VerSys® Epoch® FullCoat Hip System

Taking the stress out of stress shielding

zimmer

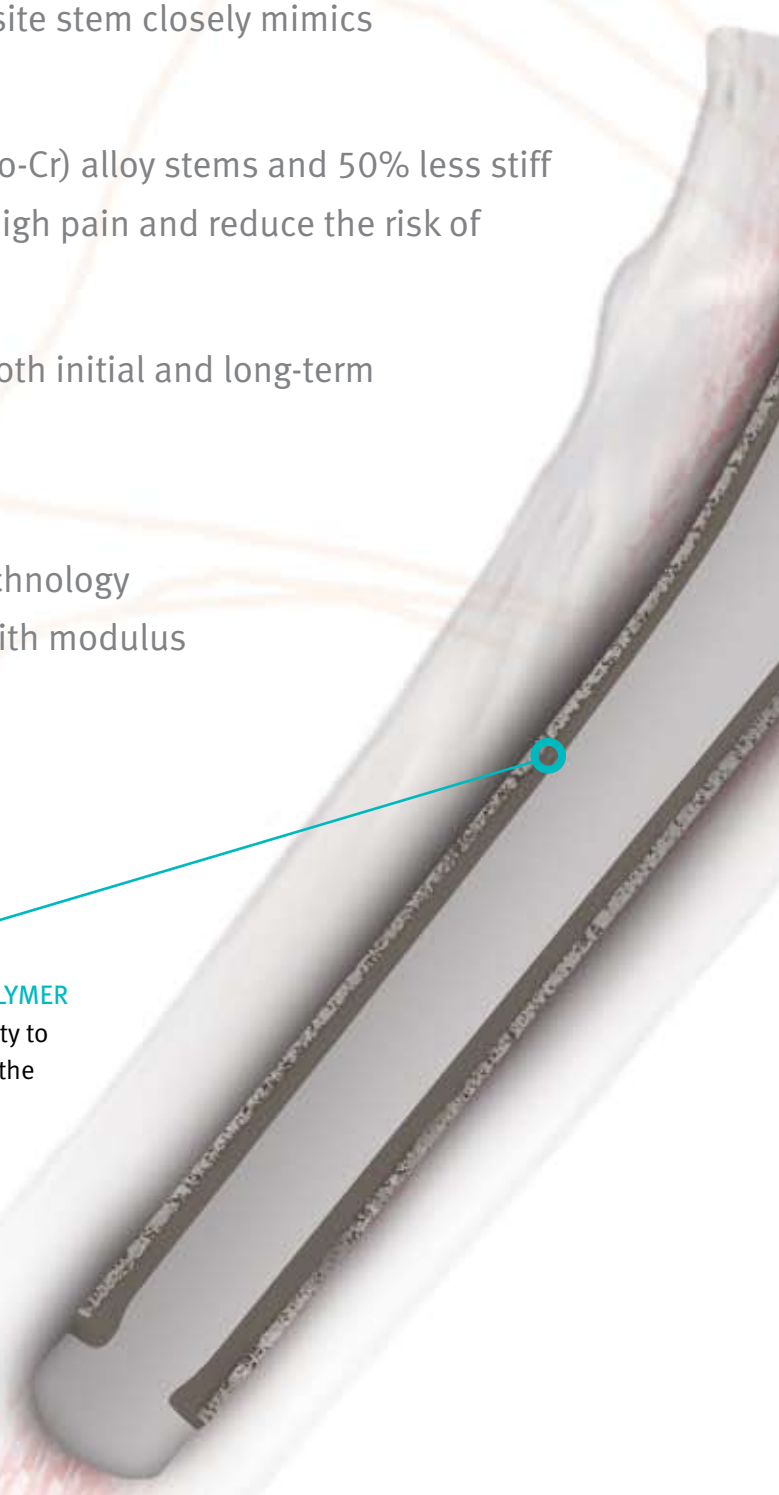
Reducing stiffness... to address clinical issues.

The *VerSys Epoch* FullCoat Hip System is the first reduced-stiffness stem specifically designed to address all patient femoral anatomies to minimize implant-related complications such as thigh pain, stress shielding, and leg lengthening.[1,2] The innovative flexible composite stem closely mimics the bending stiffness of bone.

