

# Information and opinions supplied by the staff at **UP and RUNNING (Sports Injury Clinics) Ltd**

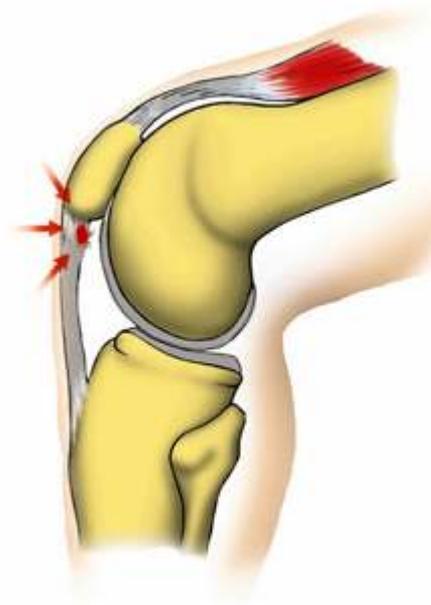
## Article 4. Jumper's Knee

### What is it?

Patella tendinopathy, also known as jumper's knee, is a relatively common condition that causes pain in the anterior (front) aspect of the knee. This pain is usually of a sharp nature and occurs when overloading the extensor mechanism. 2. 9. 12. The extensor mechanism, which includes the quadriceps muscles, the patella and patella tendon, connects the quadriceps muscles to the patella (kneecap) and then on to the tibia (shin) via the patella tendon. 1. 8. 14.

Patella tendinopathy begins as tugging of the patella tendon where it attaches to the inferior pole of the patella that causes tearing or degeneration of the tendon. 3. 5. 10. 13.

(Rehband, 2013)



### What causes it?

Jumper's knee is an overuse injury that results from repetitive overloading of the extensor mechanism of the knee. Micro-tears to the patellar tendon often exceed the body's ability to heal the area unless the aggravating activity is stopped for a period of time. 2. 8. 9. Jumper's knee occurs in many types of athletes but is most common in those participating in sports such as high jump, long jump, netball, basketball, volleyball, or football, all of which require explosive or jumping movements. 6. 7. 10. 12.

Eccentric loading, which is contraction of the muscle while it is lengthening, occurs when landing from a jump or when decelerating. In fact, knee loads of up to 7 times body weight occur in a soccer player during kicking and between 9 and 11 times body weight occurs in netball and volleyball players during landing. These eccentric loads are perhaps the primary cause of overload in jumper's knee. 1. 2. 5. 9. 14.

### Differential Diagnosis - What else could it be?

There are several knee conditions that have symptoms similar to Jumpers Knee and so it is wise to consult an expert such as a Graduate Sports Therapist or a Physiotherapist who has undertaken extensive sports injuries training. The list of differential diagnosis may include the following: 1. 11. 13.

- Patello-Femoral Pain Syndrome
- Meniscal tears
- Fat pad impingement
- Synovial impingement
- Osgood-Schlatters Disease

### How should it be treated?

A good therapist will understand that athletes and sports men and women do not want to stop training; they will want to do something in order to maintain fitness and compete if at all possible. Jumpers Knee is one condition that must be treated with respect. Jumpers Knee rarely gets better unless there is cessation from training or at least the kind of training that caused the injury in the first place. 4. 9. 12. By all means

continue to do forms of exercise, which do not unduly stress the extensor mechanism, but to continue training through the pain is likely to result in serious injury that may require surgical intervention. 1. 2. 5. 10.

Textbooks will often describe Jumpers Knee as an inflammation of the Patella Tendon and may suggest the R.I.C.E. formulae (Rest, Ice, Compression and Elevation) as a treatment however the jury is out on whether or not there is inflammation in tendon injuries. 2. 3. For this reason more recent texts will call these injuries Tendinopathy (a pathological condition) as opposed to some older texts using Tendinitis ('itis' means inflammation) however one cannot go too far wrong by using the RICE formulae when dealing with Jumpers Knee in its early stages.

Over time, and if there are signs of improvement in the condition, gentle stretching of the quadriceps muscles will help to re-align the new collagen fibres that are repairing the tendon into a more linear configuration. Therefore giving the tendon greater tensile strength when it is repaired. Gentle strengthening exercises may also be introduced to stress the new fibres and to begin muscle strengthening of the quadriceps. Care must be taken at this stage not to re-injure the tendon by doing too much too soon. 7. 9. 11. 13. 14.

Again, rehabilitation should be gradual until such time as return to sport is possible. The guidance of a Graduate Sports Therapist would be useful throughout this injury but especially at this stage as sport specific training will be needed to ensure the injury is able once again to withstand sport specific training and competition.

### **The Authors View**

This injury is one that Up and Running Sports Injury Clinics Ltd. [www.upandrunning.org](http://www.upandrunning.org) has encountered on many occasions hence the caution in the treatment regime recommended above.

Tendons heal more slowly than muscles due to the poor vascularisation (blood flow) through tendons. Various treatment modalities have been experimented with to improve the rate of repair including ultrasound, interferential, NSAIDS (non-steroidal anti-inflammatory drugs), corticosteroid injections, shock wave therapy, sclerotherapy, nitric oxide patches, surgery, growth factors, and stem cell treatment.

Since there appears to be little or no inflammation in tendon injuries many of the treatments above have proven not to be effective. The body has the ability to heal itself most of the time so the key to effective treatment of Jumpers Knee is to assist the body to heal itself gradually. Knowing HOW the body heals and assisting in that healing process seems to be the way forward.

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