

b-one
ORTHO



JUVENO[®]
Femoral Hip System



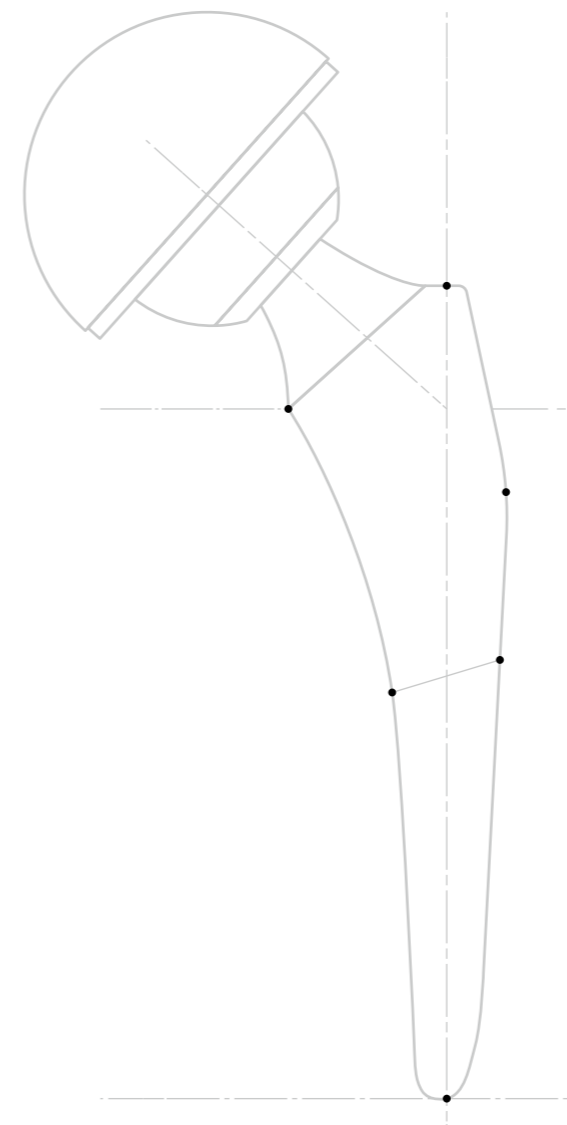
Richard H. Rothman
M.D., PH.D.

1936-2018

Founder of Rothman Institute

Special Thanks

Dr. Rothman has provided invaluable insights and experience in the development of **JUVENO®** and **PRIMO™** hip replacement systems. Total Hip System, shared years of clinical data and research from the Rothman Orthopaedic Institute, allowing the hip replacement systems to fully reflect the anatomical characteristics of patients worldwide.



System Introduction

JUVENO® Femoral Stem System and **PRIMO™** acetabular system is developed by b-ONE ORTHO, bringing together the experience of clinical opinion leaders from the United States, China, France, Canada and other countries. After years of extensive research and development, it was introduced to the world-wide audience in 2019.

The primary goal of **JUVENO®** is for young and active patients who are seeking longevity and better postoperative performance.

The **JUVENO®** system integrates b-ONE' s unique patented locking technology, in combination with advanced bearing options like Vitamin E diffused liners to reduce wear over lengthened stem life in younger patients. Coating options include titanium porous plasma spray (PPS) and hydroxyapatite dual coating (PPS+HA).

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 ··· Size Specific Medial Curvature