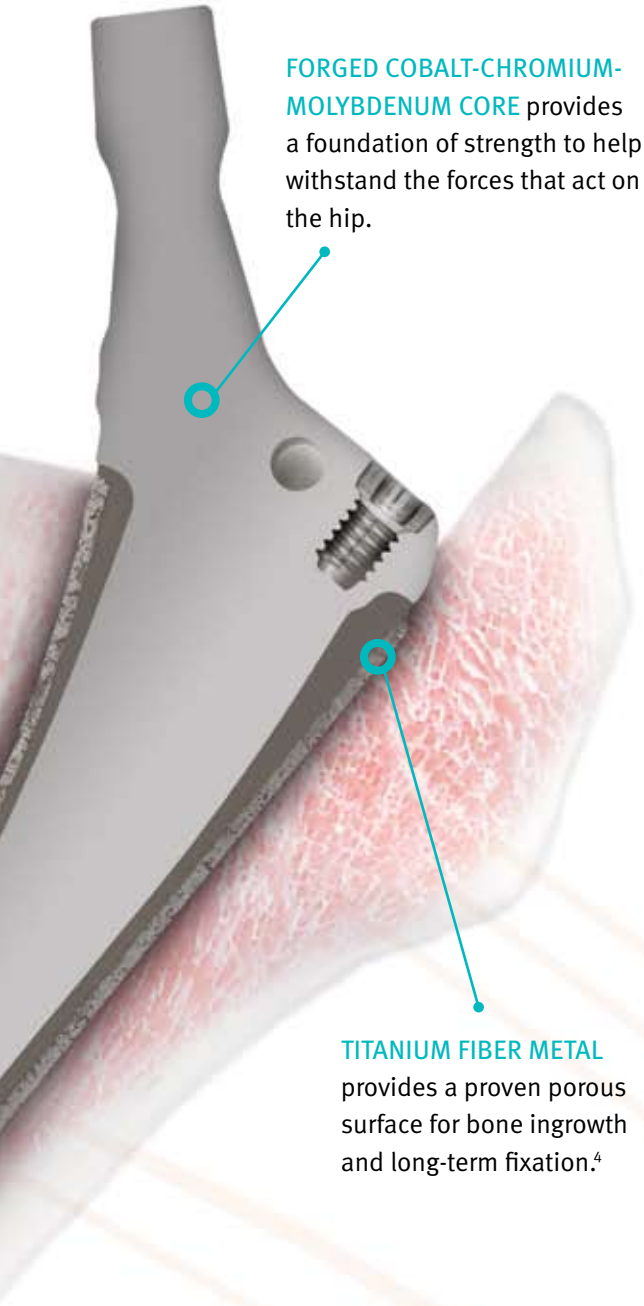
- 75% less stiff than cobalt-chromium (Co-Cr) alloy stems and 50% less stiff than titanium alloy stems to address thigh pain and reduce the risk of stress shielding[3]
- Extensively porous coated to provide both initial and long-term implant stability[3, 4]

Clinical Support

10 years of clinical data shows that *Epoch* Technology helps reduce the complications associated with modulus mismatch between the stem and the bone.[5]



POLYETHERETHERKETONE (PEEK) POLYMER MATRIX has a low modulus of elasticity to help the stem mimic the flexibility of the natural femur.*



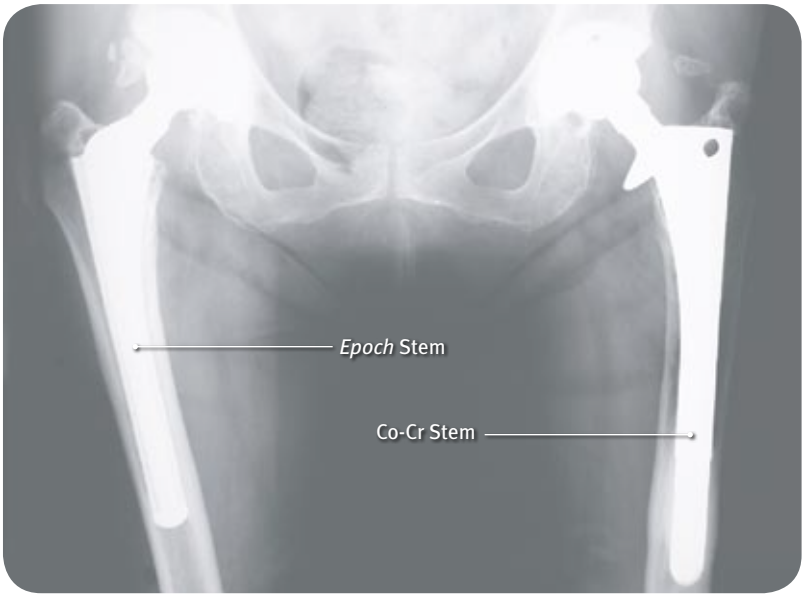
FORGED COBALT-CHROMIUM-MOLYBDENUM CORE provides a foundation of strength to help withstand the forces that act on the hip.

