San Diego exercise physiologist offers tips for reducing risk of sports injuries

BY MINDY MAR, D.C.

Millions of people in the United States participate in sports and athletic activities every day. Sports activities and exercise often result in injuries involving soft tissues (muscles, tendons and ligaments), bones and joints.

WOMEN & INJURIES

Research indicates characteristics of the female body that can lend itself to an increased risk of injury in sports and exercise. Ratios of upper body versus lower leg strength in females are often unbalanced and both body alignment and growth factors contribute to the risk of injury.

Women participate more often in sports requiring an upright stance such as soccer, basketball, dance and cheerleading. Females have a tendency to land with their knees in a locked position and flat feet, which adds pressure on the ligaments and soft tissue that holds the joints together. Acute injuries often result from trauma, such as landing on an uneven surface or contact with another player or object.

Females are at a greater risk of injury — specifically to the anterior cruciate ligament (ACL) knee tears — than male athletes by a ratio of 6-to-1. Females are also two to eight times more likely to sustain non-contact injuries to their ACL. The ACL is susceptible to sprains and tears in sports that involve jumps, landing, twists, pivots and sudden stops. The American Journal of Sports Medicine featured an article referencing NCAA women’s basketball players as four times more likely to tear their ACLs than their male counterparts.

Women’s ligaments have more laxity, therefore excessive joint motion combined with increased flexibility can be considered a significant factor in increased knee injuries.

COMMON INJURIES

Acute injuries are difficult to prevent as they are usually related to accidental trauma. However proper strength and balance training can help reduce the risk for ACL tear, which often requires arthroscopic surgery and 6-18 months of rehabilitation. Hamstrings are often weaker and shorter than quadriceps, therefore increasing hamstring strength and improving quadriceps flexibility will reduce the amount of stress being placed on the knee joint. Balance training, as well as exercises that incorporate jumping, bounding, leaping, and rapid changes in direction (plyometric training), have reduced the risk for ACL injury in small studies of young women playing soccer, volleyball, and basketball.

Overuse injuries of the lower extremities may occur more in women than men. Running injuries in females can be correlated to wider hip bones and increased angles between the hip, knee and ankle predisposing women to developing knee, shin, foot and ankle pain. Overuse injuries result from many sources including training errors, increased workout duration or intensity, non-supportive footwear and environmental problems such as running excessively on uneven or hard surfaces.
“Runner’s Knee” is the most common running-related injury. Runner’s knee is essentially an irritation of the cartilage of the kneecap. Pain is notable near the kneecap, especially after sitting for extended periods of time with knees bent or while walking down stairs or downhill. Plantar fasciitis is the most common heel problem caused by strain of the plantar fascia extending from the heel to the toes. The problem tends to occur in flat, flexible feet and in high arched, stiff feet. Swelling is noted at the heel and the pain most noticeable near the heel usually during the first part of the day as the foot flattens during weight bearing or when pushing off with the toes during walking or running.

Shin splints refers to pain occurring in either the front or inside portions of the lower leg. Tenderness extends along the length of the lower leg at either of the surfaces. Those most at risk for shin splints include both athletes and non-athletes who have increased their running activity. To care for shin splints, runners should decrease their training, and begin with ice and rest, later adding strengthening and stretching of their lower leg muscles. Swimming and biking may be used as alternative forms of exercise.

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MINIMIZING RISK

Runners can take several precautions to prevent being sidelined because of an injury. Properly stretching muscles to warm up both before and after a run will help maintain flexibility of the soft tissue and increase circulation. Wearing appropriate running shoe with proper arch support will also help minimize injury as the wrong shoe can worsen biomechanical alignment. Orthotics are often prescribed by sports injury specialists to increase or decrease the arch support throughout the feet.

Increase balance, stability and strength by incorporating an unstable platform, such as a wobble board, into your exercise routine. This develops the muscle and tendons around your ankles and knees and increases proprioception, which improves one’s ability to sense location and movement of various parts of the body. Lastly, do not hesitate to have acute or overuse injury checked out by your doctor or healthcare specialist. Often catching and remedying a minor tweak can prevent a more serious, long-term injury from developing.

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