DESIGN RATIONALE

aSPHERE™
Contoured Metal Heads

never stop moving™

DePuy
Orthopaedics Inc.
a Johnson & Johnson company

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ADVANCED TRIBOLOGY

PLANNING AHEAD WITH aSphere™ TECHNOLOGY

Precision contoured aSphere™ heads approximate the shaping that occurs during the in vivo run-in wear phase. This advanced design incorporates a wear-resistance zone, so patients may experience a substantial decrease in metal wear debris and ion release when compared to conventional metal-on-metal designs. Combined with DePuy TrueGlide™ technology, the aSphere head helps facilitate a more fluid range of natural motion for patients.

PRE-CONTOURED TO RESIST WEAR

Contouring of the aSphere™ head significantly reduces run-in wear that typically occurs in patients. The exclusive design and precision manufacturing of aSphere heads reduce metal wear debris by 80 percent when compared to DePuy Ultamet® metal bearings.[3]

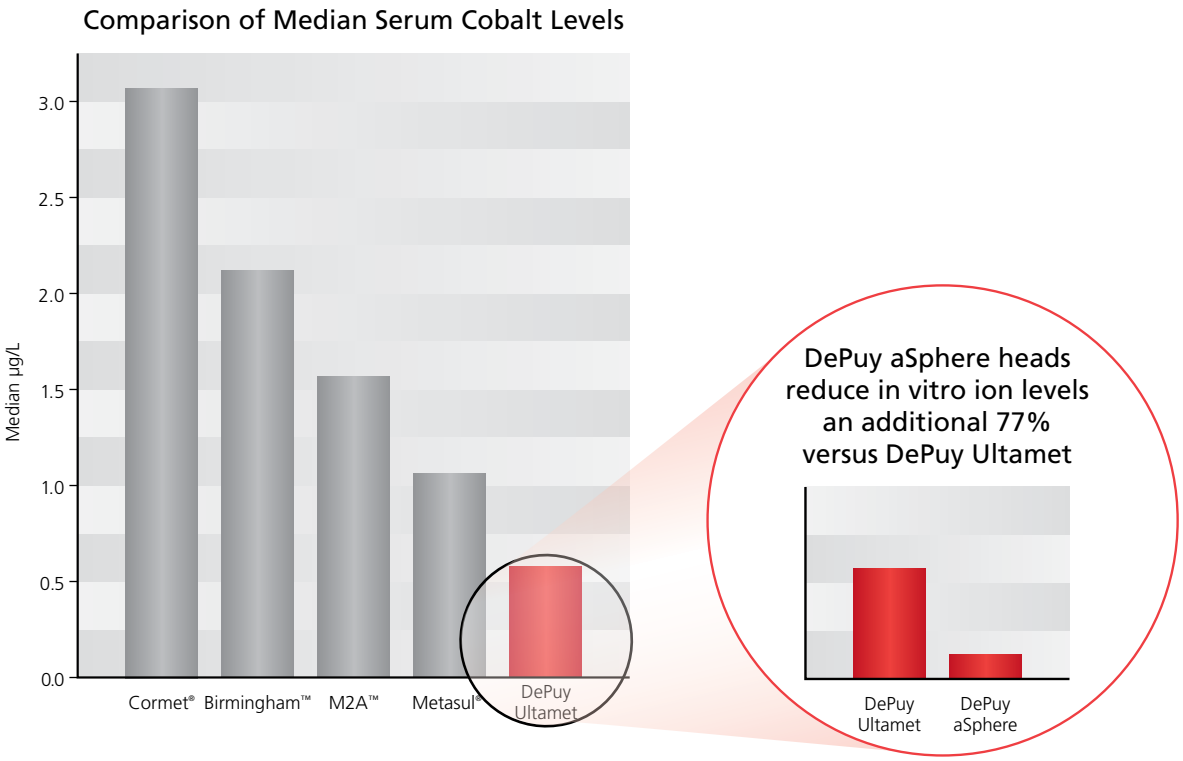
80% Wear Reduction

Reduced wear claims are based on the results of in vitro hip wear simulator tests which have not been shown to quantitatively predict clinical performance

aSPHERE™ Contoured Metal Heads

PRE-CONTOURED TO REDUCE IONS

By minimizing the run-in wear of a metal bearing, aSphere heads reduce metal ion release by 77 percent when compared to industry-leading DePuy Ultamet metal bearings.[3]



