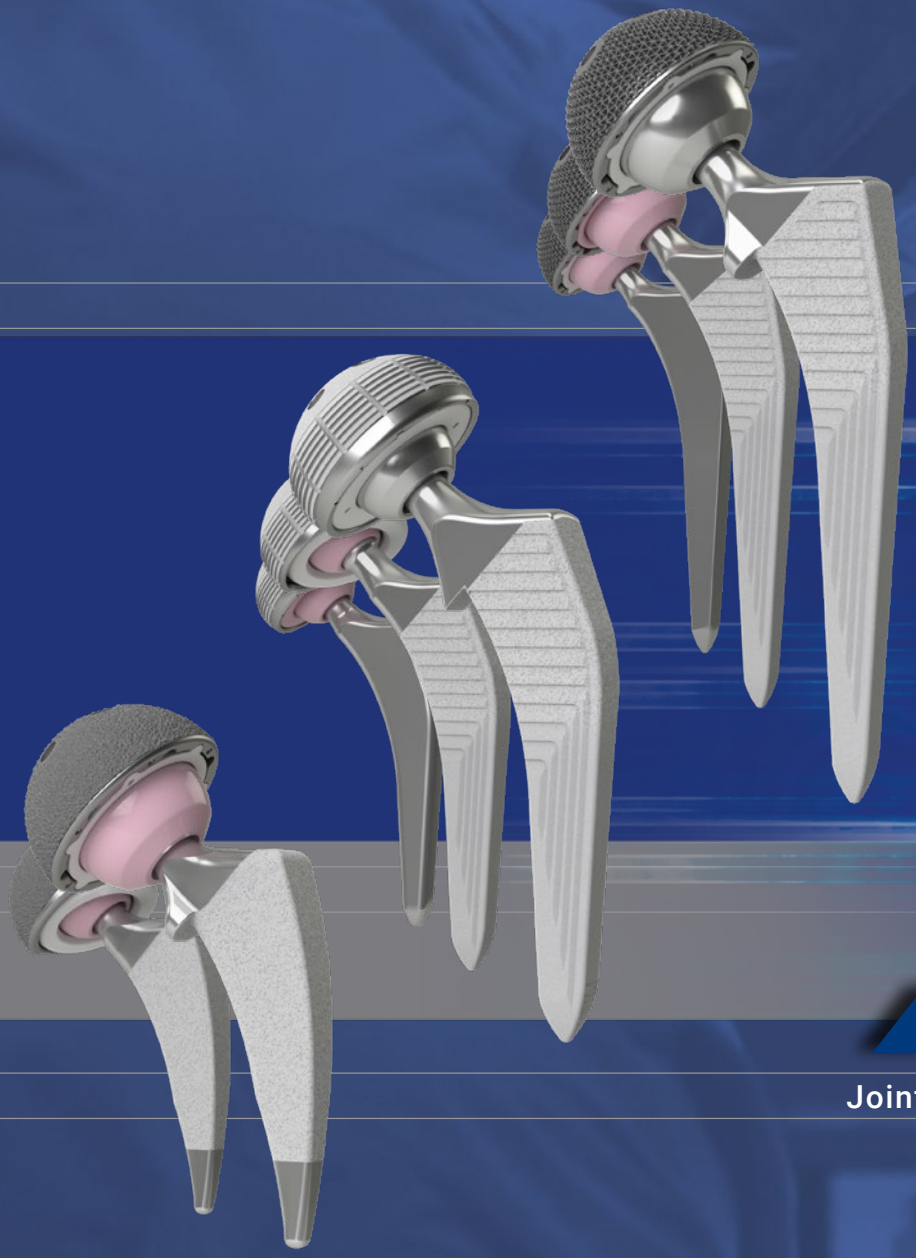
P-FAMILY

HIP SYSTEM

A COMPREHENSIVE SYSTEM OF CUTTING-EDGE RECTANGULAR TAPERED STEMS



Brochure

Joint | Spine | Sports Med

Medacta International

P-FAMILY *A COMPREHENSIVE SYSTEM OF CUTTING-EDGE RECTANGULAR TAPERED STEMS*

The restoration of the **individual hip anatomy and biomechanics** in a **heterogeneous population** is one of the **main challenges** that orthopaedic surgeons face today.[1]

With the **increasing number** of **THA** in **active** and **young** patients, **better performing implants** are required.[2] By always keeping in mind **patient care** and **well-being**, Medacta has developed the **P-Family Hip System** to **address** these **challenges**, helping surgeons to **achieve surgical excellence**.

