SAAS

SHORT MEDACTA STEM

Brochure

Joint | Spine | Sports Med

Medacta International

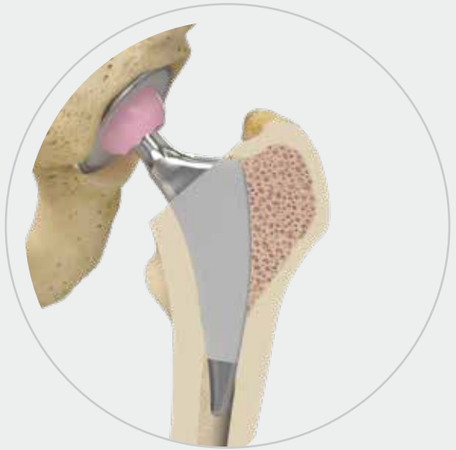
A MINIMALLY INVASIVE PRESERVING SOLUTION

SMS: SHORT MEDACTA STEM

Optimal reconstruction of the individual anatomy and biomechanics of each patient is a crucial part in THA. The **SMS femoral stem** has been designed to meet **today's THA challenges** in a growing patient population.[1]

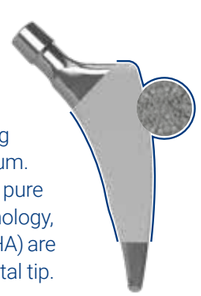
SMS is a **bone-preserving short metaphyseal-fitting cementless femoral stem**, designed to achieve a more **physiological proximal load transfer** and restore the **individual anatomy** of the patient.[2] The SMS's design has been determined and validated based on the analysis of anthropometric data of hundreds of 3D femoral models collected in the **MyBody database***.[3]

As part of the **P-Family Hip System**, together with AMIStem-P and QUADRA-P, **SMS** represents a **valuable solution** for patients with good bone quality, especially **young** and **active patients** with **Dorr A and B+ femurs**. SMS's **reduced length design** and **distinctive curvature** allow this stem to be the optimal choice for all MIS procedures, such as the **AMIS approach**.



MATERIAL

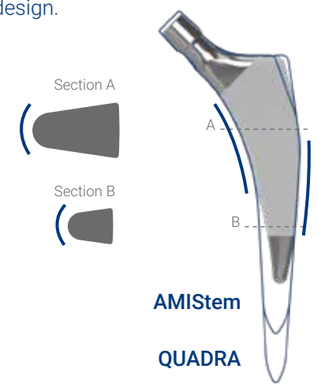
SMS is made of **Ti-6Al-7Nb Alloy** (ISO 5832-11) and is **sandblasted** along its length, producing a surface roughness between 2.5 and 6 µm. Subsequently, a 300 µm layer of **MectaGrip**, pure Titanium deposited via Plasma Spray (PS) technology, and an 80 µm outer coating of **hydroxyapatite** (HA) are applied on the shaft, except for the polished distal tip.



OPTIMIZED METAPHYSEAL FITTING

ANATOMICAL CURVATURE

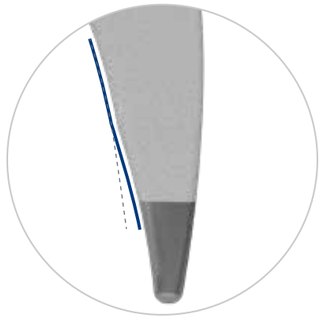
The distinctive **anatomical curvature** in the frontal and transverse planes has been conceived to allow for an optimal stem fit along the calcar arch, enhance load transfer laterally, and potentially reduce the risk of perioperative fracture.
The SMS's **anatomical calcar curvature** in the frontal plane is proven by the **successful clinical experience** of the AMIStem and QUADRA femoral stem design.



OPTIMIZED DISTAL SHAPE

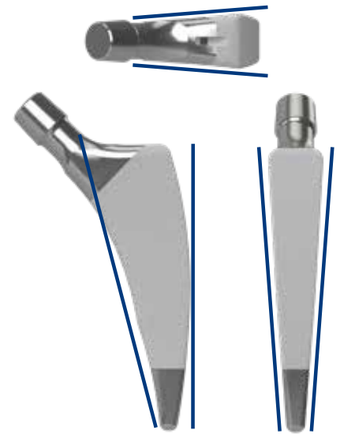
The distal curvature of the stem changes with a **medially-relieved distal geometry**, while keeping a **continuous lateral curvature**.

SMS's reduced distal geometry and shortened length allow for **easy insertion**, regardless of the surgical approach, **prevent distal fixation** and **minimize** the **risk of thigh pain**.



TRIPLE TAPERED DESIGN

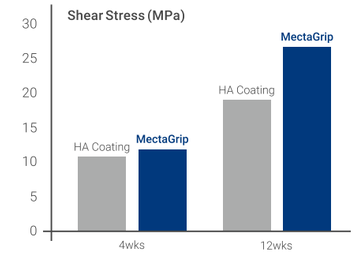
Triple tapered design with a **trapezoidal cross-section** provides axial and rotational stability, and a high fit & fill in the metaphysis, enabling proximal transfer of force.[4,5,6,7]



PERFORMANCE COATING

The **MectaGrip** coating enhances proximal fit at the metaphyseal level, and creates a stronger bone-implant interface, allowing for an **improved load transfer**.[4,8,9,10,11]

Professor William Walsh's animal study demostrates how a surface treated with MectaGrip coating can achieve a stronger bone-implant interface compared to a surface treated with hydroxyapatite only.[5]



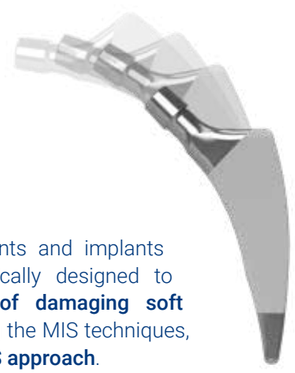
BONE PRESERVING

The SMS's **shortened stem length** and **reduced distal geometry** allow for **preservation of** more **bone tissue distally** than a traditional primary stem, while ensuring an **efficient restoration of the joint biomechanics** and **leaving more options** for any potential future revision surgery.

