, bracing, and physical therapy. If other structures in the knee are injured or if the torn MCL is severe, surgery may be recommended.

Shin Splints

Shin splints are throbbing, aching, or stabbing pain on the insides of the lower leg. Shin splints are a repetitive use injury that may occur in runners or those who are beginning to exercise. Pain occurs when muscles and tendons around the tibia (the larger of the two lower leg bones) become inflamed. Stretching, resting, and applying ice can help relieve shin splints. Nonsteroidal anti-inflammatory drugs (NSAIDs) can reduce pain and swelling. Bandaging the area may help prevent swelling. Flat feet increase the risk of shin splints.

Orthotics and proper athletic shoes may offer support and decrease the risk of shin splints.

Stress Fracture

A stress fracture is an overuse injury that occurs when muscles are no longer able to absorb the impact from physical activity, and a bone absorbs the pressure, resulting in a break. Stress fractures can occur when increasing activity, especially too quickly. The majority of stress fractures occur in the lower legs and feet. Women are more prone to stress fractures than men. Stress fractures cause pain with activity. Rest is prescribed to allow a stress fracture to heal. Sometimes a special shoe or a brace helps decrease stress on the bone, which facilitates healing.

Plantar Fasciitis

The plantar fascia is a ligament that connects the heel to the front of the foot, supporting the arch. Plantar fasciitis is inflammation of this ligament. It causes heel pain often felt the first thing in the morning after getting out of bed or after being active. Stress and strain on the feet increases the risk of plantar fasciitis. Obesity, tight calf muscles, repetitive use, high arches, and new athletic activities are all risk factors for this condition. Plantar fasciitis is treated with rest, ice, nonsteroidal anti-inflammatory drugs (NSAIDs), and special stretching exercises. Cushioning insoles may provide relief. Wearing splints at night may help decrease pain. More severe cases of plantar fasciitis may be treated with cortisone injections, physical therapy, and surgery.

Sprained Ankle

A sprained ankle occurs when the ligaments that support the joint become overstretched. Ankle sprains may occur when playing sports or doing everyday activities. Stepping wrong on an uneven surface or stepping in a way that twists or rolls the foot may lead to an ankle sprain. Sprains and the pain they cause may range from mild to severe. RICE -- rest, ice, compression, and elevation -- are used to treat ankle sprains. Nonsteroidal anti-inflammatory drugs (NSAIDs) can alleviate pain and swelling. Severe sprains may require a brace or cast for several weeks to facilitate healing.

Tennis Elbow

Tennis elbow is an overuse injury that may be associated with playing racket sports. Plumbers, painters and those in similar professions are also at risk. Tennis elbow involves inflammation of the tendons on the outside of the elbow caused by small tears. Tennis elbow causes pain and may be associated with a weak grip. Rest and nonsteroidal anti-inflammatory medications can help alleviate tennis elbow symptoms. Wearing a special brace on the forearm may help decrease pressure on the sore area. Physical therapy may be helpful. Steroid injections can decrease inflammation. Surgery may be an option for tennis elbow when other treatments have failed.

Low Back Pain

There are many causes of low back pain. Back pain may be due to overuse, such as playing one too many rounds of golf or lifting heavy weights. This kind of back strain usually resolves on its own without treatment. Rest and anti-inflammatory medications can provide relief. Using proper form when exercising and increasing the duration of workouts slowly can help protect the back. In some cases, it may be necessary to modify exercise technique or perform daily

activities in a different way in order to reduce the risk of back injury. Other causes of back pain may be more serious and require medical or surgical intervention.

Hip Bursitis

The hip region contains two major bursae. The one located on the outside of the hip is called the trochanteric bursa. The other is called the ischial bursa which covers the ischial tuberosity, more commonly known as the sits bones. Inflammation of either bursae may lead to stiffness and pain around the hip joint not to be confused with the true joint pain of arthritis. Overuse from running, cycling, and similar activities can lead to hip bursitis. The condition causes hip pain that tends to be worse at night. Getting up from a seated position may cause pain. Treatment of hip bursitis consists of avoiding activities that produce symptoms and taking nonsteroidal anti-inflammatory drugs (NSAIDs) to reduce pain and swelling. Physical therapy and steroid injections may be warranted. Using a cane or other assistive device may help take the load off the inflamed joint.