 ··· Constant Insertion Path

 ··· Excellent Fit And Stability

 ··· Restore Anatomic Function

**FIT
BETTER
LIVE
BETTER**

JUVENO® Femoral Hip



> 63% Canal Mismatch¹

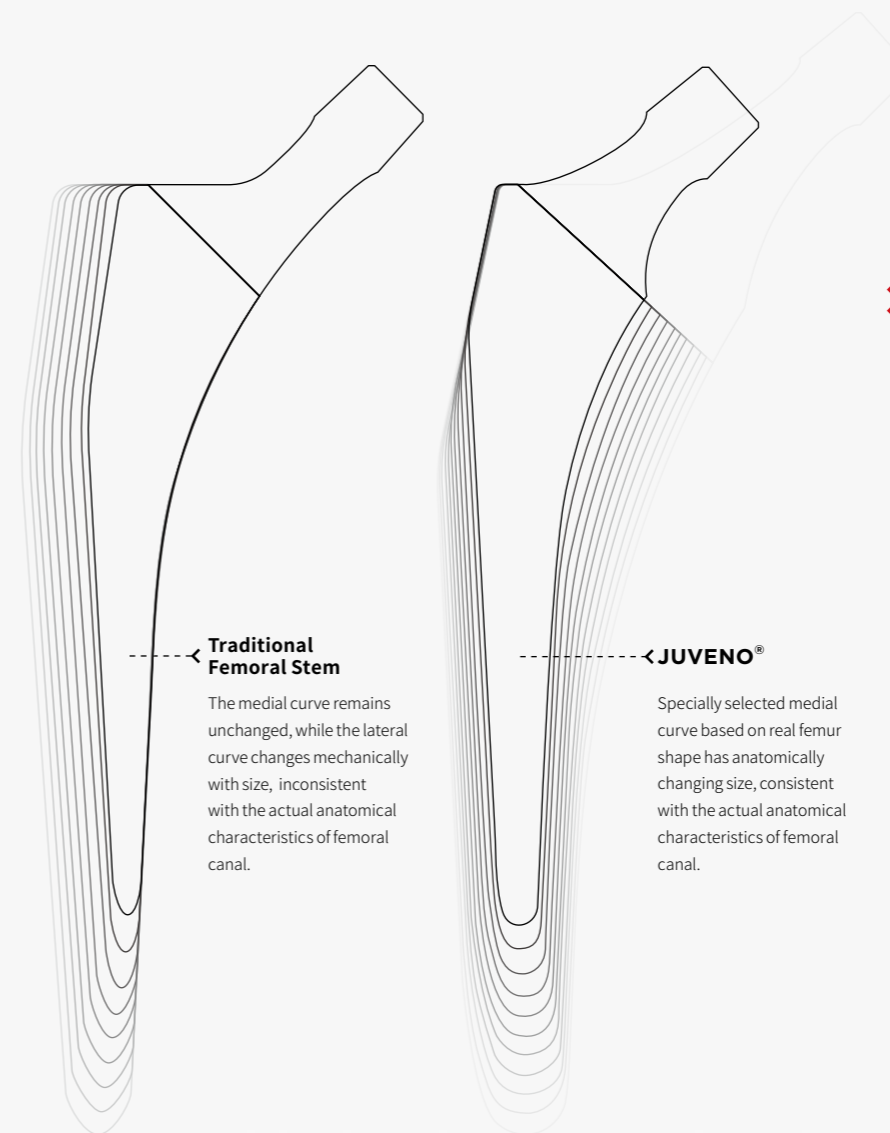
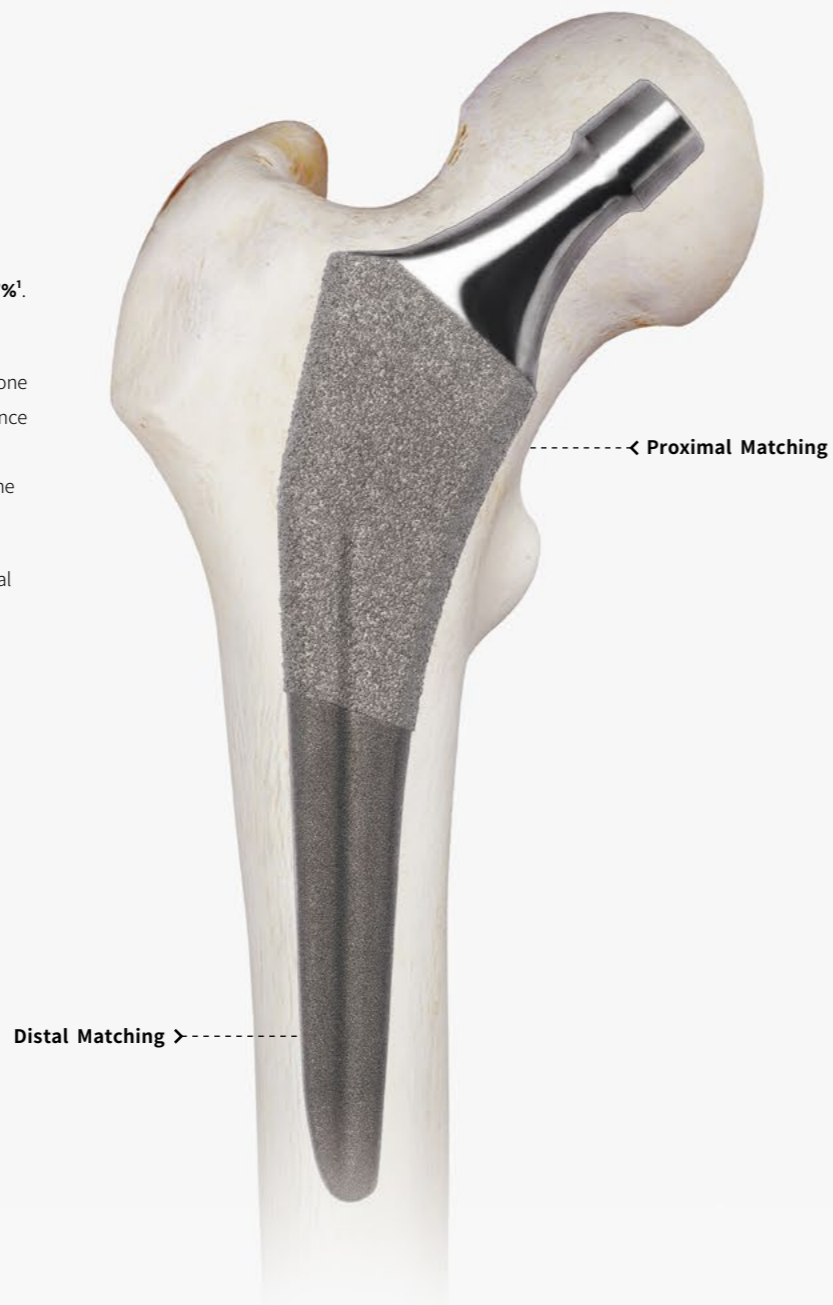
Studies have shown that the rate of both proximal and distal matching is only **37%** in traditional femoral stems, and up to **63%** of the femoral stems only match either the proximal or distal canal, with only distal matching accounting for up to **17%**¹.

