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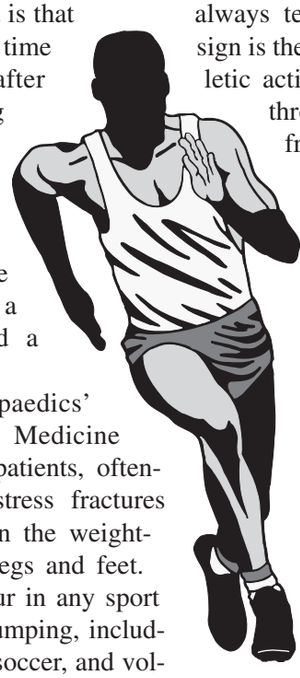
Stress Fractures

By Matthew D. Gimre, M.D.

One of the most common athletic injuries sustained is a stress fracture. Stress fractures are injuries to normal bone that occur with repetitive loading over time, and not due to an acute traumatic injury. There are several theories as to why stress fractures actually develop, but the basic concept is that the bone does not have time to fully repair itself after activity, before being exposed to the stress from that same activity again. Over time, these episodes of repetitive "micro-injury" cause breakdown of bone in a particular location, and a fracture can develop.



As OAD Orthopaedics' Nonsurgical Sports Medicine Specialist, I see many patients, oftentimes runners, whose stress fractures occur most frequently in the weight-bearing bones of their legs and feet. Stress fractures can occur in any sport involving running and jumping, including football, basketball, soccer, and volleyball. Stress fractures in the upper extremities are rare, but can occur, especially with activities such as gymnastics, rowing, and throwing sports.

Know the Risk Factors

Risk factors for developing stress fractures include intense, vigorous training with few or no days of rest; starting a new activity such as running; or increasing the duration or intensity of a given activity too quickly. Young women with eating disorders or irregular menstrual cycles are also more prone to stress fractures. A previous stress fracture is also an independent risk factor, as up to 60% of stress fractures occur in athletes who have had a stress fracture in the past.

Identify Symptoms

Symptoms of a stress fracture include localized bony pain and possibly mild swelling. The injured area is almost always tender to the touch. A telltale sign is the inability to continue with athletic activity – it is difficult to "push through" the pain from a stress fracture, as the pain typically worsens during activity. Stress fractures can also cause pain and limping with regular daily activities.

Diagnosis

Diagnosing a stress fracture is based upon a patient's history of symptoms, an examination of the painful area, and further tests such as x-rays. X-rays are very useful in diagnosing stress fractures and following the progress of healing. However, some stress fractures (especially in the early stages) do not show up on initial x-rays. Other tests, such as a bone scan or an MRI scan, may be needed to diagnose the stress fracture.

Treatment

Stress fracture treatment always requires rest from the sport or activity that caused the injury. The treatment might also require the use of a splint, cast, or walking boot. Frequently, crutches are used until the pain experienced with walking goes away. The duration of treatment depends on the particular bone that is injured and how well the bone heals over time. The length of treatment is typically between four and 12 weeks, but could last longer. OAD's Sports Medicine Specialists typically recommend patients return to activity only after the affected area(s) is pain-free and not tender to the touch, and shows signs of healing on x-rays. Once a patient/athlete is cleared to resume training or sport participation, return to activity should be gradual and pain-free.

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Some stress fractures, unfortunately, do not heal well. Such fractures can include fractures of certain bones (such as the navicular bone in the foot), and fractures in certain locations of the femur (thigh bone) or tibia (shin bone). These stress fractures require close observation and can require more prolonged periods of non-weight bearing. In some circumstances, surgery is required. However, the vast majority of stress fractures do not require surgical intervention.

Preventative Measures

To prevent stress fractures, an athlete should use appropriate footware. Running shoes should be changed every 300 to 500 miles. For some people, orthotic arch supports might be beneficial, and the treating physician can help

with this decision. Athletes should increase the intensity of their training gradually, in addition to paying very close attention to any painful symptoms. Despite these recommendations, stress fractures are not completely preventable and should be considered as a diagnosis in athletes who experience persistent pain with training.

Stay Aware

Increased awareness of stress fracture symptoms and preventative measures can significantly benefit athletes. Since stress fractures are so common and frequently overlooked initially, awareness can result in earlier diagnoses, prompt treatment and a quicker return to activity, and hopefully, prevention of serious injury.

Remember, stress fractures are not the outcome of an acute injury, and their symptoms can gradually worsen over time, so seeking the medical attention of an orthopaedic or sports medicine specialist will yield the best game plan for your timely return to activity.

This article was submitted by Matthew D. Gimre, M.D., OAD Orthopaedics' Fellowship-trained Nonsurgical Sports Medicine Specialist.

OAD Orthopaedics is a twenty-physician multi-subspecialty orthopaedic practice, with convenient office locations in Warrenville, Wheaton, Carol Stream, Naperville, Bartlett, and Winfield. OAD's specialists provide surgical and nonsurgical/conservative expertise in all areas of orthopaedics including shoulder, hip, & knee problems; sports medicine; total joint replacement, reconstruction, & revision; hand/upper extremity; spine and neck conditions; physiatry; foot and ankle/podiatry; and work-related injuries. In addition, on-site diagnostic testing/MRI; physical, industrial, occupational and specialized hand therapy; and industrial/occupational health services are available at OAD Orthopaedics' state-of-the-art facilities. For appointments and information, call (630) 225-BONE (2663) and visit online at www.OADortho.com.