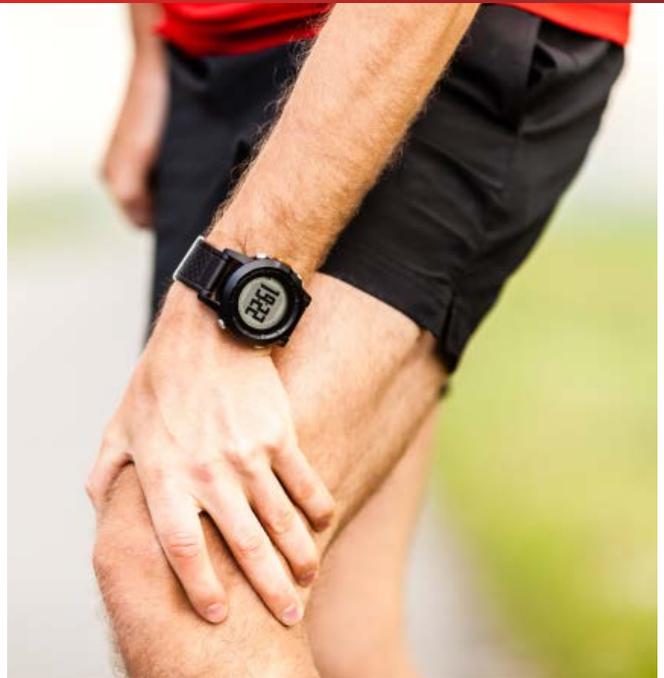


# PATELLA TENDIOPATHY

Patellar tendinopathy is a common cause of pain at the front of the knee. It is most frequently in males aged 15-30. It may be caused by increasing activity too quickly, which then overloads the tendon.

It especially occurs with repetitive jumping and explosive running sports where the load on the tendon is very high. This is why it is often called “jumpers knee” and is seen in sports such as volleyball, basketball and netball.

With a good exercise program most cases can be managed without needing injections or surgery.



## ANATOMY

The quadriceps muscles at the front of the thigh attach to the patella via the quadriceps tendon [see figure 1].

The patellar tendon attaches the patella to the shin bone [tibia] at the tibial tubercle. These structures form the “quadriceps mechanism” which powers the knee into a straight position [knee extension]. This is clearly vital for most activities including walking, running, squatting, climbing stairs and jumping. Patellar tendinopathy is inflammation of the patellar tendon.

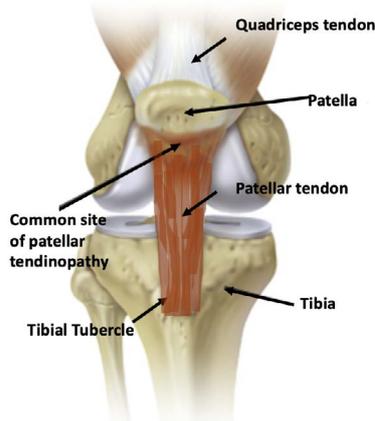


figure 1

## WHAT'S THE TENDON PROBLEM?

Inflammation is NOT usually present -so the term “tendinitis” (meaning tendon inflammation) is best avoided. Most tendon pathology is really tendinosis which is a non-inflammatory degenerative wear and tear process.

The cause of tendinosis is repetitive stress overload of the tendon leading to a reactive or degenerative tendinopathy.

Reactive tendinopathy is due to repetitive overload of a normal tendon as occurs in a sudden change in activity.

Degenerative tendinopathy occurs when there is repetitive loading of an already worn, aged or damaged tendon.

## PHASES OF TENDINOPATHY

In normal circumstances the tendon will adapt to stress. If the load increase is too rapidly a reactive tendinopathy may occur leading to symptoms. With correct treatment adaptation and recovery will occur.

If the repetitive injury rate exceeds the tendon repair rate a state of tendon disrepair will occur.

