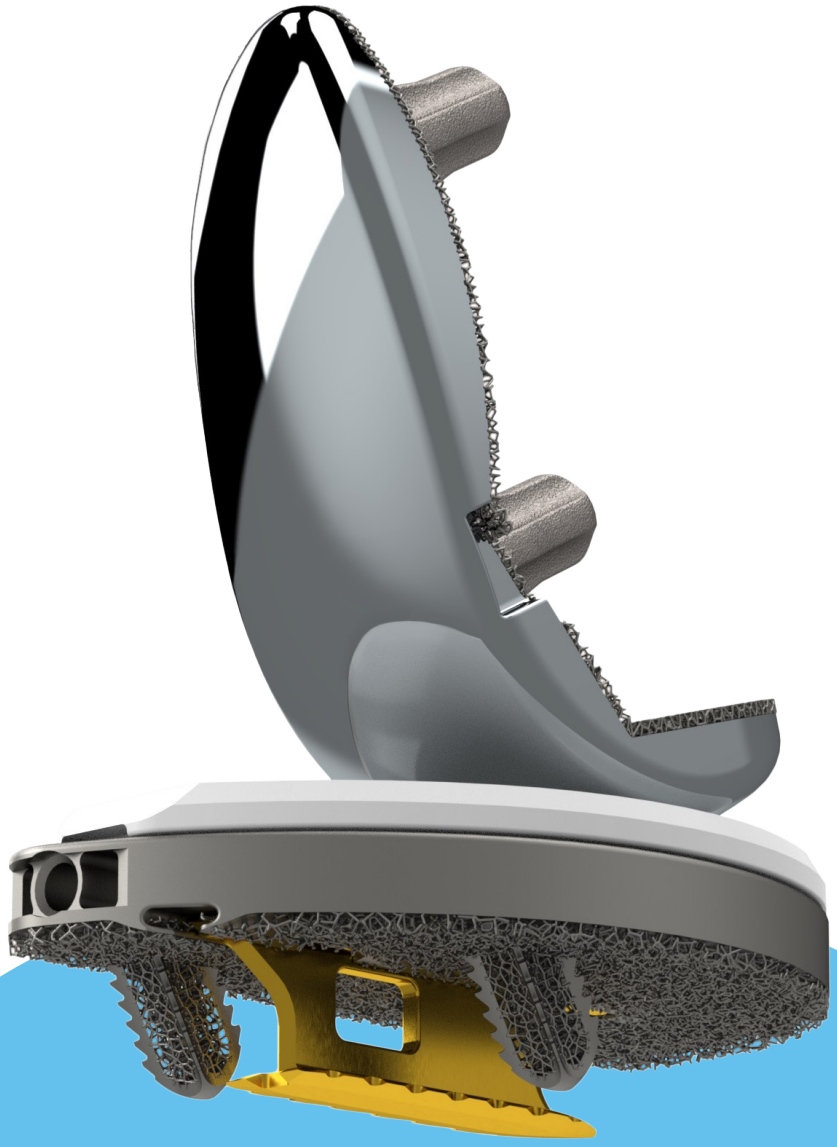
Smith+Nephew

ENGAGE◊

Cementless Partial Knee System

Clinical and Economic
Benefits Summary



Executive summary

Only partial knee available in the US that is cleared for cementless use

Only system that creates compression at the tibial interface using a patented 4th component, the Tibial Anchor. This limits micromotion and interface stability to promote osteointegration.

Eliminating cement from the procedure has potential clinical and economic benefits.

Removing cementing steps results in up to 15 minutes less time in the OR.

Cost saving due to not having to purchase cement or accessories.

Eliminates the risk of tibial loosening due to cement failure.

Reduces the incidence of third-body wear due to loose cement debris in the joint.

Clinical summary

Eliminating cement from the unicompartmental knee replacement (UKA) procedure presents potential clinical benefits

- It is estimated that up to 1 in 5 traditional UKAs have excess or loose cement floating in the joint[1]
- Loose cement particles present in UKA leads to increases in polyethylene wear rates by 10X[2]
- Polyethylene wear debris causes osteolysis. Aseptic loosening resulting from osteolysis is the most common failure mode of joint arthoplasty[3-6]

Reduction in revision rates are possible with cementless partial knee replacements

- Cementless UKA have a lower risk of post-operative loosening compared to those using cement fixation[7,8]
- The risk of revision related to aseptic loosening is cut in half for cementless partial knee replacements compared to cemented UKA constructs at 10 years[7]

Possible reduction in surgical time (up to 15 min) by eliminating cementing steps results in potential benefits for the patient[9-12]

- Reduced chance of infection[13]
- Fewer tourniquet related complications[14]

Cementless UKAs have less chance of loosening than cementless total knee replacements (TKA)

- Implant aseptic loosing failures occurred nearly 50% less in cementless UKA than TKA[6]

Product performance summary

Measured improvement in product performance is demonstrated for the ENGAGE◊ Cementless Partial Knee System over traditional keel-based tibial trays (Figure 1)