Concussion

A concussion is a traumatic brain injury (TBI) that occurs when the brain undergoes rapid acceleration inside the skull. A direct hit to the head or body may cause a concussion. People who engage in contact sports like football are at increased risk for concussions. The symptoms often include headache, loss of consciousness, memory loss, sleepiness, nausea, vomiting, and more. A thorough neurological exam is necessary after a concussion to determine the extent of the injury. Healing from a concussion requires rest, both physical and mental, to allow the brain to recover. People who suffer concussions must receive a doctor's clearance before resuming sports, especially young people whose brains are more vulnerable.

Achilles Tendonitis

Achilles tendonitis is inflammation that causes pain on the lower back of the leg just above the heel. The area may become painful, swollen, and stiff. The pain worsens after physical activity. The tendon may become thickened and, in some cases, bone spurs may develop in the area. Achilles tendonitis may be treated with rest, ice, stretching, and nonsteroidal anti-inflammatory drugs. Strengthening exercises prescribed by a physical therapist may help. Special footwear and orthotics can help take the strain off the affected heel.

Runner's Knee

Runner's knee – also known as patellofemoral pain syndrome – is a painful condition that occurs when tendons, joint lining (synovia), and/or other soft tissues of the knee become irritated. Overuse can cause runner's knee. So can a misaligned kneecap. In addition to pain, runner's knee may lead to popping and cracking. Switching to activities that do not stress knee joints may minimize problems. RICE – rest, ice, compression, and elevation – may help. Nonsteroidal anti-inflammatory drugs (NSAIDs), physical therapy, and orthotics may provide relief. Rarely, surgery may be an option for severe cases that have not responded to other treatments.

Sports Injury Prevention

Physical activity is an important part of maintaining overall health. However, certain precautions should be taken to minimize the risk of sports injuries. Using the correct equipment and maintaining equipment can help prevent sports

injuries. Wearing the recommended protective gear can help shield the body against injury. Resting between workouts gives the body time to rest and repair. Starting activity slowly and gradually increasing strength, flexibility, and endurance gives muscles, bones, and other tissues the opportunity to adapt to more difficult workouts, minimizing the risk of injury. Finally, listening to the body and backing off at the first signs of pain, discomfort, stress, or overheating will help reduce the risk of sports injuries.

Wear Protective Gear

Protective gear is anything you wear that helps keep you from getting hurt. The gear you wear depends on the sport you play. Helmets are the most common protective gear. They protect your all-important head while you're playing football, hockey, baseball, softball, biking, skateboarding, and inline skating, just to name a few. Make sure you're wearing the right helmet for your sport. For instance, don't wear your baseball batting helmet when you're playing football! Your helmet should fit snugly but comfortably, and if it has a strap — like a bike helmet does — you need to fasten it. Otherwise, it will fall off when you need it most. Other sports require eye protection, mouth guards, pads, wrist, elbow, and knee guards, and a protective cup (for boys only). And don't forget your feet. Cleats are worn in football, baseball, softball, and soccer. These shoes have special rubber or plastic points on the soles to help your feet grip the ground when you run around. Talk with your parents or your coach to know what gear you need. Then wear that gear whenever you're practicing or playing.

Warm Up

It's not a good idea to just bolt on to the field and start playing. You shouldn't even start stretching until you're a little warmed up. So take a light jog to get loosened up and ready to play.

Know the Rules of the Game

Traffic lights at intersections help prevent crashes between the many cars and trucks that drive on the roads together. This works because drivers know the rules and follow them — at least most of the time. It's the same way with sports. When players know the rules of the game — what's legal and what's not — fewer injuries happen. You and the other players know what to expect from each other. For instance, you know that in soccer you can't come from behind, crash into a player's legs, and steal the ball. It's legal — and safer — to go after the ball rather than the player. With sports that use plays, it helps to understand the plays and what your role is in each one. Being where you're supposed to be can help you stay out of harm's way, too.

