

# Muscle

# Strains



OVENS VALLEY  
**PHYSIO & PILATES**

- Muscle strains and tears occur when the muscle fibres are **forcefully contracted beyond their capacity**, often when also **under stretch**
- They are most common in sports with rapid acceleration and deceleration
- The strain can occur in the muscle, muscle-tendon junction (MTJ) or tendon and can vary in severity

What to do **FIRST** if I have strained my muscle?

- The first step is to **minimise the swelling and bleeding** into the muscle in the first 48 hours by:
  - **Relative rest**, don't keep playing, you can walk if it is comfortable, otherwise you may need crutches initially to offload the area
  - **Icing the area** for up to 20 minutes at a time each hour, make sure you wrap the ice in a wet tea towel for better conduction without giving yourself an ice burn
  - **Compress the area** with a compression bandage or coban tape, make sure it is comfortable and not too tight
  - **Elevate the area**, ideally so the injured area is above the heart, this would mean lying flat with the leg elevated lower limb muscle injuries
  - **Avoid alcohol, heat and massage** as they all increase blood flow to the area
  - **Avoid anti-inflammatory medication** as it has been shown to reduce healing in muscle strains
- **Review with a physiotherapist** after 48 hours so that they can
  - Asses the grade of the injury
  - Start you on your rehabilitation program
  - Request scans if necessary

## How bad is my muscle strain?

Grade	classification	symptoms	MRI	Recovery
0 (muscle soreness)	A. Focal neuromuscular injury B. . generalised muscle soreness	Focal muscle soreness  Generalised muscle soreness	A. Negative B. negative	1 week
1 (small tears)	A. fascia <10% x- sectional area B. .muscle or MTJ <10% x-sectional area	No reduction in range /length of muscle  Some muscle soreness	A. Hematoma B. Hematoma	2-3 weeks
2 (Moderate Tears)	A. Fascia 0-50% x-sectional area B. Muscle or MTJ 10-50% X-sectional area C. Tendon <50% x-sectional area	Loss in range/ length of muscle  Loss of strength in muscle	A. Peripheral high signal B. High signal at MTJ C. High signal at tendon	3-6 weeks
3 (extensive tears)	A. Fascia >50% x-sectional area B. Muscle to MTJ >50% x-sectional area C. Tendon >50% x-sectional area	Loss in range/ length of muscle  Loss of strength in muscle  Sudden onset, fall to ground	A. Peripheral high signal B. High signal at MTJ C. High signal at tendon	8-12 weeks
4 (complete disruption)	A. Complete extension from fascia B. Complete muscle or MTJ C. Complete tendon	Sudden onset, fall to ground  Palpable defect/gap	A. Peripheral defect B. Defect at MTJ C. Defect at tendon	>12 weeks

## What do I need to do before I return to sport?

Recurrence rates of muscle strains in sport is high and one of the **biggest risk factors for injury is previous injury**. To minimise this risk it is essential to complete **a full and comprehensive rehab** specific to your sporting demands. This includes:

- Gradually loading up the muscle and restoring full range of movement in the early phases
- Building on that strength to improve both **eccentric and concentric strength** to be better than pre injury levels
- Completing a tailored strength program **targeting complementary muscles** that help support the injured muscle
- Progressively working towards **power and plyometric training**
- Resuming sport specific activities and **building up load tolerance and training volume**
- Return to **higher level sport specific activities** that challenge the injured muscle (eg. sprinting)
- Resume **full training** before returning to full competition