

## Articular Chondral and Osteochondral injuries

The ends of the long bones in the knee are covered with hyaline cartilage. Damage to this hyaline cartilage is known as a chondral injury or, if the underlying bone is also damaged, it is called an osteochondral injury.

They generally occur in people aged less than 35 years, usually in combination with other ligamentous or meniscal injuries to the knee.

### Mechanism of injury

- Trauma is the most common mechanism
- Rotational force in direct trauma is the most common cause of injury to the articular cartilage. In most cases injury is in weight-bearing regions of articular cartilage and is usually in the medial compartment (four times more common than lateral injuries) and the patellar articular surface.

Articular cartilage has little capacity to repair itself or regenerate. Therefore, cartilage defects repair by forming scar tissue from the subchondral bone. This scar tissue is deficient in type II collagen and has lower load-bearing capacity. This means that you may as the surface deteriorates lead to chronic pain and poor function and may, in some cases, lead to early-onset [osteoarthritis](#).

### Presentation

- Articular cartilage is avascular and aneural, so pain would not be expected; however, some patients do present with pain. It may be present at rest and is exacerbated by weight-bearing exercises.
- The knee may give way if a long-standing injury results in substantial muscle wasting or there is associated ligamentous instability.
- Locking is reported if a loose fragment impedes articular movement.
- There may be an effusion.
- Tenderness is found on palpation of the joint line, with pain induced both by passive and active movements.
- Wasting of the quadriceps will be seen later on.
- Crepitus is palpable on passive joint movement in a usually stable knee.

### Management

Injuries that are new are given time to settle to see if the chondral lesion will become symptomatic or not. If pain fails to resolve after the initial acute phase, surgical treatment gives better outcomes if done sooner rather than later.

### Non Surgical

Physiotherapy, usually aimed at treating symptoms such as pain rather than a cure.

Off loader Brace

Injections

Pain relief

## Surgical

Micro fracture and drilling - are the most commonly used procedures and it is suggested that enhanced micro fracture techniques may offer the best long-term outcomes; however, evidence is lacking. Both are minimally invasive keyhole surgeries that promote bleeding from the bone to create a clot in the cartilage defect. This will then form a tissue similar to cartilage.

Mosaicplasty – is an osteochondral transplant in which tissue is harvested from a less demanding area of the knee to cover a cartilage defect in a more important area.

Allograft – transplantation treatment uses tissue harvested from fresh cadavers to cover the injured area.

Return to the pre-injury level of sports has been found to be fastest after osteoarticular transplantation (OATS) and slowest after autologous chondrocyte implantation (ACI)<sup>[19]</sup>.

## Complications

If symptomatic lesions are untreated they may lead to chronic pain and disability and possible early osteoarthritis.

## Prognosis

Several factors have been associated with improved postoperative recovery

- Defect size of less than 2 cm.
- Pre-operative duration of symptoms of less than 18 months.
- No previous surgical treatment.
- Younger patient age.
- Higher pre-injury level of sports.

However, no consensus exists on the most effective treatment and there are no long-term studies comparing the results of treatment with the natural history of the condition

Refs: Patient Info - [Meniscal Tears and Other Knee Cartilage Injuries](#). Dr Jacqueline Payne, 1/2/2017