

Hamstring Tendinopathy FAQs

What is this document?

This provides information to patients on proximal hamstring tendinopathies. Proximal means the part of the hamstring tendon that attaches to the ischial bone in the pelvis. 'Tendinopathy' describes degeneration of the tendon which usually causes pain without any particular episode of injury.

These are also known as 'high' hamstring problems. Many terms, including 'tendinitis'; 'tendonosis'; 'chronic tendonitis'; and 'tendon degeneration' are used interchangeably with 'tendinopathy'.

The separate document 'Hamstring Tendon Tears FAQs' describes complete tears or bone avulsions, usually from a distinct injury or event, which are usually treated differently.

How is hamstring tendinopathy diagnosed?

Usually patients complain of pain in one or both buttocks after sport. With time the pain becomes more constant, and it often becomes uncomfortable to sit.

Physical examination by the doctor often shows:

1. A positive 'boot test' – there is pain pulling off a boot or shoe by using the toes of the other foot to hold the heel of the boot on the ground while one pulls one's foot¹.
2. Tenderness of the tendon in the buttock.
3. Pain on resisted hamstring contraction.

X-ray is usually normal.

MRI often shows signal changes in the tendon, though these can appear in 'normal' people. More specific findings are swelling of the tendon and fluid surrounding it, though these can also occur sometimes in 'normal' people². Sometimes the MRI shows that the tendon has torn internally or has partially come away from its normal attachment to the ischial bone.

What is the treatment of hamstring tendinopathy?

Physiotherapy

Many runners and other athletes with hamstring tendinopathy relatively overuse their hamstring muscles relative to their gluteal (buttock) muscles.

For runners, a video running assessment (using a computer to measure slow motion and still images) on the treadmill, performed by a specially trained physiotherapist, is very helpful. In many cases this confirms the imbalance between hamstrings and gluteal muscles, which can be improved by core strengthening exercises,

appropriate stretches, and changes in running technique – in some cases shortening stride length, in most cases attempting to ‘push’ with the gluteal muscles rather than ‘pull’ with the hamstrings.

Platelet Rich Plasma

Platelet Rich Plasma (PRP) injections seem to be helpful. I say ‘seems to’, because there is no gold-standard scientific evidence, but there is one very small retrospective study in proximal hamstring injuries³ and much anecdotal evidence.

PRP is made by taking a small amount of the patient’s blood (just like a regular blood test), centrifuging it for about 10 minutes to separate it, and collecting the plasma that sits just above the red cells. This contains the platelets: the blood cells which repair injuries by releasing growth factors. The PRP is injected around the tendon. The procedure is safe, quick (about 15 minutes total) and fairly inexpensive. It can be performed during a regular office visit to asia medical specialists’ main office in Central, where we have a PRP centrifuge. One can carry on with normal life immediately afterwards. The injection can be repeated as often and as frequently as necessary – although we don’t really know what ‘necessary’ means in this context.

My belief is that this treatment is most effective in the relatively early stages, when the tendon still has the ability to heal itself.

Tenocyte injection

‘Tenocyte’ means ‘tendon cell’. Tenocytes live inside the tendon and produce the tendon collagen. It is possible to take a tiny piece of tendon (usually from the patellar tendon of the knee, under local anaesthetic, with a needle) and, over 4 -5 weeks, grow millions of new tenocytes in the laboratory. The new tenocytes are then injected into the area of tendinopathy, where they renew the tendon by making new collagen.

This is similar to ‘stem cell’ treatment. Stem cells are special cells that have the ability to grow into different kinds of adult cells. If one were to place stem cells into a tendon, they would grow into tenocytes.

This is a new treatment, with little data, however we know that the technique of reimplanting one’s own adult cells in this way is safe, as it has been used for years in cartilage cells (in a procedure known as ‘autologous chondrocyte implantation’).

The tenocytes are provided by the Australian company Orthocell (www.orthocell.com.au) and the procedure is called ‘Ortho-ATI’ meaning ‘Autologous Tenocyte Implantation’.

Early studies have shown good results in gluteal tendinopathy⁴, rotator cuff problems⁵ and tennis elbow⁶.

Surgery

If a person has continuing pain despite physiotherapy and PRP or tenocyte injections, a small operation to repair the damage to the tendon usually solves the problem⁷⁻⁹.

The operation is performed through a 6 – 8 cm incision hidden in the skin crease below the buttock. The tendon is detached from the bone, damaged tendon removed, and healthy tendon repaired back to the bone with Kevlar stitches.

Are there any other treatments?

Yes – lots! But the treatments listed above are the ones I believe are most effective.

References

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