ARTICULATION AREA FOR COMMON ACTIVITIES[7]

Slow Walking

Normal Walking

Fast Walking

Walking Up Stairs

Walking Down Stairs

Knee Bend

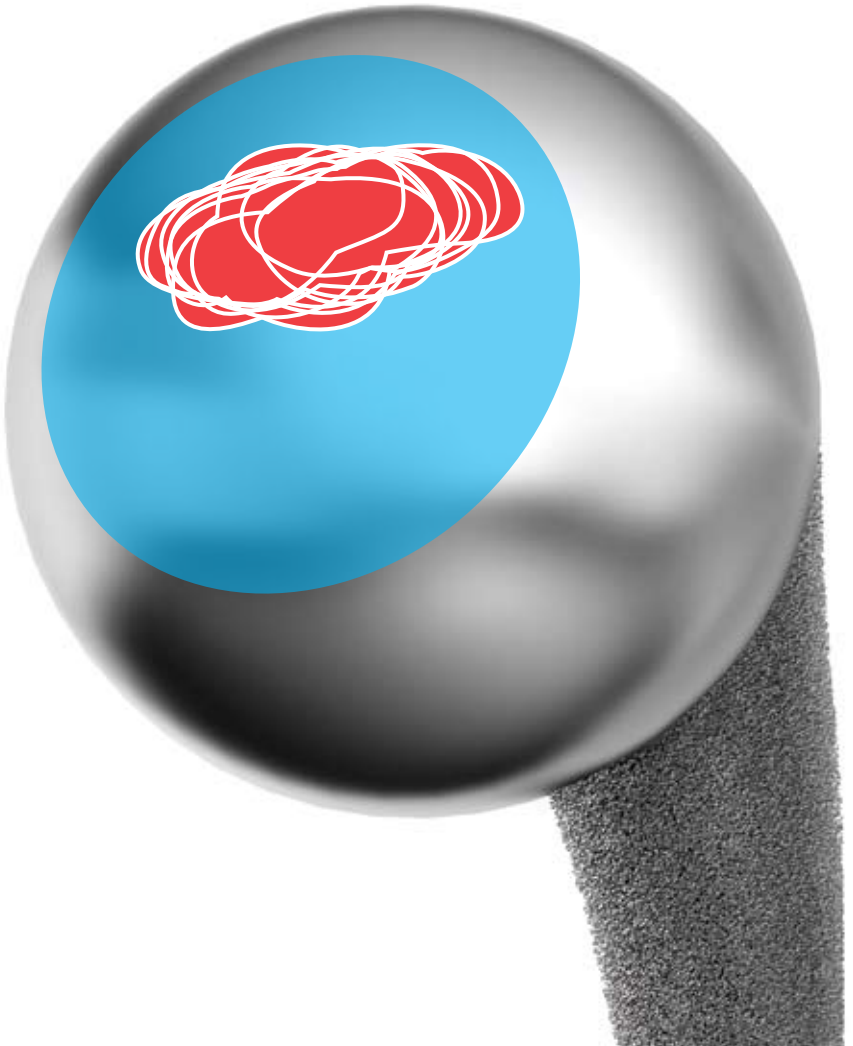
Sitting Down

Standing Up

Standing

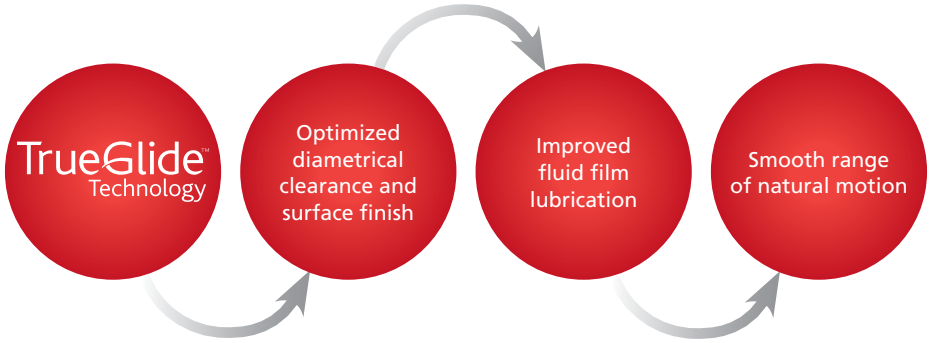
The pre-contoured zone of aSphere™ heads encompasses the areas of greatest and most frequent contact during routine activities.[7] By significantly decreasing metal wear debris and ion release within the primary contact zone, the aSphere head is designed to optimize wear resistance and long-term performance.

