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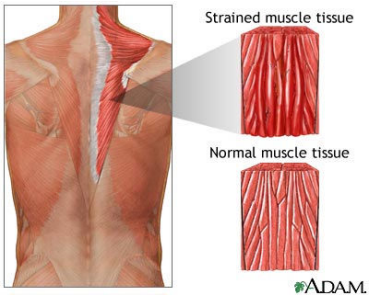
Muscle Strains

A strain, sometimes referred to as a pulled muscle, is a muscle injury produced by excessive tensile stress that causes fibers to tear within the tissue. A muscle strain does not usually result from excess stretch alone, but from a combination of tension and contraction.

Muscles that are vulnerable to strain cross two joints, such as the hamstrings, quadriceps and calf muscles. A muscle is most likely to get injured during sudden acceleration or deceleration when the muscle is either stretched passively or activated during stretch.

Muscle damage can be in the form of tearing (part or all) of the muscle fibers and the tendons attached to the muscle. The tearing of the muscle can also damage small blood vessels, causing local bleeding (bruising) and pain (caused by irritation of the nerve endings in the area).

Muscle strains are classified in three grades:

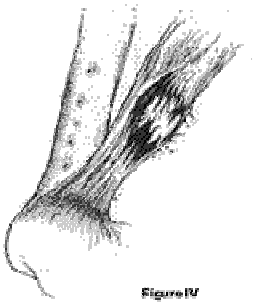


Grade I

- Involves a small number of muscle fibers being torn
- Presence of localized pain but no loss of strength
- Quick return to sport in 7 to 14 days

Grade II

- Tear of a significant number of muscle fibers
- Greater level of pain and swelling
- Pain reproduced when the muscle contracts
- Return to sport in 2 to 6 weeks



Grade III

- Involves a complete rupture of the muscle-tendon unit
- Some strains are classified as third degree even though the muscle still has some fibers intact because the damage is extensive.
- There is likely significant pain at the time of the injury. Pain can be minimal afterwards, because the ends of the muscle are separated and limb movement does not cause additional tensile stress
- Generally requires surgical repair

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Management

Initial management (within the first 48 hours) involves;

- Unloading the damaged tissue for several weeks to provide the body time to heal
- Icing the injury for 10-15 minutes every 1-2 hours
- Starting on a pain-free active ROM exercise program as soon as possible
- Simple analgesics (e.g. paracetamol) in the first 48 hours for pain relief.

Physiotherapy management;

- Soft tissue therapy is a primary goal of treatment to reduce tension in the adjacent muscles, to help develop a functional scar at the site of tearing and prevent scar tissue from adversely binding adjacent fibers.
- Manual Therapy to address reduced mobility in adjacent joints
- Stretching focusing on the affected area to regain normal muscle length
- Functional strengthening to regain muscle bulk, recruitment and assisting in the recovery and prevention of recurrence.
- Core stability program consisting of progressive agility and stabilization exercises to promote return to sport and preventing injury recurrence.

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