The **P-Family Hip System** is a **comprehensive system** of **cutting-edge rectangular triple-tapered** stems featuring **three distinct** design options: **SMS**, **AMIStem-P** and **QUADRA-P**.

While **preserving** the **features important** to the **success of existing stem systems**, the **P-Family Hip System** was developed incorporating proven **innovative key features**.

1. **PERFORMANCE**
2. **PROXIMAL COATING**
3. **PROGRESSIVE NECKS**
4. **PATIENT MATCHING**

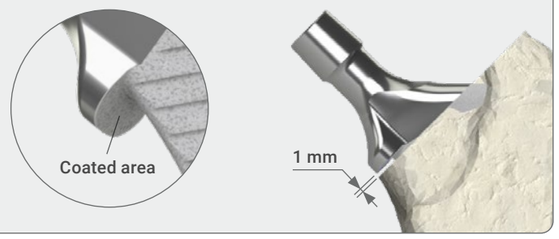
COMPREHENSIVE PRODUCT RANGE

EXTENSIVE STEM OPTIONS WITH AN EXTENDED SIZE RANGE

Available in **collared** and **collarless** versions, the **P-Family Hip System** features an **extended size range** to accommodate a **large scale** of patient anatomies. Small growth increments between sizes help ensure proper fit in the femur. **AMIStem-P** and **Quadra-P** are also available in a **cemented** and **short neck** options.

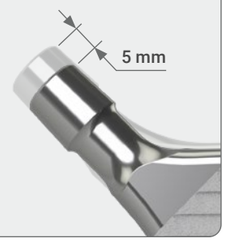
COLLAR OPTION

The collar is designed to be positioned at a **1 mm distance** from the **medial calcar**. In this condition, **load transfers** through the triple taper body of the stem and the **biomechanical behavior** are **identical** to a **collarless stem**. In the case of implant **subsidence**, the collar comes in contact with the calcar bone, thus contributing to **axial** and **rotational stability** of the stem.

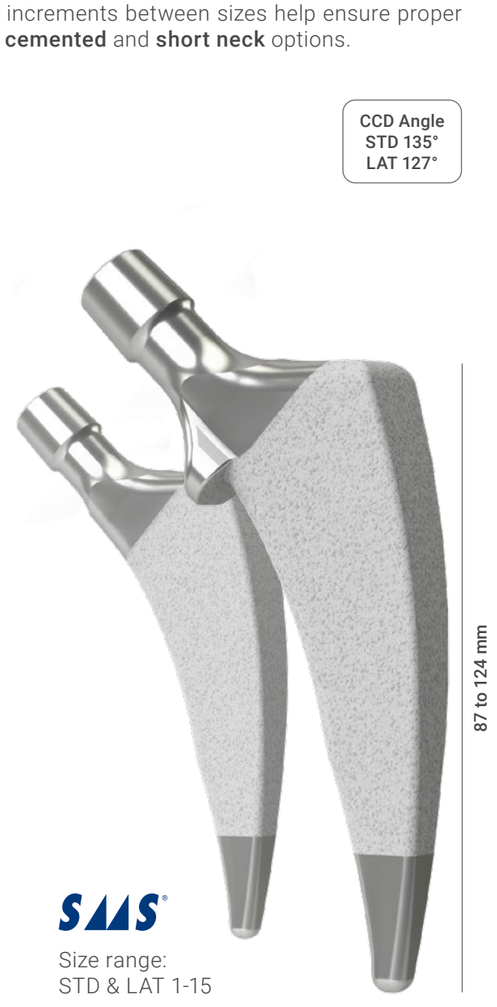


SHORT NECK OPTION

AMIStem-P and **Quadra-P** are also available in a **short-neck** version, allowing for **better restoration of the biomechanics** in **small patient anatomies**. The short neck is **5 mm shorter** with respect to standard neck.

