

Personalised knee replacement – Biomet Signature Knee – Mr Simon White

What is it?

It is a technique where your surgeon and the knee replacement engineers work together to predict the optimum size and position of your knee replacement prior to the surgery. Specialist equipment is manufactured to be used during the surgery to ensure accurate placement and sizing.

Why is that important?

Knee replacements can wear out at an accelerated rate if the alignment is more than 3 degrees from the optimum position. Patients can be sensitive to the sizing of their knee replacement. Too large a knee can give rise to pain or stiffness; too small can lead to an unstable knee or more bone being removed than necessary during the operation leaving less available for future surgery if necessary.

How is the technique performed?

Once you and your surgeon have agreed that total knee replacement is the correct solution to your pain, an MRI scan is organised. MRI has been chosen because this does not involve the use of any radiation to obtain the information. This is used to create a 3D model of your knee and to assess the alignment relative to your hip and ankle. The data is reviewed by Mr White with Biomet who manufacture the personalised knee and the optimum sizing and positioning are agreed. The company then manufacture 3D sterile instrument guides and moulds of your knee which are used during the surgical procedure to ensure accurate positioning of instruments to perform the operation. This manufacturing process takes approximately 4 weeks.

What is involved in the surgery?

The surgery will still involve most of the steps that a standard knee replacement involves. However the personalised procedure lends itself to performing muscle sparing surgery and smaller incisions and it does not involve placement of an alignment rod in the thigh bone which can cause some blood loss.

Other advantages?

Blood loss is reduced. The risk of fat embolus is reduced (small release of fat particles into the bloodstream which can occur rarely during knee replacement). Pain is reduced due to a smaller incision and muscle sparing surgery. This may result in quicker recovery and a reduced length of stay. It is intended that if positioning of the knee replacement is more accurate, that the lifespan of the knee replacement is prolonged.

What is the current level of experience?

This procedure has only recently been made available to limited departments in the United Kingdom. As such there are very few surgeons that have performed this procedure or have received requisite training to perform it. Mr White has trained with the designer surgeon of this procedure in the United States regarding this technique, and as a result is one of the best placed surgeons to offer this procedure in the UK. He has been using this technique for 4 years now and teaches other surgeons regarding the technique. He performs over 150 knee replacement operations per year, and

is a high volume surgeon. Studies show that high volume surgeons obtain the best results with the lowest complication rates.

Am I suitable for this?

Your pattern of knee arthritis may be suitable for a partial or a full knee replacement, so once you have been reviewed and x-rays obtained, the surgical options will be discussed with you. There are very few patients in whom the technology cannot be used. Even if there is metalwork around the knee, or if you have a pacemaker, which may mean that an MRI scan cannot be performed, there is a technique using a CT scan that can be used instead.

What is the cost?

For insured patients, we have been working with most insurers to try and offer this procedure under the terms of your policy. This would need to be checked on an individual basis.

For self-pay patients an up-to-date personal quotation will be provided which will include all aspects of your care including postoperative physiotherapy and follow-up. Due to a specially negotiated rate, the personalised knee replacement is now available at Spire Hospital Cardiff for a slightly improved price when compared to a standard knee replacement.