AMIS FRIENDLY DESIGN

The SMS's **reduced length design** and **distinctive curvature** allow this stem to be the optimal choice for all **MIS procedures**.

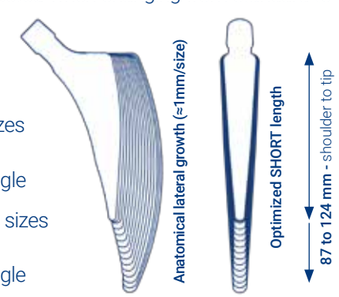
Both the instruments and implants have been specifically designed to **reduce the risk of damaging soft tissues** when using the MIS techniques, especially the **AMIS approach**.



EXTENSIVE SIZE RANGE

The SMS's **comprehensive product range** and **anatomically progressive head center growth** (≈1mm/size) help to obtain an **efficient restoration** of the **joint biomechanics** in a wider patient population.[12] **Vertical offset** does **not change** when adding lateral offset for each implant size; therefore, the **leg length** is **not affected** when changing from standard to lateralized stem.

- 15 STANDARD sizes (from 1 to 15) with 135° CCD angle
- 15 LATERALIZED sizes (from 1 to 15) with 127° CCD angle



REDEFINING THR: THE AMIS SYNERGY

The **anterior approach**, supported by years of clinical experience[13], is the only technique that follows an **intermuscular** and **internervous** path, potentially reducing the risk of damage to periarticular structures such as muscles, tendons, vessels and nerves. Convinced of the value of the anterior approach for improving **patient well-being**, but at the same time acknowledging the potential challenges in its adoption, **an international group of expert surgeons**, in collaboration with **Medacta**, set out to **optimize** and **standardize** the anterior approach, with the aim of making it more **straightforward** and enhancing its **reproducibility**.

The result of this collaboration was the **AMIS (Anterior Minimally Invasive Surgery)** technique, created in 2004, along with the development of dedicated instrumentation to facilitate the procedure. Today, the AMIS technique has evolved into the **AMIS Experience** and is now more than just a surgical technique. The AMIS Experience is a complete set of services that delivers **healthcare efficiencies**, including economic and commercial advantages, to the hospital and the surgeon. **SMS** will introduce you to Medacta International's world of the **AMIS Experience**.

REFERENCES

[1] Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR). Hip, Knee & Shoulder Arthroplasty Annual Report 2020, AOA, Adelaide. [2] J. Eijkenboom, P. Tomaszewski, D. Janssen, N. Verdonschot. Short Medacta Stem Pre-clinical assessment of bone remodeling and in growth potential - a finite element analysis. [3] Data on file: Medacta. [4] Moreau P. Cementless HA coated Quadra stem - 7 Years Clinical Outcomes. M.O.R.E. Journal, 2012 Jan; 2:3-6. [5] Zweymüller K. 20 years of Zweymüller cement free hip endoprosthesis. Jatros Orthopädie 1999 Dez; 5:2-7. [6] Heidelberg Lab-Report. Orthopädische Universitätsklinik Heidelberg, 2008. Data on file: Medacta. [7] Löhr JF, Schütz U, Drobny T, Munzinger U. Revision Arthroplasty with the SLR-Revision Shaft. 20 years of Zweymüller hip endoprosthesis, 4th Vienna Symposium. Zweymüller K (ed) – Bern; Göttingen; Toronto; Seattle: Huber, 2002. [8] Prof. W.R. Walsh. Evaluation of implant fixation in an ovine model. Data on file: Medacta. [9] Hardy DCR, Delince PE. Aspects Radiologiques de l'Arthroplastie Fémorale Revetue d'Hydroxyapatite et correspondence Histologiques Acta Orthop Belg. 1993; 59(1):229-334. [10] Hardy DCR, Frayssinet P, Delince PE. Projection d'Hydroxyapatite sur Prothèses Articulaires : Progrès ou Illusion ? Acta Orthop Belg. 1993; 59(1):98-103. [11] Fraissinet P, Hardy D, Conte P, Delince P, Guilhem A, Bonel G. Histological analysis of the bone-prosthesis interface after implantation in humans of prostheses coated with hydroxyapatite. [12] Piriou P, Bugyan H, Casalonga D, Lizée E, Trojani C, Versier G. Can hip anatomy be reconstructed with femoral components having only one neck morphology? A study on 466 hips. J Arthroplasty. 2013 Aug;28(7):1185-91. [13] AMIS Publication Review – M.O.R.E. Journal Supplement, April 2016. 99.98.publ rev.01.

** The CT and MRI scans contained in the "MyBody" database are anonymous and do not permit in any way the identification of patients. Medacta recognizes the importance of personal data protection and considers that preserving the confidentiality of personal data is one of the main objectives of its activity, in compliance with any applicable privacy law and regulation.*

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