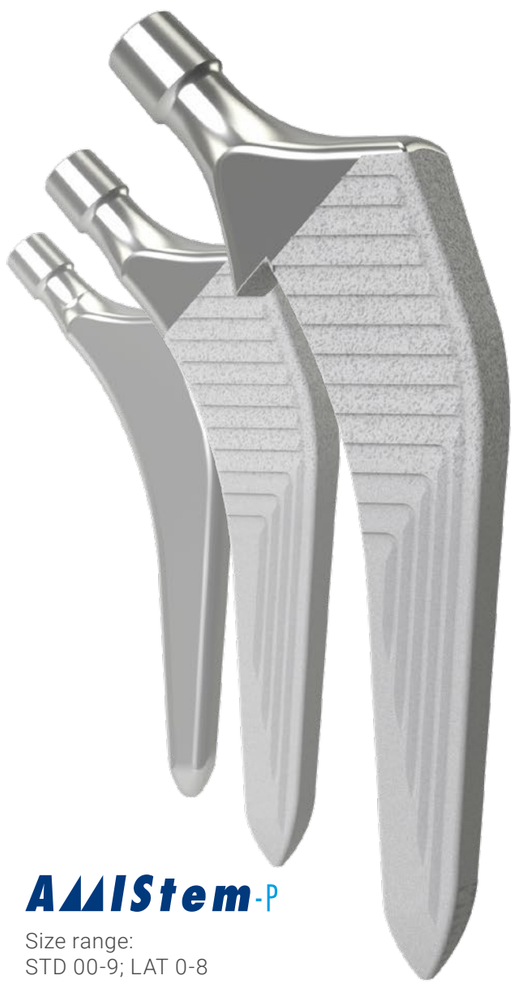


CCD Angle
STD 135°
LAT 127°



SMS®

Size range:
STD & LAT 1-15



AMIStem-P

Size range:
STD 00-9; LAT 0-8

QUADRA®-P

Size range:
STD 00-10; LAT 0-10

P-FAMILY *A COMPREHENSIVE SYSTEM OF CUTTING-EDGE RECTANGULAR TAPERED STEMS*

1 PERFORMANCE

P-stems are the **evolution** of **successful** and **proven femoral stem concepts** and are based on the **remarkable legacy and clinical heritage** of **Quadra-H** and **AMIStem-H**. Both stems demonstrate solid **ODEP** ratings[11,12] and **survivorship** data.

SUCCESSFUL CLINICAL HERITAGE

96.7% **survival rate*** for aseptic loosening at minimum **10 years**[6]
(F. Kalberer)

97.4% **survival rate** for any reason at minimum **7 years**[8]
(R. Field, C. Dora, E. Crawford)

100% **survival rate** for aseptic loosening at minimum **7 years**[7]
(P. Moreau)

99.6% **survival rate*** for aseptic loosening at minimum **10 years**[5]
(P. Zingg)

* All cases done through AMIS approach.

