New Technology for Hip and Knee replacement at Kareena Private Hospital Dr Mark Fleming

Robot-Assisted Total Knee Replacement enables accurate execution of functional alignment

I use the Stryker MAKO robot at Kareena Private for all my total knee replacements.

This robot is a 4-wheeled square tower with a robotic arm. This arm holds the surgical saw at the planned angle when the surgeon prepares the femur and tibia during total knee replacement.

The saw blade is more rigid than conventional bone saws enabling a more precise cut. The oscillating saw is limited by the robot, so when it approaches the edge of planned bone resection it ceases cutting, thereby avoiding damaging surrounding soft tissue.

I think the most powerful aspect of MAKO knee replacement is the ability for the surgeon to plan the implant position in a way that recreates the individual knee contours. This position is then able to be tested for its effect on the knees balance PRIOR to executing any cuts. This blending of 3 dimensional bone shape knowledge and soft tissue laxity assessment is unique compared to any other knee replacement technology.

This enables the surgeon complete control of individualised implant positioning to achieve perfect balance without 'releasing' the knee's soft tissue envelope. This in turn has been proven to reduce pain and swelling. Safely delivering the individualised plan with machining accuracy.

By avoiding the need for intramedullary alignment rods, this technique lowers the risk of fat embolism and associated pulmonary complications.

This is game-changing technology for surgeons who believe that knees need their own unique implant position.

This philosophy is termed functional alignment.

Minimally invasive direct anterior total hip replacement at Kareena Private Hospital

Anterior hip surgery has been described many years ago but the relevance to total hip replacement has become more notable in the last 10 years due to advances in technology that make the approach safer and reproducible. This is different to conventional total hip replacement approaches since the approach to the hip joint is through an inter-nervous interval provided through the base of the Tensor fascia lata muscle fascial sheath. The beauty of this approach is that the muscles, tendons and importantly the posterior hip capsule have not been cut. Leading to a naturally stable hip that lends itself to less pain and lower dislocation risk. Many papers have been published on the increased speed of recovery.



Technology Assisted Hip Replacement

People caring for people.

Intra-operative Analysis and Digital Templating for Hip Replacement.

The Australian and New Zealand joint registry has looked at our local data and found the revision risk equal between approaches.

My reasons for switching to perform 98% of my primary total hip replacements through the anterior approach 5 years ago was for the stability of the procedure and the minimally invasive principle.

Continued overleaf...

Kareena Private Hospital Part of Ramsay Health Care

86 Kareena Road, CARINGBAH NSW 2229 Ph: 02 9717 0000 MR0036724 KarPH New Technology for Hip and Knee replacement A4

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The approach has been made safer and more enjoyable to perform through technological advances that Kareena Private has invested in. These include:

- New large high definition mobile xray unit providing outstanding image quality to be used with the navigation software ensuring accurate guidance to ensure natural leg length and offset restoration.
- Stryker precision saw with its distal oscillating teeth; this saw provides an extremely accurate femoral neck cut without risking damage to surrounding tissue as the side of saw blade itself does not oscillate.



 Kincise electric hammer system that enables a two-handed technique, holding the broach in the perfect position delivering the exact same number of newtons with each strike of the hammer. This has been shown to provide

a more accurately prepared femoral canal than striking

a manually held broch with a conventional hammer.

More information can be found on my website: **www.thejointinstitute.com.au**



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