TITANIUM FIBER METAL provides a proven porous surface for bone ingrowth and long-term fixation.[4]

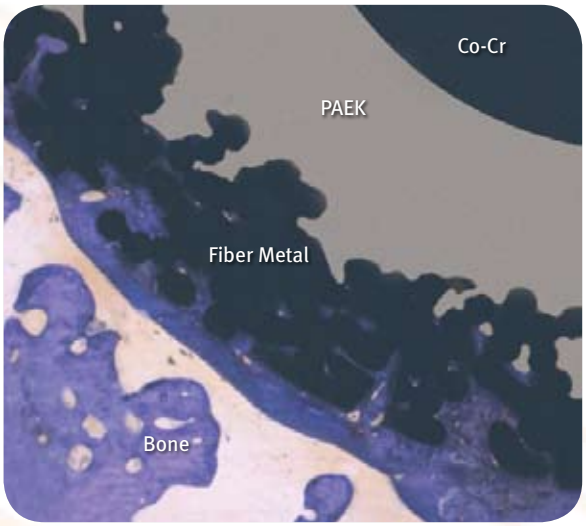
*PEEK is commonly used in implantable devices, and has undergone rigorous Zimmer mechanical and chemical characterization tests.

Radiographic and DEXA Analyses

show more than a 50 percent reduction in bone mineral density loss with the *Epoch* Stem compared to beaded Co-Cr alloy implants.[1]



79-year-old female 4 years after right THA with Epoch *Stem, and 9 years after left THA with extensively porous-coated Co-Cr alloy stem*



Retrieval analysis reveals extensive ingrowth with no evidence of fibrous ingrowth.[4] PAEK (polyaryletherketone) was used in the Epoch stem.

Clinically Proven Fiber Metal

offers an extensive surface for bone ingrowth to increase long-term mechanical stability. In a multicenter clinical study involving 72 patients (mean follow-up of 10 years)[3]:

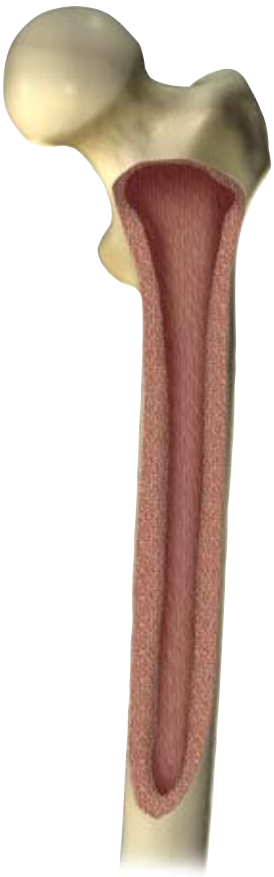
- None failed to achieve bone ingrowth
- None have required revision

Reducing stiffness... for all femur types.

The *VerSys Epoch* FullCoat Hip System offers a single solution for all patient anatomies, providing options that address the range of femur types.

