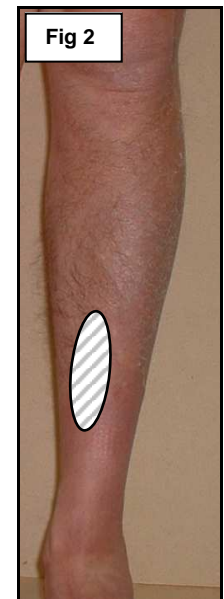




## CASE STUDY - *For more details contact Nick Dinsdale as above.*

|                            |  |
|----------------------------|--|
| <b>Name of Patient:</b>    | Male   |
| <b>Age:</b>                | 66 years old   |
| <b>Sport / Occupation:</b> | Mountain & Fell Walker   |
| <b>Level of Activity:</b>  | 2 - 3 x weekly   |
| <b>Condition:</b>          | 'Shin Splints' (Tibial stress syndrome) – pain & inflammation on medial border of tibia bone |

### PITTING OEDEMA – persistent indent in shin following finger pressure (April 2005)



Shin Splints

**Definition:**

'*Shin Splints*' (tibial stress syndrome) is a generalised term for pain and inflammation on the medial border of the tibia bone, approximately one third from the distal end – Fig 2. Pain and swelling on the front and inside of the shin bone just below half way down (shaded area). (3)

**Symptoms:**

The patient will complain of stiffness, tenderness and sometimes throbbing pain along the border of the tibia (shin), approximately half way to two thirds of the way down the tibia shaft - several inches above the ankle. The area is very tender and delicate to the touch. The condition is distinctly worse following specific activity such as running or long distance walking. Often the problem starts with a dull ache and quickly becomes sharper and more severe with continued exercise. The condition is frequently found in long distance runners and walkers; it is often associated with 'overuse' and biomechanical dysfunction of the lower limb. (3)

Often '*pitting oedema*' is present and clearly visible if tested for. Oedema and swelling are caused by an excess of tissue fluid following injury / trauma and the subsequent inflammatory response. If the oedema is subcutaneous, the affected area shows '*pitting*'; i.e. if the skin is indented firmly with the fingers, an impression of the finger is left on the surface – Fig 1. There is, therefore, usually little difficulty in diagnosing oedema. (1), (2)

**Biomechanical aetiology / cause:**

Excessive subtalar joint pronation and internal tibial rotation increase the medial tractional forces, particularly on the Posterior Tibialis muscle. The condition is associated with excessive stretching and tension (traction) of the soft tissues along the tibia (shin) bone. If not treated early, the condition often becomes '*chronic*'. Frequently, problems arise when there is a combination of poor foot biomechanics combined with increased training loads – resulting in the tissues being overstressed and breaking down - 'overuse' (3)

**Treatment:**

Correct the foot biomechanics by introducing customised orthotics to reduce and control subtalar joint pronation. This will reduce internal tibial rotation and reduce the tensile / tractional forces on the Posterior Tibialis muscle. Specific tibial muscle stretching and strengthening exercises may be required in some cases. Applications of Ice Therapy during the acute stage, with rest from exercise to enable the tissues to recover and repair. (3)

**References:**

1. Cameron MH, 2003: Physical Agents in rehabilitation- From Research to Practice. Pages 343 – 344.
2. Underwood JCE, 2000: General and Systematic Pathology, 3<sup>rd</sup> Edition. Pages 133-4.
3. [www.Vasyli.com](http://www.Vasyli.com) – Lower Limb Biomechanics and Biomechanical Complaints