The red zones identify articulation patterns and measured mechanical loading on the femoral head in patients engaged in daily activities.[7]



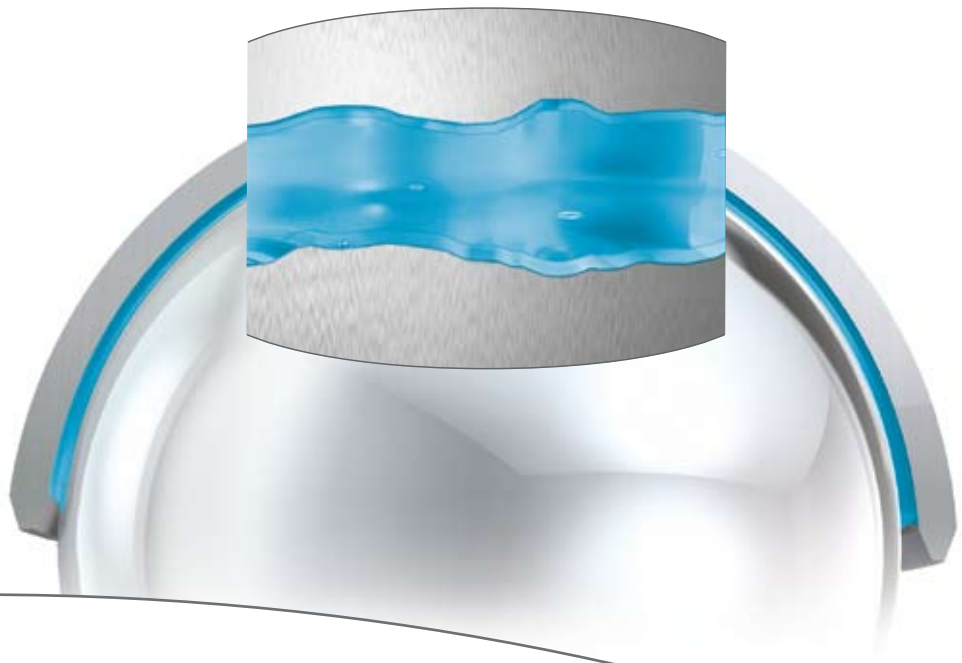
FLUID RANGE OF NATURAL MOTION

All DePuy metal-on-metal bearings feature TrueGlide™ technology, which enhances performance with smooth, natural motion and less friction. Advanced tribology is the science behind this innovation, and the main reason for improved wear resistance over conventional technology. TrueGlide technology optimizes the diametrical clearance and surface finish of the implant, allowing the body to create a thin film of synovial fluid, enabling bearing lubrication and reducing wear. The result is a smooth, more fluid range of natural motion.



Improved Wear Resistance

Bearing surfaces are fully separated and the load fully supported by the lubricating fluid.



IMPROVED LUBRICATION PROMOTES HEALTHY JOINTS

Synovial fluid fully separates and lubricates the load-bearing surfaces in a healthy joint. TrueGlide technology helps establish fluid film lubrication between bearing surfaces to minimize wear. Extensive laboratory testing demonstrates that large bearing diameter and low diametrical clearance can dramatically decrease metal wear debris and metal ions.[4,5]

Conventional Boundary Lubrication

Substantial direct interaction between surfaces. Lubrication is provided by slippery molecules adhering to surfaces.

Conventional Mixed Lubrication

Load is partially supported by the lubricating fluid but with some direct interaction between surfaces, requiring boundary lubrication.

