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COMPUTER ASSISTED KNEE REPLACEMENT

Total knee replacement is one of the most successful and reliable operations in use today. However, whilst total knee replacement generally gives excellent results, one of the long term problems is component wear and loosening due to mal-position of the implants. Routine total knee replacement relies on mechanical instrumentation which does have some weaknesses and potential inaccuracies.

The solution to this problem is to use a computer assisted surgical navigation technique whereby the components are implanted into the knee using a computerised model based on the individual anatomy of the patient.

The system works in the same way as the global positioning system which can pinpoint locations on the Earth's surface with astonishing accuracy. In the operating room, the same technique is used locally to greatly improve the accuracy of the operation.

In Australia approximately 20% of knee replacements are done using computer assisted navigation.

I use this revolutionary technique for ALL of my patients undergoing knee replacement surgery at St Vincent's Private and Prince of Wales Private Hospitals.

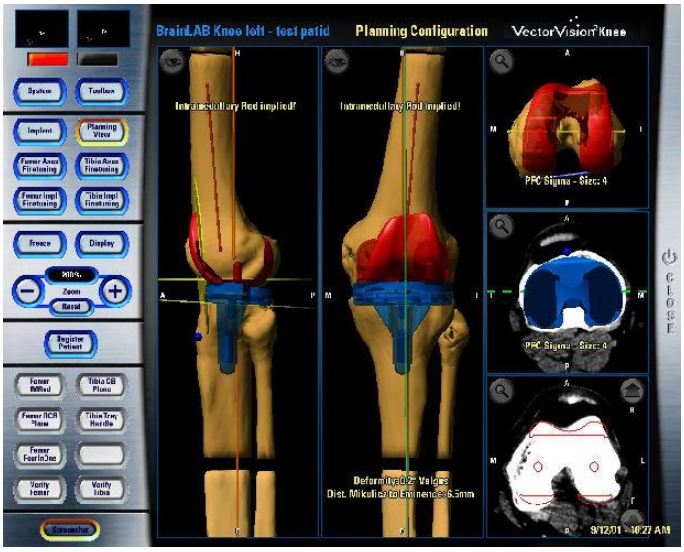
It is expected that by using this system to ensure optimal component positioning that patients will enjoy better function and that their implants will last longer than would be possible using the standard technique.

Current literature support for the use of computer assisted navigation includes:

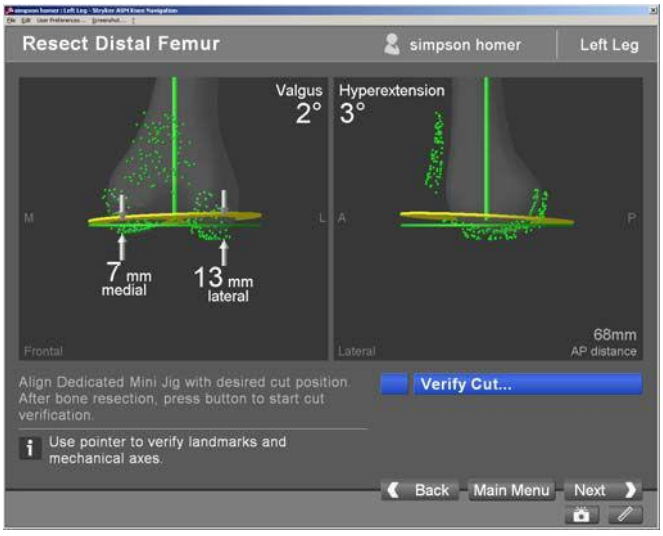
1. Clinical Orthopedics 2004 Sep; (426): 180-6. Stockl B et al
2. Journal of Bone and Joint Surgery Br. 2004 Aug; 86(6): 818-23. Chauhan SK et al
3. Journal of Bone and Joint Surgery Br. 2004 Jul;86(5): 682-7. Bathis et al
4. Journal of Bone and Joint Surgery Br. 2004 Apr; 86(3): 372-7. Chauhan SK
5. Clinical Orthopedics 2003 Nov; (416): 177-84. Stulberg DS

Computer Assisted Knee Replacement

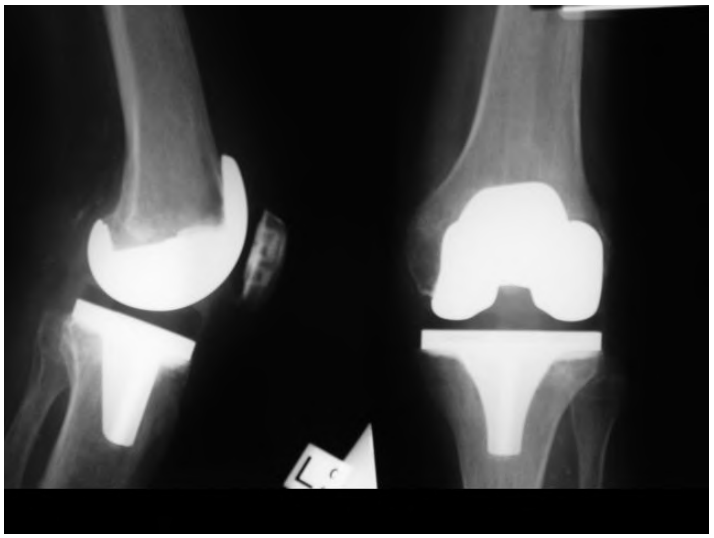
The computer and attached infra-red cameras



Screen shot showing the operative plan



Screen shot showing resection guide



X-Ray showing optimal implant positioning