Watch out for others

Some rules don't have anything to do with scoring points or penalties. Some rules are just about protecting other people and being courteous. For instance, in baseball or softball, the batter can't fling the bat after hitting the ball and heading for first base. He or she must drop it so that it doesn't hit anyone. Likewise, a diver would make sure that the pool was clear before diving in. Otherwise, he or she might land on someone else. One way you can watch out for others is to communicate on the field. For instance, a baseball player in the outfield might yell "I got it" to avoid a collision with another outfielder. Listening to your coach during a game also can help keep you safe. It's also good to just be courteous, like telling someone his or her shoe is untied. Check your shoes, too!

Don't play when you're injured

This is a really important one. If you love sports, it's tempting to get right back in the game, even after an injury. But playing when you're hurt — or before an injury has had a chance to fully heal — is a bad idea. It can lead to an even worse injury, one that might sideline you for a long time. Be honest with parents and coaches if you've been hurt. See a doctor for your injuries, when necessary, and follow his or her advice about how and when to return to practice and play. Now you know what kids need to know about staying safe. Hopefully, if you follow rules 1, 2, 3, and 4, you won't need number 5. Or at least not quite as often!

Strength and Conditioning

Strength training in athletics is common practice today. The benefits are obvious and the immediate crossover of those benefits to the playing field makes it ideal for off-season conditioning. Injury prevention however, is one benefit that is often overlooked. Strength training is a very effective tool for injury prevention for a variety of reasons.

Strength training improves the strength of the muscles, tendons, and even the ligaments and bones. The stronger muscles and tendons help hold the body in proper alignment and protect the bones and joints when moving or under impact. The bones become stronger due to the overload placed on them during training and the ligaments become more flexible and better at absorbing the shock applied to them during dynamic movements.

When an area of the body is used less during an activity it may become weak compared to other areas. This can become a problem when that area (whether a muscle, ligament, joint, or specific bone) is called into play suddenly during an activity. That area cannot handle the sudden stress placed on it and an injury occurs. Strength training, using a balanced program, will eliminate these weak areas and balance the body for the activities it is called to do.

Muscle imbalances are one of the most common causes of injuries in athletics. When one muscle, or muscle group, becomes stronger than its opposing group, the weaker muscles become fatigued quicker and more susceptible to injury. A forceful contraction, near maximal output from the stronger muscle can also cause damage to the weaker opposing muscle due to the inability to counter the force.

Muscle imbalances also affect the joints and bones due to an abnormal pull causing the joint to move in an unnatural pattern. The stronger muscles will cause the joint to pull in that direction causing a stretching of the opposing ligaments and a tightening of the supporting ones. These can lead to chronic pain and an unnatural wearing of the bones. A balanced strength training program will help to counter these effects by strengthening the weaker muscles to balance them with their counterparts.

References

1. Aaltonen S, Karjalainen H, Heinonen A, Parkkari J, Kujala UM. Prevention of sports injuries. Systematic review of randomized controlled trials. *Arch Intern Med* 2007; 167:1585-92.
2. Abernathy L, Bleakley C. Strategies to prevent injury in adolescent sport: a systematic review. *Br J Sports Med* 2007; 41:627-38.
3. Amoroso PJ, Ryan JB, Bickley B, Leitschuh P, Taylor DC, Jones BH. Braced for impact: reducing military paratroopers' ankle sprains using outside-the-boot braces. *J Trauma*. 1998; 45:575-80.

4. Arnason A, Engebretsen L, Bahr R. No effect of a video-based awareness program on the rate of soccer injuries. *Am J Sports Med*. 2005; 33:77-84.
5. Askling C, Karlsson J, Thorstensson A. Hamstring injury occurrence in elite soccer players after preseason strength training with eccentric overload. *Scand J Med Sci Sports* 2003; 13:244-50.