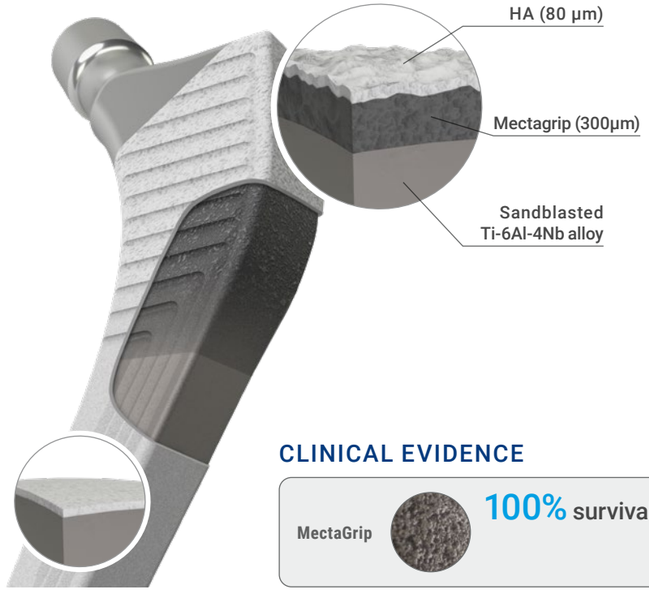
HERITAGE MEETS PROGRESS

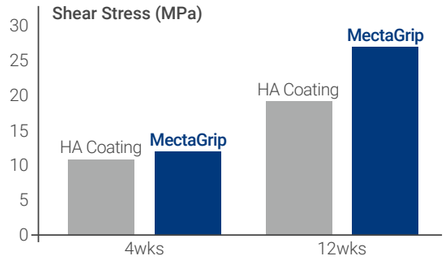
AMIStem-P

100% **survival rate** for asepting loosening at **2 years**.[10]
80% of cases performed using the **AMIS approach.**

2 PROXIMAL COATING

All the three systems are characterized by a state-of-the-art **MectaGrip proximal coating**, which is a layer of **plasma sprayed commercially pure titanium**. Designed to **enhance** both **initial** and **long-term stability**, it allows for an **improved load transfer**.[1,3] Finally, a thin outer layer of **hydroxyapatite (HA)** is applied to the **entire stem length**, except for the polished distal tip of the SMS.





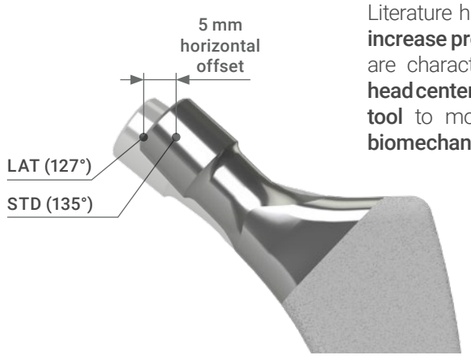
Professor **William Walsh**'s animal study **demostrates** how a **surface** treated with **MectaGrip coating** can achieve a **stronger bone-implant interface** compared to a **surface** treated with **hydroxyapatite only**.[3]

CLINICAL EVIDENCE

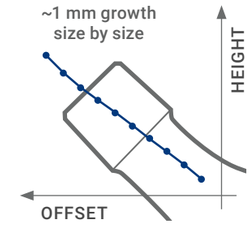
MectaGrip

100% **survival rate** for any reasons at minimum **5 years**.[9]
All cases performed using the **AMIS approach**.
(F. Laude)

3 PROGRESSIVE NECKS



Literature has shown that the **femoral offset** should **increase progressively** with the **stem size**.[4] **P-stems** are characterized by an **anatomically progressive head center growth**, offering the surgeon **an optimized tool** to more efficently restore the **individual hip biomechanics** in a **wide** patient population.



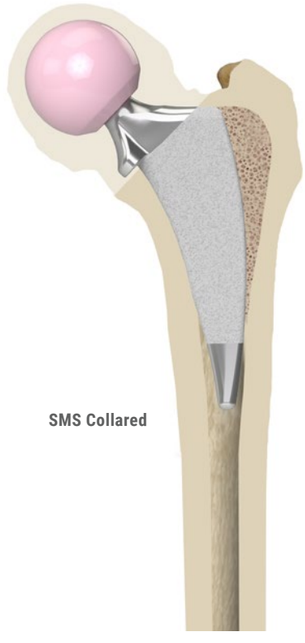
DOUBLE OFFSET OPTIONS

The vertical offset **does not change** when adding 5 mm of lateral offset for each size implant, therefore the **leg length is not affected** when changing from standard to lateralized.

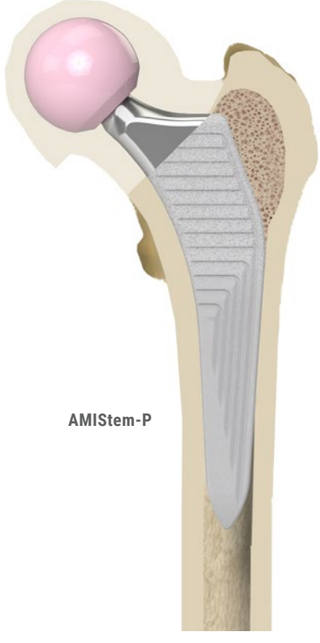
4 PATIENT MATCHING

By taking advantage of the **P-Family Hip System**, which is offered in varying shapes, canal filling dimensions, lengths, collared, collarless and cemented versions, the surgeon has the ability to **select** a **stem** that **best matches** each individual patient's **femoral morphology** and **bone quality**, specifically **addressing Type A**, **B** and **C** femurs according to the **DORR classification** and thereby allowing for a **more personalized THA**.[13]

