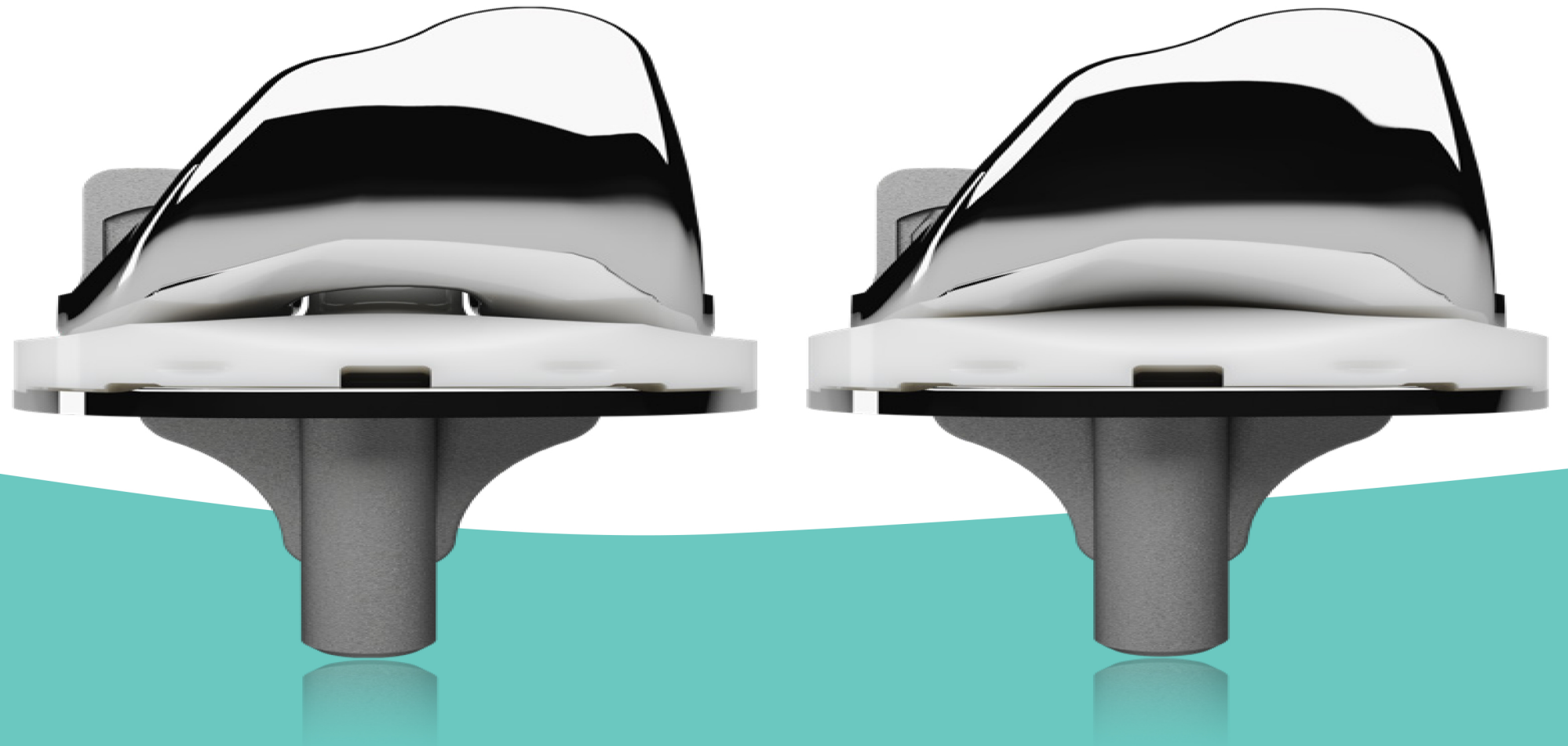




Smith+Nephew

ANTHEM[®]
Total Knee System



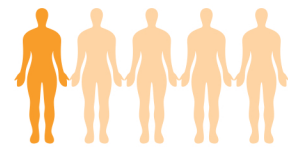
Compromised fit is associated with decreased patient satisfaction



The number of total knee arthroplasties (TKAs) performed globally is expected to **surge over the coming years** due to the increasing prevalence of obesity and increased life expectancies¹



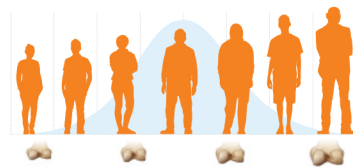
It is widely recognised that TKAs are associated with high survivorship, with global registries collectively reporting **survivorship of 93% at 15 years.**² Whilst survivorship data are important to analyse device longevity and performance, they fail to account for improvements in function that can lead to improved patient satisfaction.



