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FREEDOM® KNEE

Femoral Design: Size & Shape

FREEDOM KNEE SYSTEM OVERVIEW

The Freedom Total Knee® System was developed using advanced design engineering technologies and extensive clinical experience to address the anatomical, physiological and lifestyle needs of today's patients. The system's significant design advances allow patients to achieve optimal high-flexion motion regardless of whether the all-poly or metal-backed tibial component is chosen. This approach provides surgeons with unique component options that deliver successful, predictable and reproducible results.

ANTHROPOMETRY, SIZE, AND SHAPE

The Freedom Knee system has been optimized for the sizing and lifestyle requirements of the Asian patient population. As evidenced in studies by Hitt et al,[1] Vaidya et al,[2] and Ho et al,[3] the ratio between the medial-lateral (M/L) and anterior-posterior (A/P) measurements of the distal femur between western and eastern populations is starkly divergent, particularly in the smaller size range.

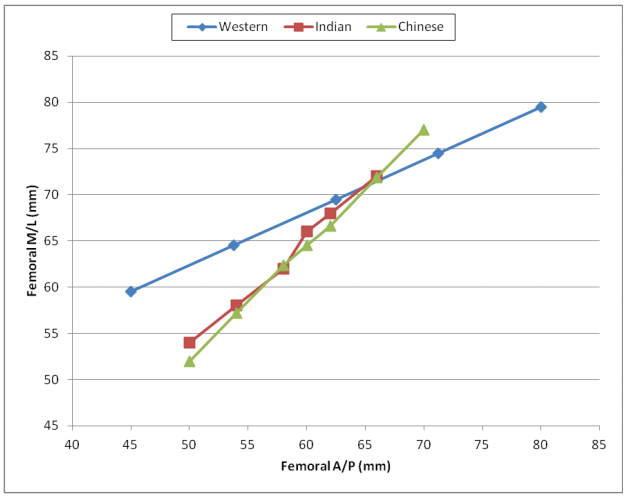

Figure 1: Anthropometric comparison of M/L-A/P dimensions in Western and Eastern Populations.

The Freedom Knee femoral components have been optimized to accommodate the size and shape requirements of the Asian patient population.

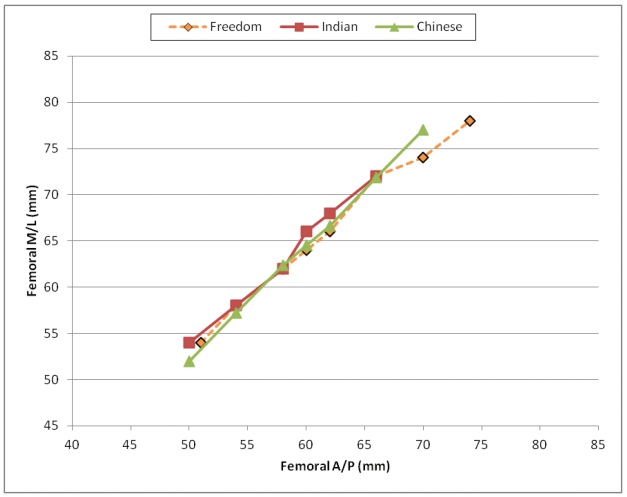

Figure 2: Freedom Knee M/L-A/P comparison to Eastern Populations

Furthermore, the M/L-A/P curves converge among the larger patient populations in both geographies, making the implants appropriate for both geographic populations at the larger sizes. To accommodate this convergence, we added a transitional size "D" at the nexus of these size requirements. This transitional size has only a 2mm size gap from the next size down and up.

COMPONENT	AP	ML
Femoral A (Universal)	51	54
Femoral B (Universal)	54	58
Femoral C (Universal)	58	62
Femoral D (Universal)	60	64
Femoral E (Universal)	62	66
Femoral F (Universal)	66	70
Femoral G (Universal)	70	74
Femoral H (Universal)	74	78

Figure 3: Femoral Component Sizing

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REFERENCES

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2. Shrinand V. Vaidya, MS, Chitranjan S. Ranawat, MD, Alaric Aroojis, MS, and N. S. Laud, MS.
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4. Ho WP, Cheng CK, Liau JJ. "Morphometrical Measurements of Resected Surface of Femurs in Chinese Knees: Correlation to the Sizing of Current Femoral Implants". *Knee.* 2006; 13:12.

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