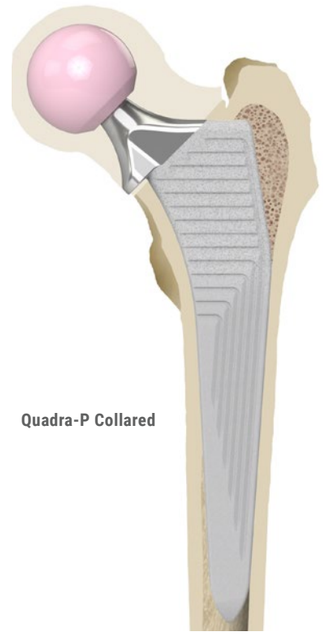
DORR A
Narrow femoral canal
Thick cortical walls



DORR B
Moderate femoral canal
Moderate cortical walls



DORR C
Thick femoral canal
Narrow cortical walls



The image above does not represent a differentiation of indications by the manufacturer. It is a representation prepared by one specific customer.

P-FAMILY *A COMPREHENSIVE SYSTEM OF CUTTING-EDGE RECTANGULAR TAPERED STEMS*

STREAMLINED INSTRUMENTATION

ONE TRAY IS ENOUGH!

One single instrument platform is sufficient for each **P-Family Hip System**. **Intuitive**, **simple** and **reproducible broach-only** surgical technique, developed to **maximize** the operating room **efficency**. **Several instrument configurations** have been designed **to be compatible** with the **THA approach** preferred by each **surgeon**.

HIGH OPERATIVE FLEXIBILITY

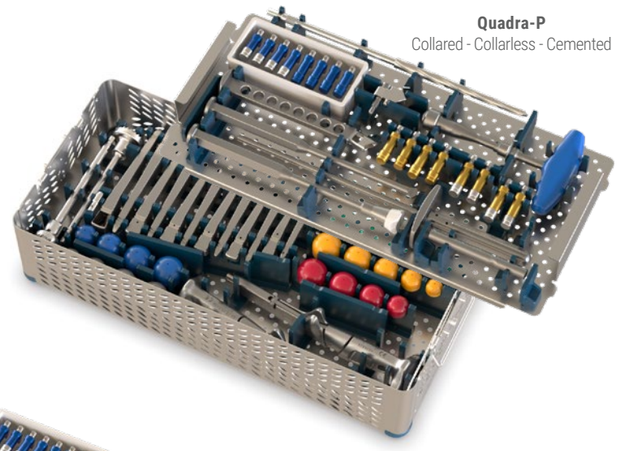
Regarding **AMIStem-P** and **QUADRA-P**, the surgeon has the possibility to **switch** from a **press-fit** to a **cemented** stem by using the **same tray**, **providing** a **high intra-op flexibility**.

MINIMALLY INVASIVE

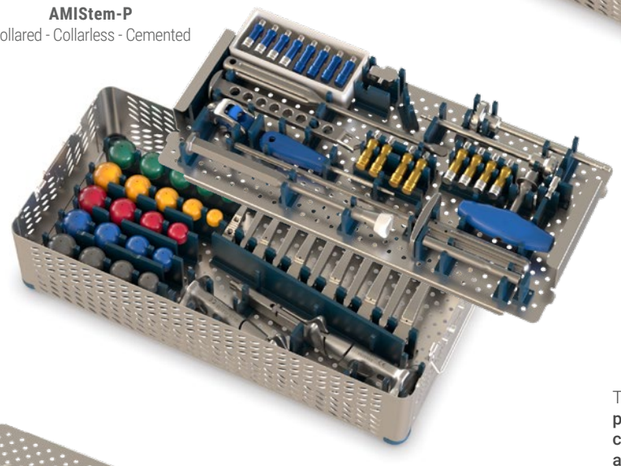
Both the **implants** and the **instruments** have been **designed** to **reduce the risk of damaging the soft tissues** when using the MIS techniques, especially the **Anterior Minimally Invasive Surgery (AMIS)** approach.

