

Total Knee Arthroplasty (TKA, or Replacement) is a highly successful and popular operation for treatment of the painful knee, achieving reliable and durable relief for the great majority of patients. However, some patients continue to feel uncomfortable, even with an apparently well-aligned joint. It seems that even minor departures from a patient's "natural" alignment, with soft tissues that are too tight or too loose, will produce the feeling of an uncomfortable joint.

This, very reasonably, prompts the question from patients:

## HOW WILL YOU ENSURE MY NEW KNEE IS BALANCED AND COMFORTABLE?



Monitoring joint pressures intra-operatively

Until now, getting the balance of ligaments right has been a matter of "feel" and visual estimation. A new device has become available that allows the surgeon to quantitatively measure pressures generated in the replaced joint in real time, allowing fine adjustments to be made during the operation.

The device is called the Verasense®. It is a plastic bearing surface incorporating micro-electronic pressure sensors (pictured overleaf) which is placed between the metal components of the

knee replacement during the trial phase. It transmits data wirelessly to a receiver which generates a visual display for the surgeon indicating pressures within the joint throughout the full range of movement allowing adjustments to be made before the final prosthesis is implanted.

Research is ongoing, but early results look very exciting. This is certainly the first time surgeons have been able to get real-time feedback on joint pressures which may be the key for patients to improved function and longer lasting joints.

### TECHNICAL DETERMINANTS OF SUCCESSFUL TKA:

- **Correct bony alignment**
- **Ligament balance (tension)**

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## CASE OF THE MONTH

A 72 year old farmer presented with disabling medial knee pain and obvious bowing of his leg. He had suffered a knee injury in an accident decades ago and the joint had never completely “come good” – over many years, a malaligned leg had resulted in completely eroded cartilage on the medial side with a limited range of movement.

### **Challenge: Align knee, restore movement.**

**Solution:** Conventional jigging, planning some intentional varus of the tibial bone resection (to restore proper ligament tension) and making a deeper tibial cut than usual to allow seating of components on host bone (avoiding graft or augments).



#### REFERENCES

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