

# Tendinopathy

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## In-Season Physical Management of Athletes

Tendinopathy is a challenging condition to manage, even in the recreational setting. It is particularly problematic in a competitive athlete whose season is underway. Load management, a crucial aspect of rehab, becomes very difficult, and the athlete is unlikely to agree to much down-time. It is therefore unlikely the condition will recover fully over this time.

### Features of Tendinopathy

Pain arising from a diseased tendon is generally quite characteristic. It will be localized, but may refer when there is an involved bursa, fat pad, or when the muscles around the region become tender. Pain is load dependent – increasing with greater load. However the latency period is short – pain settles quickly when the load is removed. For this reason, rest and night pain are uncommon features of tendon pain, unless there is an acute exacerbation (a reactive tendon) or where the disease is associated with an inflammatory arthropathy.

There are three known stages of tendinopathy, and often a continuum from one stage to the next:

1. Reactive: there is an acute response to tensile or compressive overload, with proliferation of repair cells, particularly proteoglycans. There is an increase in bound water within the matrix, leading to thickening and acute pain.
2. Dysrepair: there is greater matrix breakdown, and production of proteoglycans and collagen.
3. Degenerative: the end-stage of the disease – large areas of disorganized matrix, and reduced collagen density, leading to an often thickened but weakened tendon.

There may be overlap between different stages. For instance, an athlete with a degenerative tendon may present with an acute reactive tendinopathy after a sudden increase in training load.

### Risk factors

- Athletes with better ability to store & release energy, i.e. those that can jump further & react quicker, tend to be more prone to developing tendinopathy.
- Genetic factors seem to play a role.
- Males are at twice the risk, however the incidence for females increases with menopause.
- Biomechanical factors
- Previous adverse load history.

### Management

Pain is the critical factor in determining how much load a tendon can bear. Imaging studies have shown that the incidence of abnormal but painless tendons is very high in the athletic population. A diseased tendon without pain can still bear relatively normal load. Pain however, inhibits the tendon's ability to store energy. If there is a combination of pain and advanced pathology, the risk of further damage to healthy tissues is greater, and the athlete may be forced to take a break from competition. A reactive tendon needs a short period of rest and a gradual reintroduction of load. In many cases an acute flare-up can settle very quickly, with little time lost from sport.

In general, there are several considerations when managing loads on the tendon in season:

1. Avoidance of sudden increase in total load - either accumulated small overloads, or excessive tensile load.
2. Care with eccentric loading, particularly on top of an overall high training load.
3. Avoidance of compressive loads – including a reduction in outer range strengthening.

4. Reduction or avoidance of stretching.
5. Use of inner range isometric exercise is often beneficial, particularly when re-loading the reactive tendon.
6. Progressive strengthening includes kinetic chain regimes to improve overall efficiency of movement and better load-sharing across tissues.
7. Ensuring proper biomechanics to minimise stress on load-bearing tissues.

**References:**

Bruckner, P & Khan, K (2012). Clinical Sports Medicine, 4<sup>th</sup> ed. McGraw Hill, Sydney.  
Cook, J & Purdam, C (2014). The challenge of managing tendinopathy in competing athletes. British Journal of Sports Medicine, 48, 4, 506-509.

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