The mismatch between the femoral stem and the medullary canal will result in stress shielding^{2,3,4}, and lead to proximal bone absorption⁶, thickening of the distal cortex^{5,6}, early subsidence and loosening of the femoral stem⁷, thigh pain^{8,9}, etc. All of which affect the postoperative satisfaction and, ultimately, the long-term survival rate of the femoral stem.

Excellent femoral stem geometry should satisfy both proximal and distal canal geometry to avoid distal matching only.

> JUVENO® Improved Canal Matching

JUVENO® femoral stem is designed based on the real patient data and extensive experience of the design surgeons including **Dr. Richard Rothman**. One of the main design goals is to improve canal fitting that optimizes the contact stress distribution, reduces the rate of distal-only fitting, improves the intramedullary stability of the prosthesis, and reduces intraoperative fracture rate and postoperative complications.



> JUVENO® Size Specific Medial Curvature

In the traditional femoral stems, the medial curves remains unchanged while the lateral curve increases uniformly with the sizes. Although this mechanical variation of femur size has shown a good clinical outcome, it is not consistent with the actual anatomical characteristics of the femoral canal, potentially increasing the risk of intraoperative fracture and insufficient stem fixation.

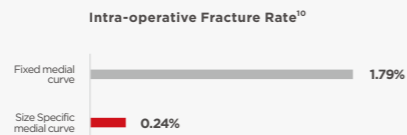
With the downward shift of patient demographic and ever increasing expectations, the benefit of anatomically sized stems becomes more and more evident.

A specific medial curve geometry with respect to the native femoral canal shape is selected for each size of the JUVENO® femoral stems to ensure the medial side of each femur reflects the anatomical changes, which are more consistent with the actual femoral canal shape to achieve better femur matching.