Up to one in five patients are left feeling unsatisfied following their TKA procedure.³ The primary determinant of patient satisfaction is the fulfillment of patient expectations, of which pain relief and improved knee function are the most common.⁴



There are a number of factors which affect TKA outcomes, but implant choice is a factor that surgeons can control and there is a **growing body of evidence showing that implant design can impact on patient outcomes.**⁵⁻⁷



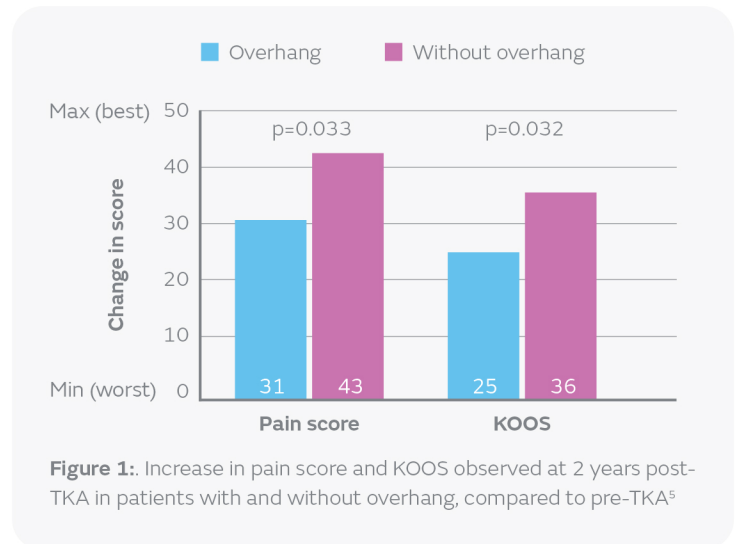
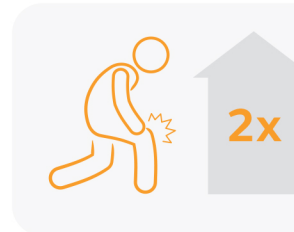
Almost all TKA implants are designed around male, western, Caucasian patients; yet, a systematic literature review has revealed patterns in the differences in both size and shape observed between knees from different ethnicities.⁸

The clinical impact of implant overhang

The issue of femoral overhang (where the component is wider than the distal part of the femur) has been reported in several studies.⁵⁻⁷

Femoral **overhang is associated with reduced functional and patient-reported outcomes** compared to those without overhang:

- **Overhang is associated with an almost two-fold increase in risk of knee pain** more severe than occasional or mild at 2 years post-TKA⁶
- Pain score and Knee Injury and Osteoarthritis Outcomes Score (KOOS) showed that **overhang is associated with worse clinical outcomes**, when compared to TKAs without overhang⁵
- An overhang of $\geq 4\text{mm}$ resulted in **significantly reduced flexion compared to no overhang** (121° vs 133° ; $p < 0.001$)⁷ in a study of 1,025 TKAs in Korean patients

Increased risk of knee pain with TKA overhang⁶



Innovation based upon trusted design

To test the ANTHEM^o TKS component fit in patients, intraoperative measurements were taken from 967 TKA patients from five regions (see below).¹⁰ The ANTHEM TKS narrow and a standard femoral trial component were compared on the prepared bone to confirm fit.

The results demonstrated that with the addition of ANTHEM TKS narrow:

- **Overhang ($\geq 3\text{mm}$) was significantly reduced** for women from all five countries (Figure 1)
- **Perfect fit rate was significantly improved** for Australian, Indian and Korean women, compared to when only a conventional implant was available, with slight improvements for men from Australia, China and India (Figure 2)