Treatment needs to allow repair processes to prevail or a degenerative tendinopathy will develop where tendon cell death then occurs.

Unchecked this can lead to tendon tears or ruptures.

# PATELLA TENDIOPATHY

## CONTRIBUTING FACTORS

- > Repetitive stress overload of the tendon – this is commonly doing ‘too much too quickly’. Activities which involve repetitive jumping are common culprits such as basketball or volleyball.
- > Tightness or muscle imbalances in the quadriceps, hamstring, and gluteal muscles.
- > Ankle stiffness and abnormal foot biomechanics.
- > Previous surgery involving the patellar tendon (e.g ACL reconstruction).
- > More common in males than females.

## SIGNS AND SYMPTOMS

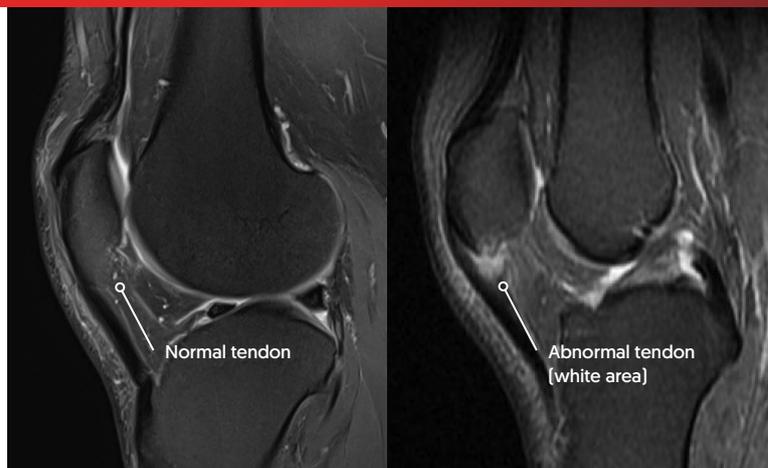
- > Anterior knee pain: usually just at the bottom of the patella.
- > Pain worse with jumping, landing, running, stairs and steps.
- > Pain of gradual onset made worse with intense activity.
- > Pain well localized to the top of the patella tendon.
- > Pain and stiffness in the region first thing in the morning after getting up from bed.
- > Less common is swelling or thickening of the tendon region.

## OTHER TREATMENTS

**Rest and Activity Modification:** to avoid the repetitive overload.

**Iontophoresis:** a specialized technique to administer cortisone to the region without injection (cortisone injections are not recommended as may weaken the tendon and promote a rupture).

**Platelet Rich Plasma Injections:** a special type of injection using a fractionated part of the patients own blood products.



MRI of normal patella tendon on left and patella tendinopathy on right

## INVESTIGATION

**Xray:** usually normal, but help exclude other diagnoses.

**Ultrasound:** can demonstrate tendon tears and tendon degeneration.

**MRI:** most accurate investigation that will also show the area of tendon affected AND help exclude other causes of knee pain (see MRI example above).

## PHYSIOTHERAPY TREATMENT

Good physical therapy is usually the key to treatment and involves stretching and strengthening, particularly eccentric quadriceps loading.

## SURGERY

Only used if difficult cases where the other treatments have been tried and failed over a period of many months.

Using arthroscopic techniques (“keyhole surgery”) the degenerated tendon area can be removed. Usually a very small area of bone is removed from the patella to aid in the healing process.

### CITY

Calvary Adelaide Hospital  
Tenancy Building  
Ground Floor  
120 Angas Street Adelaide  
T 8232 5833  
E [medical@wakefieldsports.com.au](mailto:medical@wakefieldsports.com.au)

### NORTH ADELAIDE

Level 1  
Next Gen Memorial Drive  
War Memorial Drive  
North Adelaide  
T 8221 7000  
E [physio@wakefieldsports.com.au](mailto:physio@wakefieldsports.com.au)



WAKEFIELD  
SPORTS + EXERCISE MEDICINE CLINIC