> JUVENO® Excellent Fit

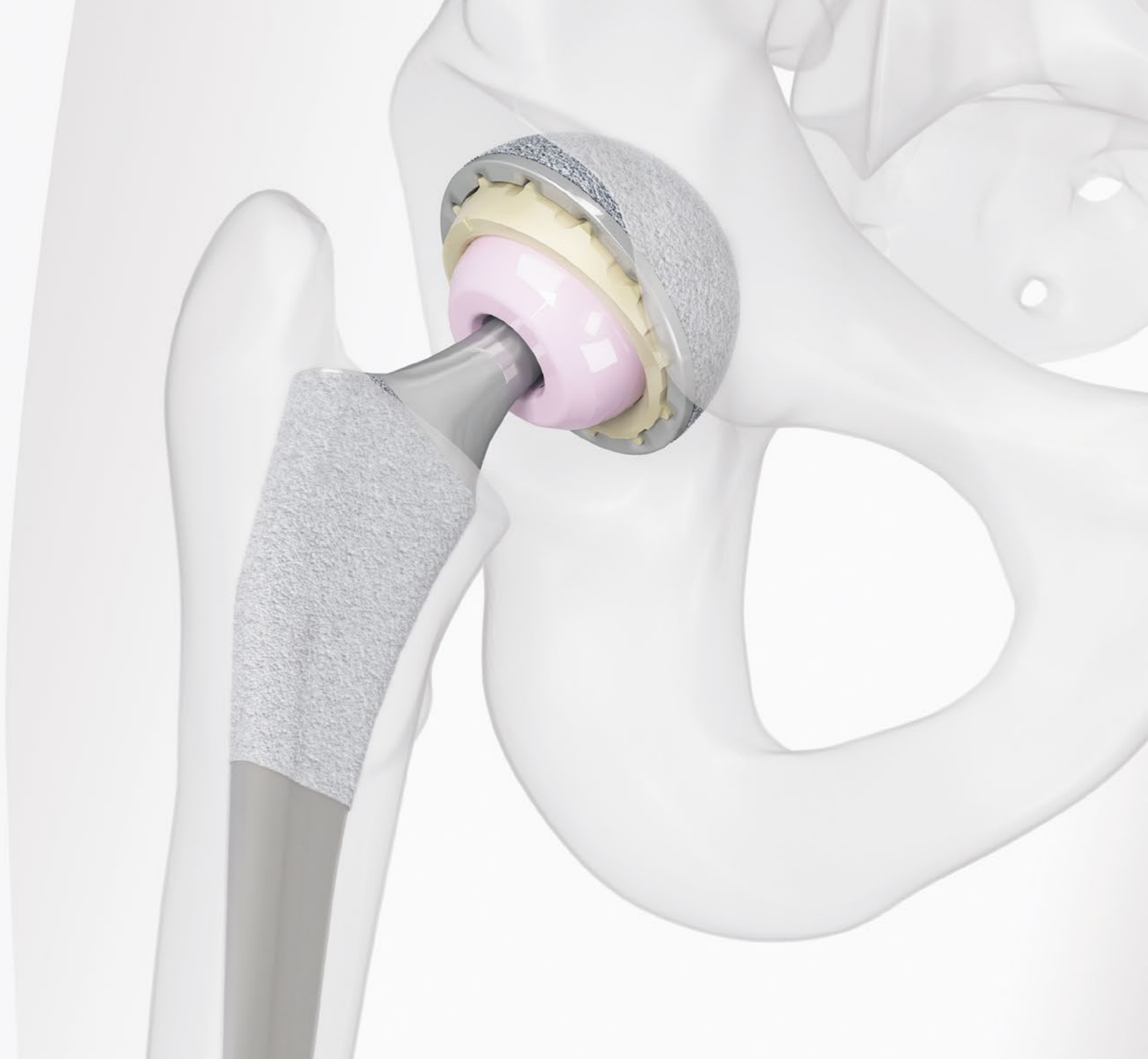
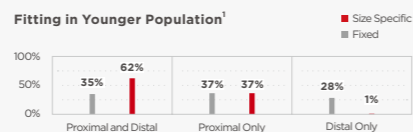
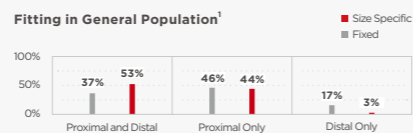
1 Reduce Intraoperative Fracture

According to the data from Rothman Institute, the incidence of Intraoperative fracture with size specific medial curvature is only **0.24%**, far lower compared with that of conventional fixed medial curve prosthesis (**1.79%**)¹⁰.



