UW Medicine
SPORTS, SPINE & ORTHOPEDIC HEALTH

So I have a stress fracture, now what?

WHAT IS A STRESS FRACTURE?

A stress fracture is a partial or complete fracture (break) of bone that occurs when repeated stress on the bone exceeds its ability to repair itself. Symptoms of a stress fracture include bone pain that increases with weight bearing and repetitive use. Common locations of stress fractures in runners include the tibia (shin bone), metatarsals (long bones of the feet), and the fibula (outside lower leg bone). Other bones of the feet, the femur (thigh bone), and the pelvis can also experience stress fractures.

HOW DID I GET HERE?

Stress fractures are unfortunately quite common in runners. The treatment starts by making the correct diagnosis and then determining why the stress fracture occurred. It is important to make an accurate diagnosis quickly in order to start treatment expeditiously and so you don't worsen the fracture by continuing to attempt running. If you think you may have a stress fracture, you should definitely see your physician to confirm or refute your suspicion and obtain appropriate imaging (xrays and/or an MRI) if necessary.

Stress fractures don't happen in isolation and there are typically several contributing factors. An increase in training frequency, duration, or intensity, running on a different surface than usual (e.g. running on concrete when you typically run on a track), or an "energy imbalance" (ie, not eating enough calories to replace what is used while running regularly) can contribute to a stress fracture. Your internal biomechanics (the way your body is aligned, how it moves, and strength and flexibility imbalances) are additional common factors.

HOW DO I GET BACK TO RUNNING?

Thankfully, stress fractures usually heal well when treated appropriately. Treatment of any stress fracture typically includes two phases: resting from weight-bearing exercise, followed by rehabilitation with an individually-tailored gradual return to running program. Rest can certainly be frustrating and not fit practically into your training goals. Cross-training is useful in maintaining cardiovascular fitness that would otherwise decline during the period of rest. Deep water running and antigravity treadmill training, unlike conventional cross-training with cycling and swimming, are two very running-specific cross-training methods. They are best designed to keep up your running mechanics (using your "running muscles" and not necessarily your "swimming" or "cycling muscles,"), maintain your cardiovascular fitness, and help you get back more efficiently to running on land.

Once you are pain free with walking, pain free with cross training, and have rested for an appropriate length of time for your fracture to be in a healing state that allows you to progressively load it, you can begin your return to land running. If you have been cross-training in the deep end of a pool (deep water running) or on an anti-gravity treadmill, you will more likely be able to advance your land running more quickly since you've been using your "running muscles" during cross-training. While training on an antigravity treadmill, you've also been progressively loading the healing bone in a protected way that facilitates the healing process.

Some general guidelines for returning to land based running include:

1) Starting at a slower pace and sticking to just one third—maximum of one half—of your typical distance.
2) Alternating running days with rest days and/or alternating cross-training with your land based runs, especially during the start back to land running.
3) Increasing weekly mileage by a maximum of 10% per week.

This phase of rehabilitation should ideally include leg, hip/buttock, and core strengthening, flexibility work, and balance training to reduce the risk of stress fracture recurrence. Strength training can also improve running performance and bone mineral density. Your physical therapist or coach can work with you on assessing your running mechanics and suggest changes to reduce impact forces on your legs (potentially increasing your cadence or moving to a mid-foot strike pattern if you are heel striker). Last but not least, make sure you are working with good, comfortable shoes for your feet and consider replacing them every 300-500 miles.

Many factors play a part in the development of stress fractures and as such, treatment should be multifaceted to heal the fracture and prevent future stress fractures. Recognizing, resting, and rehabbing the fracture will allow you to get back to running.

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