The Dorr Femoral Bone classification system describes the variation in femoral anatomy. A comprehensive implant system should include implants that fit the wide variety of patient anatomies surgeons encounter. This includes the typical champagne-flute-shaped canal and the difficult-to-address stove pipe-shaped canal.[6]

Dorr Femoral Bone Classification



Dorr Type A with a champagne-flute canal — narrow canal with thick cortical walls (36% of all femora)

Dorr Type B — canal with moderate cortical walls (33% of all femora)

Dorr Type C with a stove pipe canal — wide canal with thin cortical walls (31% of all femora)

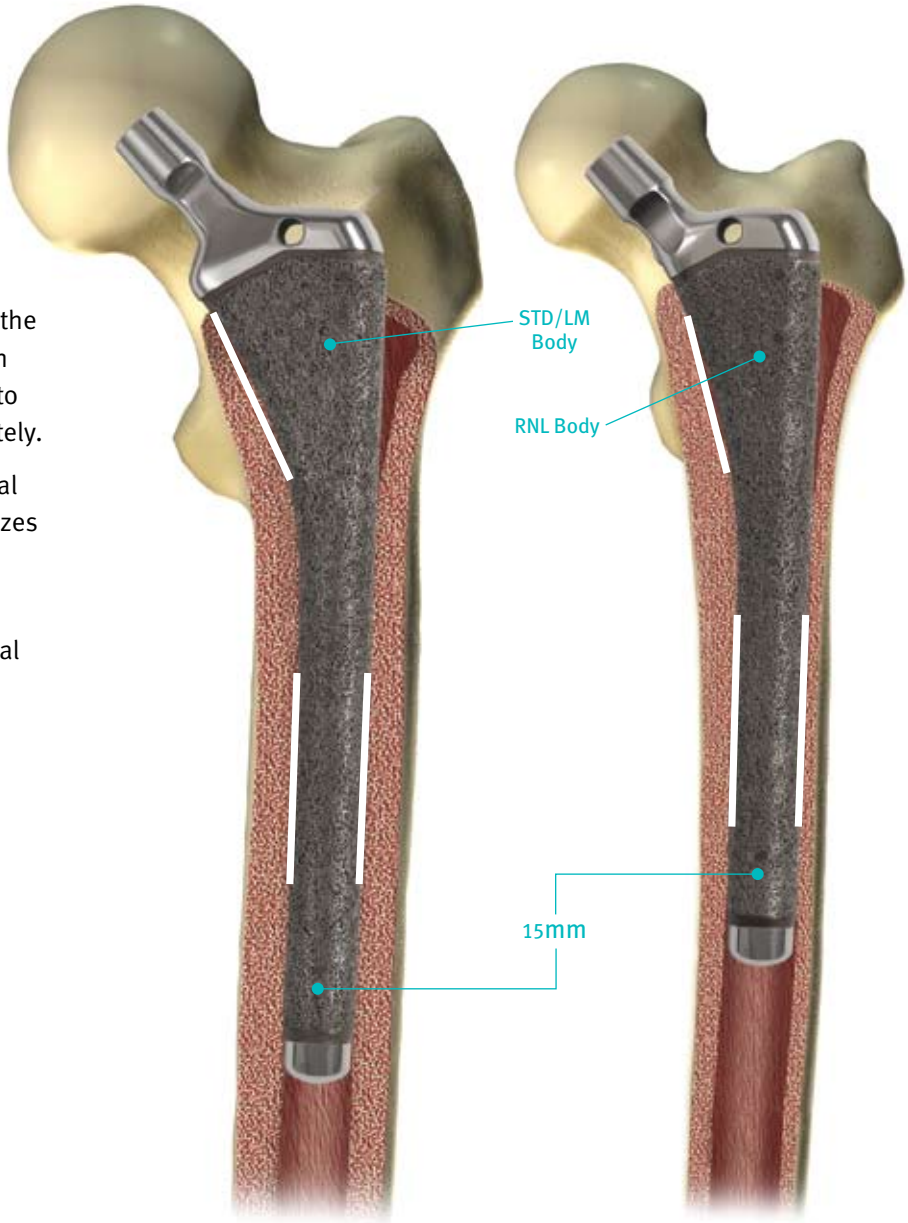
Sizes 13mm–22mm incorporate an innovative composite construction with a titanium fiber metal porous coating. Sizes 11mm–12mm are constructed of Co-Cr with a sintered Co-Cr beaded ingrowth surface.

Accommodating Fit and Function

The Dorr Type C femur is typically harder to address due to the enlarged diaphysis, and resulting proximal-distal mismatch. The *VerSys Epoch* FullCoat Hip System offers stems with three different metaphyseal body sizes. The standard and large metaphyseal (LM) bodies fit the champagne-flute canal. The reduced neck length (RNL) stems have reduced metaphyseal bodies to fit the stove pipe-shaped femur more appropriately.

