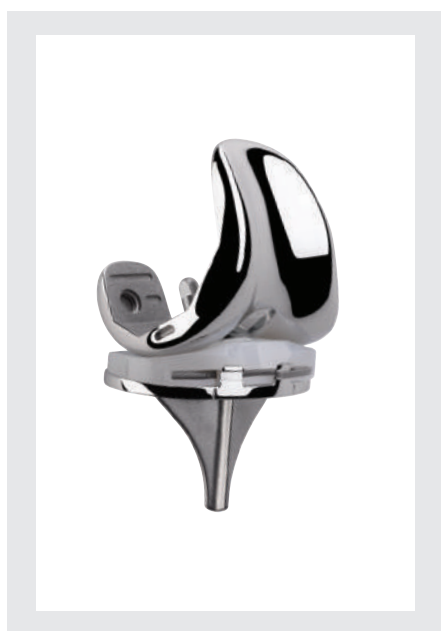


Achieving uniformly excellent results from Total Knee Replacement is proving more difficult to achieve than from Hip Replacement and efforts to improve the operation continue. This difficulty is due to a number of factors, but much depends on implant design. The geometry of the knee is complex and movement is not just that of a simple hinge, with some side-to-side movement and rotation involved as well.

This prompts the Clinically Relevant Question from patients:

“WHAT TYPE OF KNEE WILL I GET?”

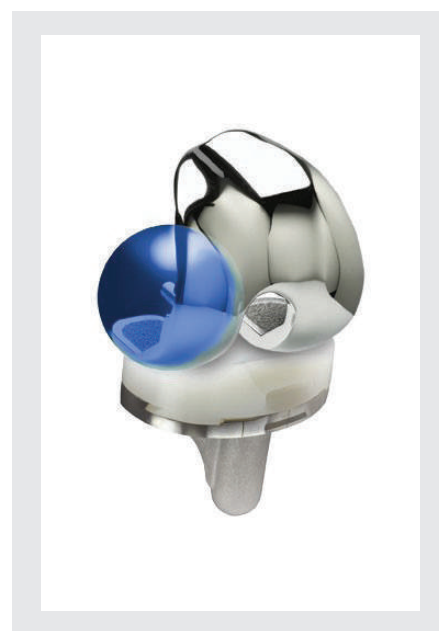
Even after “30 plus” years of development, there is still no complete agreement about which class of prosthesis best “mimics” normal anatomy although good results are possible with a number of implants in the right experienced hands. They fall into three broad categories, depending on the level of stability (or constraint) provided by the components:



Unconstrained – Leaving the Posterior Cruciate Ligament (PCL) intact so that the patient’s own ligamentous “envelope” guides knee motion.



Posterior stabilised – Removing the PCL and substituting a “post” which articulates with the femoral prosthesis to mimic normal PCL constraint.



Medial Pivot – Using a femoral component and plastic bearing which fit very closely together (constrained) to drive knee motion into a physiological pattern.

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They all have their advantages and disadvantages and the key factor influencing results is probably your surgeon's training and experience with the implant he uses most. However, more clinical research, with patients reporting on their own levels of function, may yet establish a superior design.

PROMs

Patient reported outcome measures (PROMs) are the true measure of the success of a Total Knee Replacement. Whilst the objective measures of range of movement, stability and strength are important and reproducible markers, the important thing to our patients is whether they feel better.

This is best assessed by self-reported questionnaires which are easy to administer and can be repeated to indicate change (hopefully improvement) over time.



RESEARCH

As part of my own research and continuing practice development I am currently conducting a scientific trial of two already successful knee designs being compared "head-to-head" to see if one is clinically superior. After consent, my patients are allocated to either group randomly and are asked to answer questions on their knee function prior to operation, at 1 year and again at 2 years. With the same surgeon doing the operations, any differences can therefore be attributed to the prosthesis design. I hope to add a third design to the trial soon and be able to report to you on results in a couple of years.



REFERENCES

Long-term survivorship of a medial-pivot total knee system compared with other cemented designs in an arthroplasty registry: Barbara Bordini, Cristina Ancarani, David A. Fitch, *Journal of Orthopaedic Surgery and Research*, 2016, 11:44

Posterior-Stabilised versus Posterior Cruciate Ligament-Retaining Total Knee Arthroplasty: Frank R. Kolisek, M.D.,¹ Michael S. McGrath, M.D.,² David R. Marker, B.S.,² Nenette Jessup, M.P.H.,¹ Thorsten M. Seyler, M.D.,³ Michael A. Mont, M.D.,² and C. Lowry Barnes, M.D.⁴ *Iowa Orthop J.* 2009; 29: 23-27.

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