THE REHAB ROOM

STRESS FRACTURES

Stressed Out?

Bone stress fractures are micro cracks in our bones that can occur with overuse or overloading our body. Usually bone is constantly remodelled with osteoblast (bone producing cells) and osteoclast (bone reabsorbing cells) activity that is usually balanced. When this balance is disturbed a stress fracture can result.

Usually a stress fracture will result from an increase in intensity, duration or frequency of training or sometimes a change in equipment or training terrain. Poor footwear, lack of recovery and poor sleep can be other contributors. There can also be other influences such as poor biomechanics, poor nutrition or hormonal problems. This is sometimes seen in high level female athletes who train large amounts and have poor nutrition. This leads to anorexia, a lack of estrogen and amenorrhea (absence of periods). The decreased estrogen causes reduced bone density and an increased risk of stress fracture especially in the presence of high training loads.

In runners, stress fractures are seen in the legs. Common bones affected are the tibia (shin), metatarsals and the navicular (foot). Less commonly and more seriously they can also be seen around the pelvis and hip.

Stress fractures are aggravated by weight bearing activity and relieved by rest. They often start as a bone stress reaction (mild stress injury) before progressing to a stress fracture with repetitive load and lack of recovery between exercise bouts. Often increasing pain will stop the athlete before they progress to a full stress fracture. In the early phases bone scan and MRI are the best investigations to identify these injuries. X-Ray generally only shows these issues in the later stages as a small crack may not show early on. Clinically, there is pain upon hopping and tenderness upon touching the injury.

Most stress fractures will get better over 4-6 weeks of rest from loading. Sometimes crutches or cast/boot immobilisation are needed. Swimming and biking can usually be maintained for fitness provided there is no pain. Once there is no pain on hopping and no pain to touch more loading can be introduced such as the stepper, cross trainer and walking. Over time this can be progressed back to jogging and running.

Correct loading and training techniques can generally prevent stress fracture as the body can then adapt to the loads put on it. About 10% total volume increase per week is usually safe. Regular changing of footwear and maintenance of flexibility and strength also helps. Recovery, sleep and a good diet is also necessary.

Happy racing!

David Garrick is an Australian trained titled Sports Physiotherapist working at Physio Central. He has a special interest in lower limb and overuse sporting injuries particularly in runners, triathletes, football codes and skiers.

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