WHAT IS IT?
Problems with the mechanics of the feet can put extra strain on structures higher up in the body, and lead to injuries such as foot pain, shin splints, knee pain, hip pain or lower back pain.
Biomechanical problems of the feet include fallen arches, over-pronation or supination.
There may be several reasons for a person to develop these problems, this includes weakness in the muscles of the hip or knee, or tightness in some of the joints or muscles of the lower limb altering the way you walk or run. Poor footwear can also be a cause.
Excessive pronation is the most common cause of running injury. A pronated foot rolls inwards at the ankle, the mid-foot bulges inwards and the longitudinal arch flattens. Those who over-pronate generally have very flexible and unstable feet.
A supinated foot rolls outwards at the ankle and has a high arch. They tend to be more rigid and are very poor at absorbing shock.

SIGNS AND SYMPTOMS
» Hip pain
» Knee pain
» Leg cramps and fatigue
» Ankle pain
» Weak ankles
» Lower back pain
» Tripping
» Foot cramps
» Achilles pain
» Arch pain
» Heel pain
» Callous (hard skin)
» Pain during or after walking / running
» Shin splints (pain in the front and inside of shin)

MECHANISM OF INJURY
A low arch, or flat foot, typically occurs when the foot is excessively pronated, turning it inward. A high arch can supinate the foot, rolling it outward. Both of these structural variations can cause knee, hip, and back pain. When one arch flattens more than the other, the inside of the foot and inner ankle move closer to the ground, the knee and hip then rotate inward, placing stress on different muscles and structures surrounding the knee, hip and lower back and causing pain in these areas. Pain is experienced especially during walking and running.

TREATMENT & MANAGEMENT
Treatment includes gait analysis, orthotic devices, shoe modifications and physiotherapy.
A gait analysis is a detailed look at how you walk and how your foot moves and positions while you walk. There is a vast amount of information that we can determine from analysing how you walk. The mechanisms by which the foot loads can affect the rest of the body.
By looking at your feet we are able to better understand why a person may be suffering recurrent shin splints, knee or hip pain. If a person’s feet are sore first thing in the morning or they have pain while walking on the balls of their feet, analysing the feet using such equipment as GaitScan™, will tell your physiotherapist why these things are likely to be occurring.
The best solution to counter problems with the feet is orthotics.
Biomechanical problems of the foot can be effectively treated with orthotics (special insoles) that provide biomechanical support and help feet to function more efficiently. The most effective orthotics are those which are custom made to fit your foot, but in some cases non-prescription heat moulded orthotics or insoles can be used.

SELF-MANAGEMENT
Follow the exercise program given by your physiotherapist to strengthen any weak muscles in your lower limbs that also might be contributing to your problem. Combine this with correct use of orthotics to help quicken your recovery and maintain it.