

STRESS FRACTURES

A bone will fracture if it is subjected to stress or trauma that exceeds the bone's critical stress level. This traumatic moment may be a single incident such as the moment when AFL football player Nathan Brown broke his leg.

Stress fractures occur as a consequence of a multitude of minor stresses over a long period of time which causes the bone to fatigue and crack. Such stresses include the over-activity of the muscles of the leg working to control the major movements of the feet and legs. The most common stress fracture that afflicts the foot is that of the long thin bones of the feet - the metatarsals. The most well known example is that of a *March Fracture*, so named because it often afflicts young army recruits who are forced to go on long route marches.



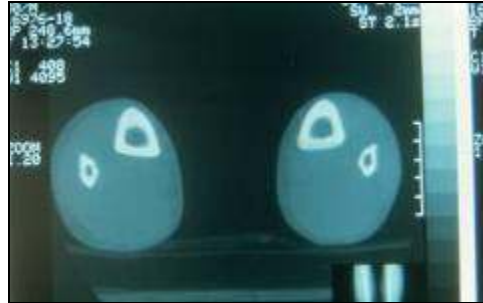
A nasty consequence of a stress fracture of the shaft of the second metatarsal,

Many athletes will develop shin pain (*medial tibial stress syndrome*) which can lead to a stress fracture of the shin bone (tibia) if the pains are ignored and the intensity of training continues unchanged. A warning signal that a bone is under a lot of strain is that the bone is tender to palpate - a condition known as *osteitis* of the bone.



Medial Shin Pain

The density of bone decreases with age, hormonal changes and inactivity - osteoporosis can be the result. Thus, for a person with osteoporosis, the activity that causes the bone to fatigue and fracture may be merely the repeated activity that causes the bone to fatigue may be merely the normal activities of daily living.



Bone scan and a CT scan of a tibial stress fracture

Stress fractures generally heal if the load which leads to the fracture is reduced for 6-8 weeks, by rest, crutches and a walking brace. A podiatrist may reduce this load with the use of an orthotic device that has been designed to deflect the pressures of weight bearing away from the injured bone and onto a stronger part of the foot. *Relative rest* - in which the load on the injured part of your foot is reduced even though you can generally remain on your feet to help retain you retain a level of fitness whilst you recover – is the goal of podiatric care of stress fractures and stress reactions.