2 Better Femoral Fitting

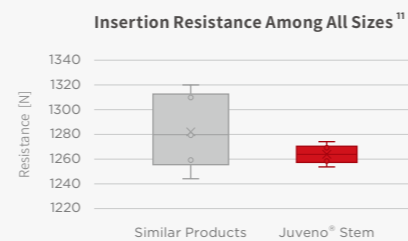
Research has shown that, in general population, the size specific medial curve design increases the rate of both proximal and distal matching from **37%** to **53%** and reduces the rate of distal only matching from **17%** to **3%** compared with traditional designs. In patients younger than **60** years of age, the improvement in canal matching is even more significant. The size specific curve design contributed up to **62%** of both the proximal and distal matches, while almost eliminated all distal only matches (only **1%** remaining)¹.





> Constant Insertion Path

The broach of **JUVENO®** is designed to maintain a constant insertion path throughout, allowing for confidence and simplicity and, ultimately, improving stem fixation¹¹.



The geometry of **JUVENO®** stem makes it compatible with minimally invasive surgical techniques including direct anterior approach (DAA), and enables the prosthesis to be easily inserted in different surgical approaches.

- > Short Stem Length (96mm-126mm)
- > Reduced Lateral Shoulder
- > Modified Distal Tip
- > Offset Insertion Tools

> Excellent Stability

Axial Stability

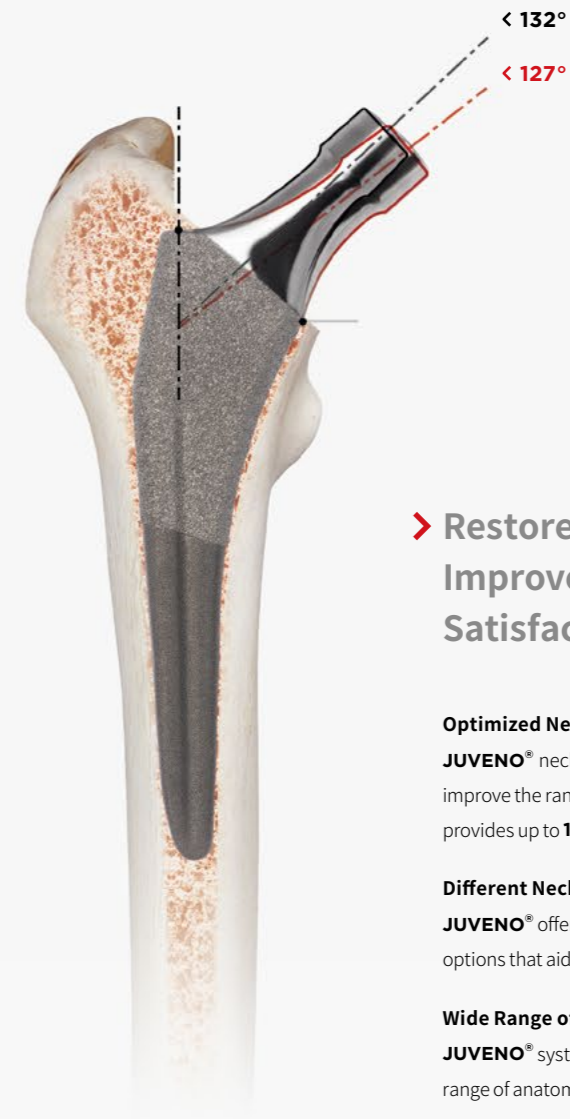
JUVENO® femoral stem is designed to make contact with both the medial and lateral cortex of the femur, and provides axial stability. On the **A/P** side, the proximal/distal taper of the prosthesis matches the natural taper of the femoral canal, preventing secondary subsidence of the prosthesis.

Rotational Stability

JUVENO® geometry creates a rounded rectangle cavity in the femoral canal that provides excellent initial rotational stability, limited micromotion, and better fit in different canal types as documented in a wide range of clinical studies¹⁵.

Advanced Coating Technique

JUVENO® coating options include titanium porous plasma spray (PPS) and hydroxyapatite (PPS+HA) dual coating to provide excellent bony ingrowth and promote long-term fixation^{12,13,14}.



> Restore Anatomy Improve Post-op Satisfaction

Optimized Neck Geometry

JUVENO® neck geometry is optimized to improve the range of motion; **JUVENO®** system provides up to **144°ROM**¹¹.

Different Neck Angles

JUVENO® offers **127°** and **132°** neck angle options that aid in leg length adjustment.

Wide Range of Sizes

JUVENO® system offers **11** sizes to cover wide range of anatomical morphology.

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