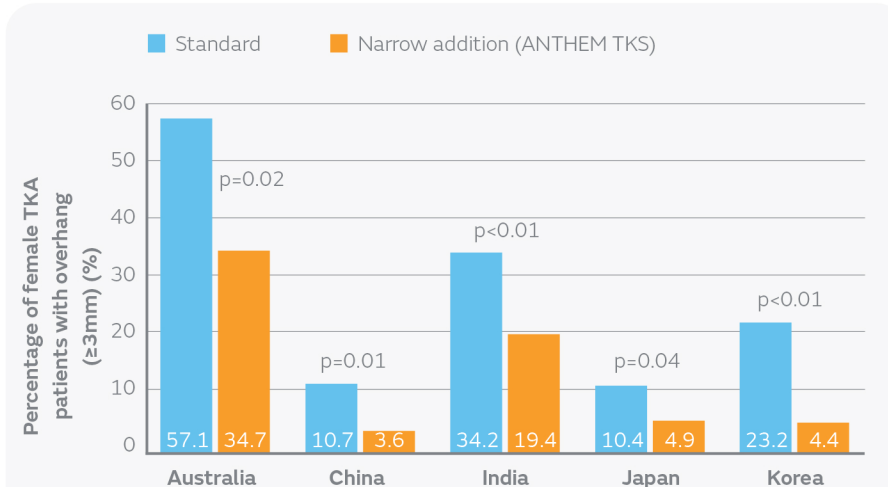


Figure 1: Comparison of the percentage of female TKA patients with $\geq 3\text{mm}$ of overhang with and without a narrow implant option (ANTHEM TKS)

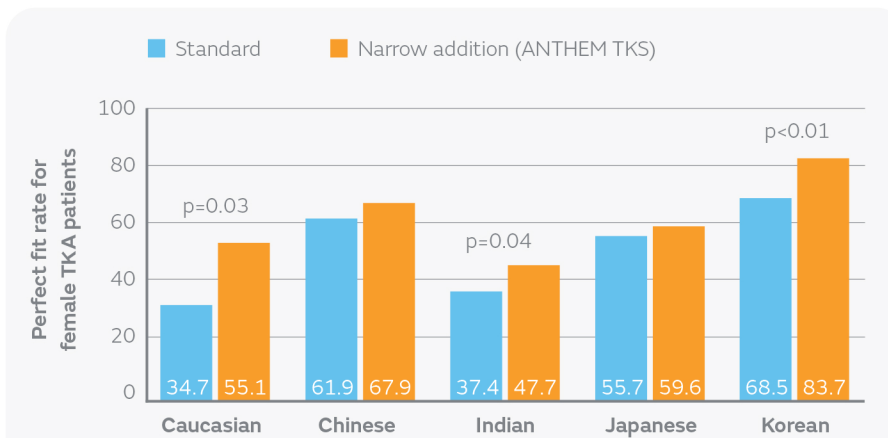


Figure 2: Perfect-fit rate of female patients with and without a narrow implant option (ANTHEM TKS)

“The additional availability of a femoral component with a reduced mediolateral dimension for the same anteroposterior size [ANTHEM TKS] has the potential to reduce overhang and improve component fit across ethnicities.”

ANTHEM^o TKS features the tibio-femoral articulation and patello-femoral function equivalent to the GENESIS^o II Total Knee System, which exhibits excellent survivorship at 15 years.

The ANTHEM TKS baseplate incorporates the GENESIS II design features which have over **20 years of clinical history.**

Over 2 million anatomic baseplates implanted since 1988



Registry Data

GENESIS II: 81,899 implantations

- Cumulative % revision of GENESIS II is **3.80 (3.28, 4.36) at 15 years**, compared to the class average of 4.8 (4.70, 4.90)
- Cumulative % revision of GENESIS II with patella is **2.92 (2.46, 3.47)* at 15 years**, compared to the class average of 4.28 (4.12, 4.44)

GENESIS II CR: 15,642 implantations

- Cumulative % revision of cemented prostheses is **6.7 (5.9, 7.7) at 19 years**, compared to the class average of 7.9 (7.4, 8.4)

GENESIS II PS: 18,485 implantations

- Cumulative % revision of cemented prostheses is **6.3 (5.7, 7.0) at 19 years**, compared to the class average of 6.4 (6.2, 6.6)

* Fewer than 250 cases remained at risk at these time points

Peer Review

- Thicker CoCr tibial trays were associated with significantly more medial bone loss than thinner titanium designs ($p=0.0001$)¹⁵
- The mean migration of the tibial component was less than 0.1mm and 0.1 deg in all planes relative to the post-operative RSA exam

*N=15