AMIS FRIENDLY

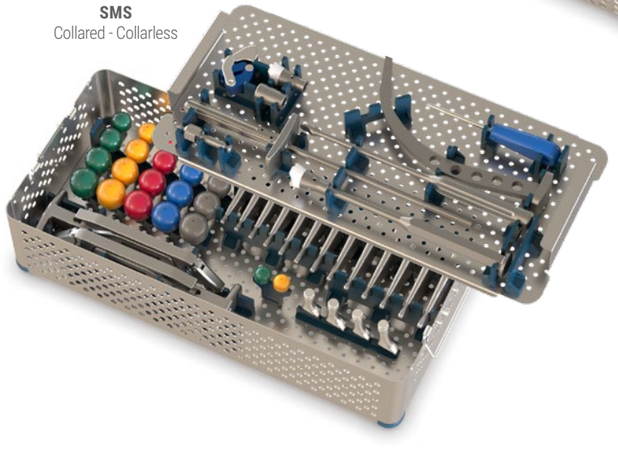
Quadra-P
Collared - Collarless - Cemented



AMIStem-P
Collared - Collarless - Cemented



SMS
Collared - Collarless

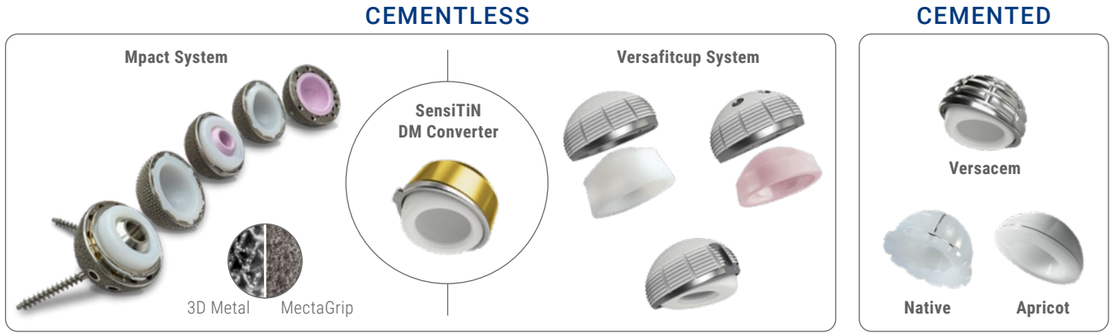


The **P-Family rasps** ensure a **precise preparation** of the **femoral canal**, aiming for a **stable** and **accurate** positioning of the implant.

Several **broach handle options** are available to accommodate **modern surgical approaches**.

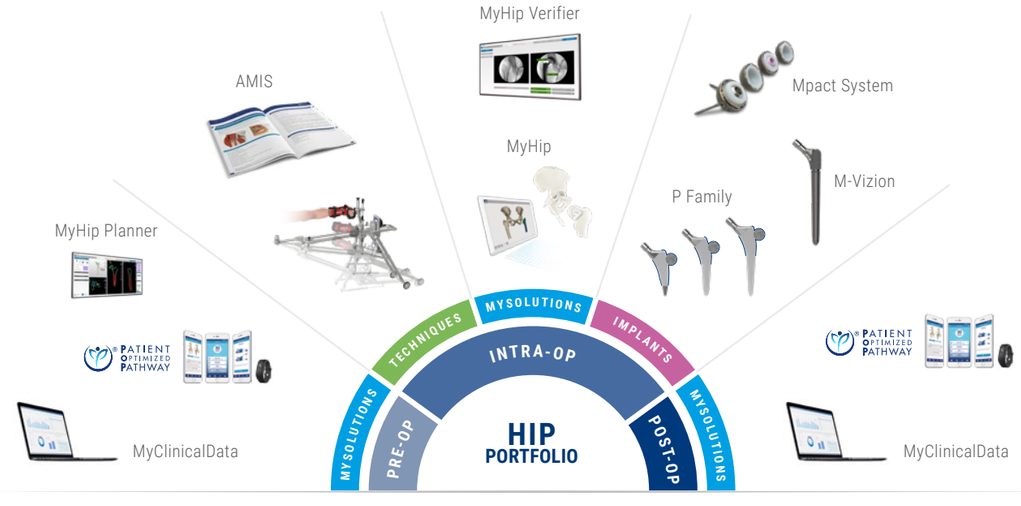
MULTIPLE ACETABULAR OPTIONS

All **P-stems** can be used alongside any of the **Medacta acetabular shells & liners**.



