



## Getting to Grips with Tendons

Tendons transmit the force created by a muscle onto the attachment point on the bone to allow movement or to control movement (e.g. holding). They are tough bands that lack a good blood supply, and are therefore reacting adversely, often with inflammation and pain, to intrinsic (within the body) and extrinsic (from outside, in this case loading) factors.

Intrinsic factors depend on the individual: increasing age, mal-nutrition, tension in proximal large muscle groups, previous injuries and prolonged rest phases, and hypermobility of joints all can adversely affect tendon health. Illnesses which compromise a healthy circulation like diabetes or peripheral vascular disease, and taking certain statins can also contribute to poor tendon resilience.

Extrinsic factors like increased exposure either by repetition, time or required strength, or static exposure for long duration without breaks, precision movements, working with increased reach or at uncomfortable height- levels can be factors associated with a higher risk of developing tendon complaints.

**Good management focuses on the prevention of tendon overload in manual workers by focusing on the causative factors and finding adequate solutions.**

### Improve the intrinsic factors – for your tendon health:

- Do not smoke or vapor
- Eat well (especially incorporate enough Vitamin C and lean protein into your diet), eat low GI foods
- Allow adequate rest phases through taking micro-breaks regularly at work, for example relaxing the hand and arm whenever possible.
- Avoid further overload of your tendons at home through PC, tablets, phones (break-times);
- Improve your circulation by warm up and cool down exercises, and do specific strengthening exercises
- If you are on statins and have developed tendon pain, speak to your GP about it. Often it helps to change the medication brand; do not stop taking your medication without the advice of your doctor.

### Recommendations to address the extrinsic factors (for the upper limb):

1. Posture: work at a comfortable working height and with good posture which allows the large muscle groups of the neck and shoulders to stay relaxed.
2. Hand and arm position: keep your wrist in neutral, avoid awkward angles and do not strain the tendons over bony prominences for any length of time.
3. Grip: Avoid persistent strong gripping whenever possible or take plenty micro-breaks. Use non-slip gloves to improve grip without holding on too tightly; larger and molded handles are generally better.
4. Use your non-dominant hand as well for tasks which do not require full precision.



## When Tendons are painful:

Tendon pain is often sharp and searing and more pronounced when the relevant muscle or part of the body, is active. This can lead to a loss in strength, simply because of the pain, but it can also lead to an inflammation of the lining of the bone which the tendon attaches into. As this structure is well innervated, the pain can travel like an electric shock deep in the tissue.

Naturally, one tries not to move this part of your body any more in order to avoid the pain.

**Often tendon inflammation is a healing reaction, in response to the increased loading, to make the tendon stronger.**

**So can rest really help?**

It is important to distinguish between tendonitis, tenosynovitis and tendinosis for correct help.

	Appears	Feels	Temperature	Needs	Acute help	Long term
<b>Acute Tendonitis</b>	Swollen, red and thickened	Sharp and burning, also at rest	Feels hot	Ice 5 mins 3x/day Splints can help. Ibuprofen advised for 4 days*	Rest from activity Only static exercise 20 secs hold, 4x/day - once; Minimal stretching	Gradual strengthening and change of technique; Moderate stretches
<b>Tenosynovitis</b>	A swollen band, thickened and creeping	Very sharp when moved, may feel stuck	Feels hot to touch	Ice and splinting, but avoid too tightly fitting straps, shoes etc.; Ibuprofen advised for 4 days*	Rest and static exercise only until swelling subsided, 20 secs hold, 4x/day - once; Minimal stretching	Gradual strengthening and change of technique; adjustments of shoes, clothes if friction caused the problem; Avoid overstretching
<b>Chronic Tendinosis</b>	normal	Dull ache or sharp and travelling pain with activity or when pressed	Feels normal to touch	Ice and heat in alternation can help, or just heat	Slow release exercises against mild resistance 8 secs, rest 4 secs, ca 15 reps; 2x/day for two months; Very gentle stretching after exercising	Progress to slow return exercises when pain has subsided for 3x/week with increasing loading; Moderate stretching

\***Non-steroidal-anti-inflammatory drugs** can help to speed the recovery of **acute tendonitis** by blocking the cells which dismantle the injured tendon material, and sometimes also attack too much tissue. Application of gel has fewer side effects than oral administration. If in doubt seek your doctor's advice and read the label carefully before you take them.

Avoid gel and tablets if you are allergic to aspirin and related drugs; use with caution if you suffer from asthma