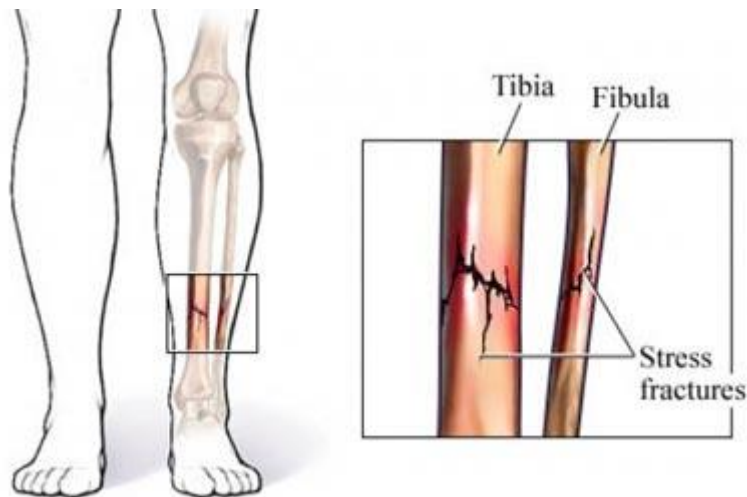


SOUTHPORT PHYSIOTHERAPY CENTRE

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Stress fractures

Stress fractures are a partial or complete fracture of bone as a result of repetitive sub-maximal loading. Stress fractures occur when the loading frequency is high enough such that the rate of bone resorption exceeds the rate of bone formation (eg excessive running



volume and inadequate recovery time). This can result in weakening of the bone and eventually fracture of the bone can occur.

Stress fractures are most likely to occur in the early stages of training (eg first 40 days) or when training volume is significantly increased.

Stress fractures are more prevalent in sports which involve running and jumping. The majority of stress fractures occur in the lower extremity.

Risk factors for stress fractures:

- An abrupt increase in training or intensity
- Inadequate recovery time.
- Running volume more than 32km per week.
- Previous history of stress fracture
- Leg length discrepancy
- Low bone density
- Inadequate muscle strength.
- Inadequate muscle endurance (muscle fatigue)

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Some ways of preventing stress fractures:

- High intensity **resistance training** (low repetitions, heavy weight) to increase bone mineral density- include weight bearing exercises.
- Cushioned or shock absorbing insoles (especially if you are a heel strike-type of runner)
- **Reduce stride length** (if you are an over-striding runner) to reduce stress on the tibia.
- Limit weekly increases in training volume to **no more than 10%** per week
- **Every 4th week-** reduce training volume to allow for recovery
- Avoid running more than **32 km per week**
- Increase the **strength and endurance** of toe flexors (especially eccentric strength), calf, tibialis anterior and posterior and balance.

Your physio can devise an individual program to address these issues. We manage these problems with a variety of techniques and exercises to ensure that you can return to your 'best you'. A thorough history and assessment should be taken to determine a full comprehensive program.