PERSONALIZED SOLUTIONS IN HIP REPLACEMENT

The **P-Family Hip System** represents the core of the **Medacta Hip Implants portfolio**. The Medacta offering embraces a **Personalized Medicine Vision** with a comprehensive platform for a personalized care experience with a **Holistic Approach**. **Innovative implants**, **surgical technique** and **technologies** bring value throughout the **entire patient journey**.



REFERENCES

[1] Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR). Hip, Knee & Shoulder Arthroplasty Annual Report 2022. https://aoanjrr.sahmri.com/annual-reports-2022. Figure HT2; Table and Figure HT17. [2] AAOS American Joint Replacement Registry 2021 Annual Report. Table and Figure 2.2. [3] Walsh WR et al, Bone ongrowth and mechanical fixation of implants in cortical and cancellous bone. Journal of Orthopaedic Surgery and Research (2020) 15:177. https://josr-online.biomedcentral.com/track/pdf/10.1186/s13018-020-01696-5 Comparison of titanium coatings for cementless fixation in an ovine model – Medacta M.O.R.E. Journal White Papaer (October 2019) – Pr. Walsh study. [4] 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. [5] Rahm S, Tondelli T, Steinmetz S, Schenk P, Dora C, Zingg PO. Uncemented Total Hip Arthroplasty Through the Direct Anterior Approach: Analysis of a Consecutive Series of 275 Hips With a Minimum Follow-Up of 10 Years. J Arthroplasty. 2019 Jun; 34(6):1132-1138. [6] Kalberer F. "Retrospective and prospective study to evaluate the AMISTEM H performance", study approved by Swiss Ethic (Zurich canton) on 24 of March 2016 (BASEC-Nr 2015-00132). Data on file: Medacta. [7] P. Moreau. Cementless HA coated Quadra stem. 7-YEAR CLINICAL OUTCOMES. Data on file: Medacta. [8] R. Field R, C. Dora, E. Crawfurd. AMIStem-H ODEP study results 7-Year Preliminary Clinical Outcomes. Data on file: Medacta. [9] Viamont-Guerra, M.-R. et al. (2022) "Effect of femoral stem surface coating on clinical and radiographic outcomes of cementless primary total hip arthroplasty: A patient-matched retrospective study," International Orthopaedics, 47(1), pp. 165–174. Available at: https://doi.org/10.1007/s00264-022-05629-1. [10] K. Bashti, E. Meyer, D. Hartmann, F. Tovagliaro, A. Nebunescu-Schirliu. 2-year Preliminary Clinical Outcome - Fr Multicentric Study. Data on file: Medacta. [11] Amistem Hap (2022) NEC ODEP. Available at: https://www.odep.org.uk/product/amistem-hap/. [12] Quadra H (2022) NEC ODEP. Available at: https://www.odep.org.uk/product/quadra-h/. [13] Patient matching femoral implants for tha – one stem type does not fit all (no date) MEDACTA TV. Available at: https://more.medacta.tv/videos/hip-video/patient-matching-femoral-implants-for-tha-one-stem-type-does-not-fit-all.

REDEFINING BETTER
IN ORTHOPAEDICS
AND SPINE SURGERY

MEDACTA.COM

Medacta
International

Medacta International SA
Strada Regina, 34 - 6874 Castel San Pietro - Switzerland
Phone +41 91 696 60 60 - Fax +41 91 696 60 66
info@medacta.ch

Find your local dealer at: medacta.com/locations

P-Family
Leaflet

ref: 99.PFAM.11
rev. 00

Last update: January 2023