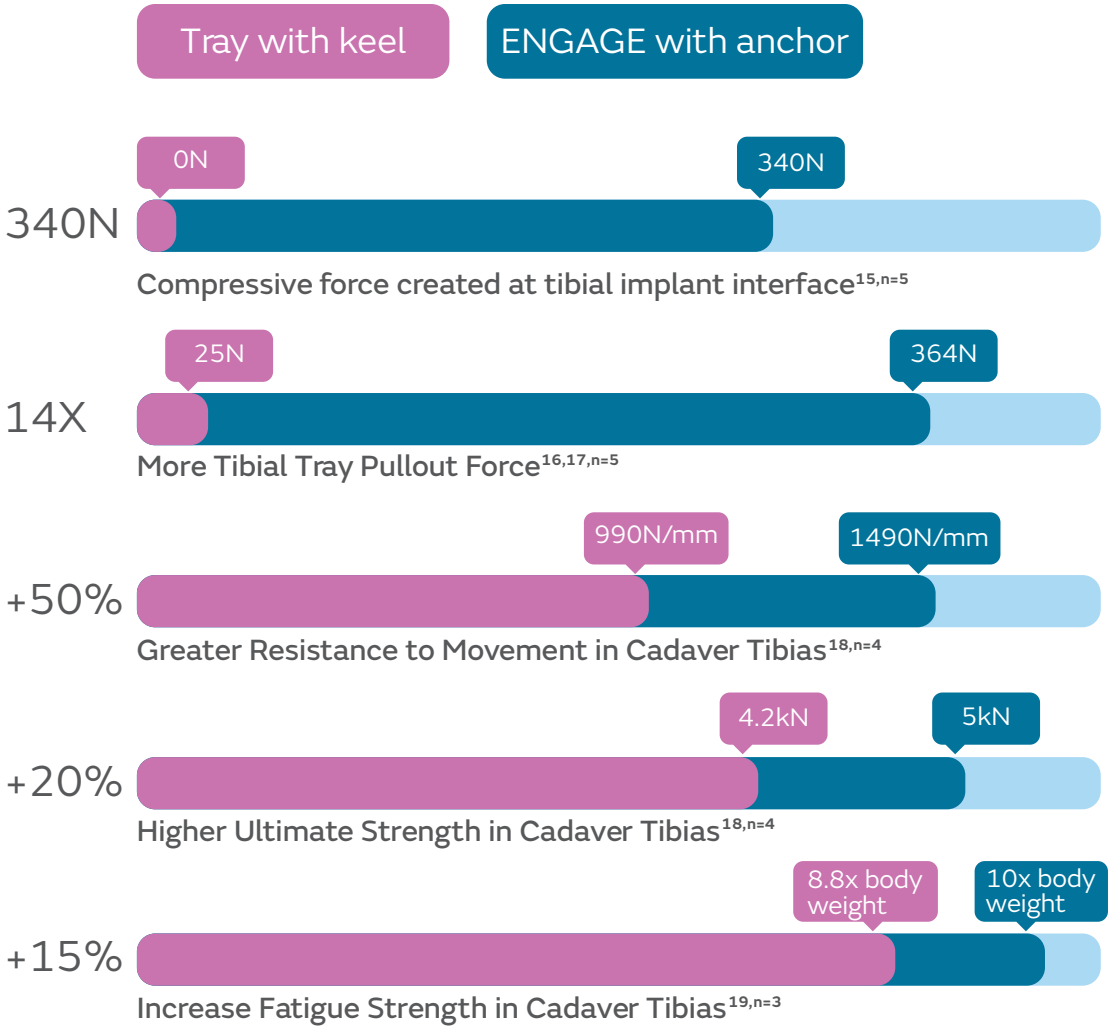


Figure 1. Comparison of product performance of an Engage tibial construct with tibial anchor to a traditional tibial tray utilizing keel fixation.

The only partial knee system that produces implant compression at the tibial tray-to-bone interface.[15,20]

Economic analysis

The positive financial impacts are significant; and result in direct and indirect cost savings per surgery to hospital or outpatient surgery center.

Direct savings

Significant reduction in OR time

- Clinical studies for cementless UKA demonstrated up to 15 minutes saving per case[9-12]
- Literature estimates the average cost for OR time including staff and instrumentation at approximately $100 per min[21]
- Possible Direct Saving = $100 / min x 15min = > $1,500 per surgery

Eliminate cost of bone cement

- Average price for bone cement with antibiotics = $264 per packet[22]
- Possible Direct Savings = $264 per surgery

Indirect savings

UKA may result in lower unplanned patient re-admissions reducing CMS-related penalties

- 30 day re-admission rates were cut in half for UKA (2.2%) when compared to TKA (4%)[23]
- >67% reduction in re-admission risk for UKA as compared to TKA[24]
- Knee Society Functional Score has been shown to be higher in cementless UKA vs. cemented UKA at 5 years (p=0.003)[9]
- Cementless fixation avoids technical errors related to cementing, like inadequate cementation technique, presence of loose fragments, or excess cement causing impingement[25]
- Registry data indicates the risk of revision related to aseptic loosening is cut in half for cementless UKA compared to cemented UKA constructs after 10 years[7]

Item	Potential savings per case ($US)
Reduced OR Time	$1500
Eliminate Cement	$264
Total Savings	$1764

Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Smith+Nephew representative or distributor if you have questions about the availability of Smith+Nephew products in your area.

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