- Multiple body options provide excellent canal fit without the stem seating proud. It minimizes the risk of leg lengthening, and the need for intraoperative adjustments.
- The reduced stiffness maintains bone mineral density which is especially important for the thinner cortical walls of the Type C femur.[1,2,4]

LARGE METAPHYSEAL OPTION helps the surgeon accommodate patients with proximal/distal femoral canal mismatch without compromising proximal fit and fill. The LM components add 4mm–5mm (compared to the standard body implants) in the area of the medial curve to help fill larger proximal-medial anatomies for a more stable arthroplasty.



The variations in patient anatomy require multiple options in implant sizing. Above left, Type A femur requires 15mm stem with standard or LM body. Above right, Type C femur requires 15mm stem with RNL body.

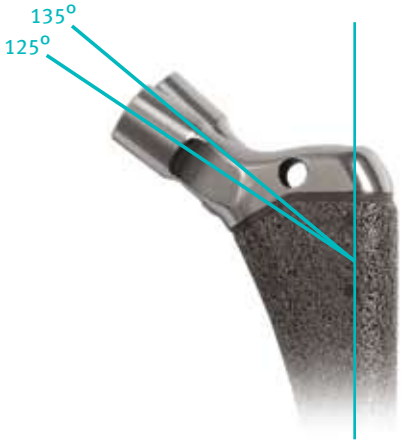
Reducing stiffness... while restoring kinematic function.

When fitting the enlarged diaphysis of the Type C femur, traditional implants may provide too much head height and offset. The *VerSys Epoch* System offers RNL and low head center (LHC) options to help restore proper head height and offset while achieving appropriate fit in both the metaphysis and the diaphysis.

The reduced head height and offset of the RNL stem better fits the Type C femur.

STANDARD, EXTENDED AND EXTRA-EXTENDED OFFSET OPTIONS offer the opportunity to achieve joint stability without increasing leg length.

LOW HEAD CENTER OPTIONS offer the opportunity to address patients with varus neck angles without increasing leg length.



REDUCED NECK LENGTH OPTIONS with smaller metaphyseal bodies and 125° or 135° neck angles offer the opportunity to reduce head height and offset when using a larger diameter stem.

REDUCED NECK GEOMETRY is designed to provide greater range of motion compared to other extensively porous-coated prostheses.

Instruments and features facilitate the surgical procedure

KEYED THREADED STEM INSERTER
provides a rigidly fixed construct during stem insertion that allows for rotational and axial control.

RNL SPECIFIC RASPS
mimic the shape of the implant to provide a more stable trial range of motion.

VERSION CONTROL FEATURE (VCF)
provides a tactile landmark to monitor anteversion of the stem during insertion.

COLLARLESS DESIGN
facilitates easier insertion through a smaller incision.

ZIMMER® MINIMALLY INVASIVE SOLUTIONS™ COMPATIBLE INSTRUMENTATION is compatible with a variety of approaches and surgical techniques, including:

- MIS Anterolateral Hip Procedure
- MIS *2-Incision*™ Hip Procedure
- MIS Posterior Hip Procedure
- MIS Mini-Anterolateral Hip Procedure

References

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2. Kärrholm J, Anderberg C, Snorrason F, et al. Evaluation of a femoral stem with reduced stiffness: a randomized study with use of radiostereometry and bone densitometry. *J Bone Joint Surg*. September 2002;9:1651-1658.
3. Data on file at Zimmer.
4. Akhavan S, Matthiesen MM, Schulte L, et al. Clinical and histologic results related to a low-modulus composite total hip replacement stem. *J Bone Joint Surg*. 2006;88:1308-1314.
5. White SP, Lee M, Learmonth I. Ten-year results of a composite total hip replacement stem in young patients. Presented at the EFORT Congress 2007.
6. Dorr LD, Faugere MC, Mackel AM, Guren TA, Bognar B, Malluche HM. Structural and cellular assessment of bone quality of proximal femur. *Bone*. 1993;14:231-242.

Please refer to package insert for complete product information, including contraindications, warnings, precautions, and adverse effects.

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