VISIONAIRE®
Patient Matched Instrumentation

A technology from smith&nephew

Time to *A.C.T.*

For hospital administration

Customized surgical solutions with

Advanced technology from an orthopaedic company isn't it time to ***A.C.T.***?

The VISIONAIRE® Patient Matched Technology is a process that allows Smith & Nephew to design a set of cutting blocks based on a patient's own anatomy. An MRI of the patient's knee plus a full leg radiograph are used to design a femoral and tibial cutting block that the surgeon uses to perform the patient's total knee arthroplasty.

- The inner shape of the cutting block matches the outer shape of the patient's distal femur and proximal tibia
- This hand-in-glove fit allows surgeons to make the precise bone cuts needed to position the knee implant in optimal alignment
- This technology is available for use with the following Smith & Nephew Total Knee Systems: LEGION® Primary Total Knee System (SPC), JOURNEY® BCS System and GENESIS® II Total Knee System

A.

Comprehensive **alignment** and greater accuracy of bone cuts

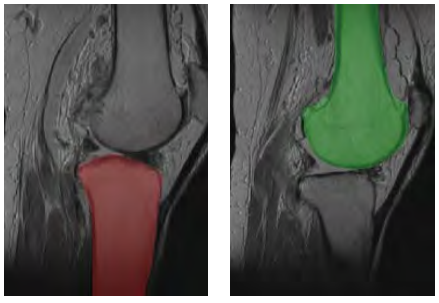
- **The VISIONAIRE technology is customized using a full-length view of the leg, based on mechanical axis alignment**

Did you know?
As many as 20% of tibial cuts and 36% of femoral cuts are off by ≥1.5° and could result in unsatisfactory implant alignment

- **Patient-matched blocks minimize the likelihood of bone cutting errors**

Did you know?
Alignment with the mechanical axis is the gold standard for a successful total knee arthroplasty

Over 30% of knee failures are due to complications of misalignment



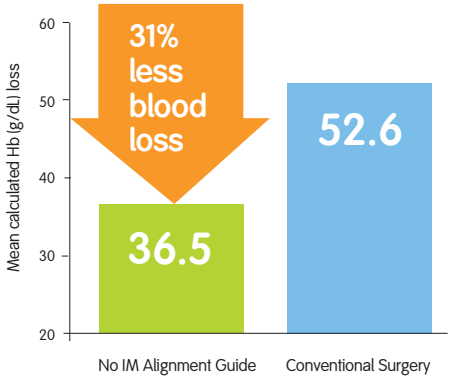
C.

Fewer **complications**

- **VISIONAIRE Patient Matched Technology is less invasive than conventional total knee arthroplasty because there is no need for an intramedullary (IM) alignment guide**

Did you know?
Eliminating the intramedullary alignment guide reduces blood loss and the need for blood transfusions

Total patient blood loss reduced by 16.1 g/dL (P<.001)[h]



Recognized cost savings:
Blood products ~$50K annually for a 200-bed hospital[h]

your hospital in mind

you know and trust...

T.

Saves **time** in and out of the operating suite

- **Alignment and resection in one step with no assembly required**

Did you know?

May shorten surgery time up to 20 minutes[f,g]

Fewer instruments and trays means less non-operative time and room turnover

Substantially fewer pieces to prep and sterilize

	No IM Guide	Conventional
IM alignment drill and guide		✓
Distal femoral sizing guide		✓
Valgus guide bridge		✓
Valgus alignment guide		✓
Femoral sizing guide stylus		✓
Tibial resection stylus		✓
Tibial cutting block	✓	✓
Femoral cutting block	✓	✓

Cost savings

	Hospital cost of TKA	Hospital cost of TKA with VISIONAIRE® Technology[a]	What changed?
OR equipment (including implants)	$6,597	$7,797	Cost of VISIONAIRE
Room and board	$3,234[b,c]	$2,534[d,e]	Reduction in length of stay by one day
Anesthesia/ post-anesthesia care unit	$1,158[f]	$912[g]	Reduction in OR time by 20 minutes
Blood products	$772	$536[h]	Reduction in blood product usage by 30.6%
Other	$2,058	$2,058	
Total cost	**$13,819**	**$13,837**	

References:

a. Bozic KJ, Katz P, Cisternas M, et al. Hospital resource utilization for primary and revision total hip arthroplasty. *JBJS*. 2005;87-A(3):570–576.

b. Peters CL, Shirley B, Erickson J. The effect of a new multimodal perioperative anesthetic regimen on postoperative pain, side effects, rehabilitation, and length of hospital stay after total joint arthroplasty. *J Arthroplasty*. 2006;21(6):132–138.
Mean length of stay: 3.1 days

c. Shorr AF, Sarnes MW, Peeples BJ, et al. Comparison of cost, effectiveness, and safety of injectable anticoagulants used for thromboprophylaxis after orthopaedic surgery. *Am J Health-Syst Pharm*. 2007;64:2349–2355.
Major orthopaedic surgery: Total hip replacement, total knee replacement, or hip fracture surgery
Mean length of stay: 5.1 ± 4.3 days

d. Stronach B, Siegel HJ, Johnson CK. MRI guided custom-fit total knee replacement: the first six weeks [Presentation]. Presented at: Combined Alabama Orthopaedic Society & Mississippi Orthopaedic Society Annual Meeting; May 2–4, 2008: Sandestin, FL.
Average length of stay for single TKA: 2.2 days
Average length of stay for bilateral TKA: 3.5 days

e. Premier, Inc. Perspective Comparative Database. Internal Xcenda data on file. Analysis from 1/2005 to 12/2005.
Note: The cost of a hospital day is not constant throughout the length of stay.

f. Matziolis G, Krocker D, Weiss U, et al. A prospective, randomized study of computer-assisted and conventional total knee arthroplasty. *JBJS*. 2007;89-A(2):236–243.

g. Hafez MA, Chelule KL, Seedhom BB, Sherman KP. Computer-assisted total knee arthroplasty using patient-specific templating. *Clin Orthop Relat Res*. 2006;Mar(444):184–192.
Note that this assumes that each minute of operative time uses 1 minute of anesthesia time (does not include anesthesiologist/staff time). Thus, a reduction in operative time will reduce anesthesia use. Inclusion of PACU in this cost center may overestimate the true reduction.

h. Kalairajah Y, Simpson D, Cossey AJ, Verrall GM, Spriggins AJ. Blood loss after total knee replacement: effects of computer-assisted surgery. *JBJS*. 2005;87-B:1480–1482.
Reduction in calculated hemoglobin loss after computer-assisted surgery vs. conventional TKA: 30.6%

Are you ready to *A.C.T.* now?

A. Comprehensive mechanical **alignment** with anatomic precision

C. Potentially fewer **complications** and reduced related-resource use

T. Potentially shorter operative **time** and room turnover time

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