

# Arthritic knee solutions

---

**8th April 2014**

**By Doron Sher |**

0 Comments

---

Medial compartment arthritis of the knee causes pain and interferes with the activities of many physiologically young and active patients.

Treatment options for these patients are limited if they wish to stay physically active. Total knee replacement (TKR) is reliable at providing pain relief for these patients but it restricts their work and sporting capabilities considerably.

The main goal of a high tibial osteotomy (HTO) is to realign the leg to decrease the pain associated with arthritis.

In younger patients who wish to remain active, this improves function and slows arthritis progression. Older or less active patients may be satisfied with a TKR.



**PROMOTED**

**Learn about the latest mealtime insulin to be PBS listed**

In the past, unicompartamental knee replacement (UKR) has been used to treat these patients but this has proven to be unsatisfactory. It has created poorer outcomes for these patients in the longer term when they were later converted to a TKR.

Osteotomy of the proximal tibia has been used for more than a century to correct angular deformity in the setting of rickets, poliomyelitis and post-traumatic conditions.

It became popular for the treatment of arthritis in the 1960s and it has always been recognised that the procedure had many limitations. As the results and success of TKR improved, osteotomy became a less popular solution.



X-ray osteotomy and internal fixation.

Perhaps the most important part of achieving success with proximal tibial osteotomy is selection of the appropriate patient. Important aspects of a patient's general history include age, occupation, activity level, and medical and surgical history. Extremely important are the expectations that the patient has for activity postoperatively.

HTO has two principal drawbacks: firstly, it is not an ideal treatment option for patients with significant bicompartamental or tricompartmental disease; and secondly, the results of the procedure progressively deteriorate.

However, unlike a TKR:

1. HTO imposes no permanent activity restrictions.
2. Superior results are more likely, with contemporary fixation not requiring several weeks of postoperative cast immobilisation.
3. The results of a TKR after an HTO are nearly the same as a TKR as the first line of treatment. The difference is that the knee replacement is often performed 10 years later when the patient does not need to be as active any more.

Contraindications include tricompartmental arthritis, severe patellofemoral disease, severely restricted range of motion (extension loss of >15—20 degrees or flexion <90 degrees) and inflammatory arthritis.

Being older than 65 years is probably a contraindication.

### **Radiographic assessment**

The standard assessment includes bilateral anteroposterior weight-bearing radiographs, taken at full extension and 45 degrees flexion and lateral and skyline films of the affected leg (the standard OA knee series).

Single leg standing films from the hip to the ankle are taken to assess knee alignment and calculate the amount of correction required. MRI scans are helpful and are usually performed but are not actually needed for surgical decision-making.

### **Surgery**

An arthroscopy is typically performed at the time of the operation. A small incision is made over the pes anserinus bursa on the proximal medial tibia and an opening wedge osteotomy performed under image intensifier control.

These days it is rare to bone graft the defect as healing rates are excellent (except in smokers). The patient stays in hospital overnight and is discharged the next day on crutches and in a hinged brace.

### **Postoperative care**

For the first six weeks the knee is kept in a range-of-motion brace. During this time the patient remains touch weight-bearing using crutches. From week 6—12 the brace is discontinued and their weight-bearing is increased gradually to full at the end of the six-week period.

From 3—6 months postoperatively the patient is encouraged to progress activities as tolerated.

Unlike after a TKR, the patient may return to running and jumping sports and labouring work.

### **Conclusion**

It is expected that the results of HTO will deteriorate with time and the majority of these patients will end up with a TKR as the rest of their knee becomes arthritic.

Most patients will have had an extra 10 years of high-level activity which a TKR would not have provided.