

The surgeons at Sydney Knee Specialists have recently introduced new technology that allows precise surgical implantation of knee replacement prostheses. This involves the use of a palm-sized computer with the same technology found in smart phones to perform knee replacement surgery.

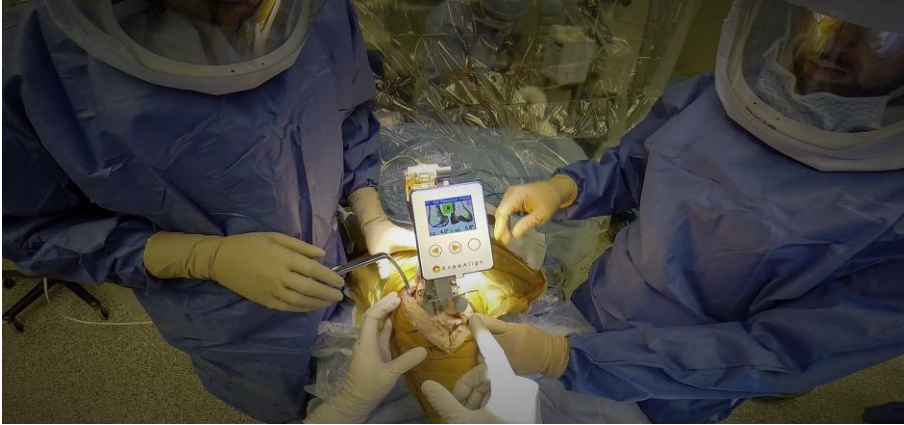
Past research has found that computer navigation surgery allow for more accurate alignment of the lower limb during knee replacement surgery. This in turn is believed to result in longer lasting knee replacements, especially when used in patients under the age of 65 [1].

The problems with first generation navigation systems, which are still in use today, is that they are very large and costly machines, they occupy significant space in the operating room, they require additional technicians to operate them and add significant time to the surgery.

OrthAlign is a new system where the complete computer navigation system is replaced by a palm-sized computer. They use smart phone-type technologies such as accelerometers and gyroscopes that precisely allow implantation of the knee replacement. The OrthAlign pods are more streamlined and simply attach to the regular surgical instruments, without the requirement of additional surgical steps such as drilling the computer tracking device to the patients bone.



Studies by Dr Nam et al [2] in the United States have found it to be superior to the use of conventional guides and comparable to current computer-assisted navigation systems [3] in use.



Dr's Chen and MacDessi are currently performing a randomized clinical trial assessing the accuracy of this system compared to conventional cutting guides. Our experience to date has been that this system is very easy to use, doesn't add significant additional time to be operation, and offers accuracy above conventional instruments. If you wish to enquire about this clinical trial or would like to know if you are suitable for knee replacement surgery using this technology, please contact Sydney Knee Specialists.

To learn more about this new technology, please visit the website:
<http://www.orthalign.com/videos/>.

References

1. Richard N. de Steiger , Yen-Liang Liu , Stephen E. Graves. Computer Navigation for Total Knee Arthroplasty Reduces Revision Rate for Patients Less Than Sixty-five Years of Age. *The Journal of Bone & Joint Surgery* Apr 2015, 97 (8) 635-642.
2. Nam, et al, "Extramedullary Guides versus Portable, Accelerometer-Based Navigation for Tibial Alignment in Total Knee Arthroplasty: A Randomized Controlled Study", *The Journal of Arthroplasty*, June 5, 2013.
3. Nam, et al, "Accelerometer-Based, Portable Navigation vs Imageless, Large Console Computer-Assisted Navigation in Total Knee Arthroplasty", *The Journal of Arthroplasty*, April 17, 2012.