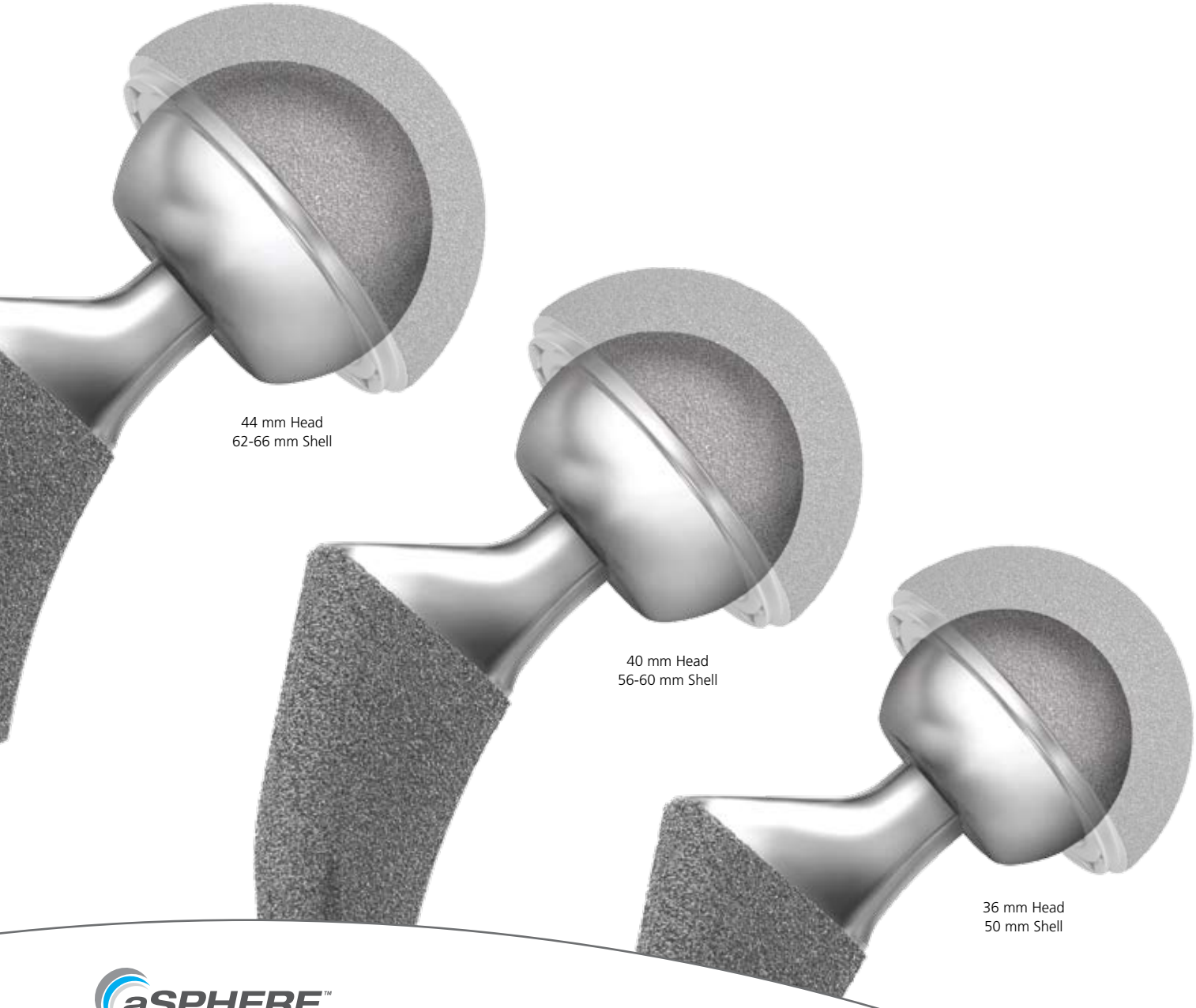
ADVANCED STABILITY

HIGH STABILITY, LOW WEAR

DePuy aSphere™ 36, 40 and 44 mm heads are engineered to increase stability and reduce wear. Optimized head-to-shell ratios with aSphere heads in the Pinnacle® Acetabular System enable increased jump distances, which reduce the risk of dislocation and provide up to 159 degrees of motion.[3]

DESIGNED TO ACHIEVE STABILITY

DePuy aSphere™ components, offered in a full spectrum of sizes, optimize the head-to-shell ratio to create a stable joint that also moves freely. The broad range of head and shell sizes optimizes the match for your patients: a large head that resists dislocation within a shell that is designed to preserve acetabular bone.



CORRECT CUP PLACEMENT

Correct Position

Cups which are placed in the optimum inclination of 40-45 degrees, and version of 15-20 degrees, provide the correct cup alignment allowing for proper loading of the bearing, which provides a significant reduction in wear during both the run-in and steady-state phases.[11-13]

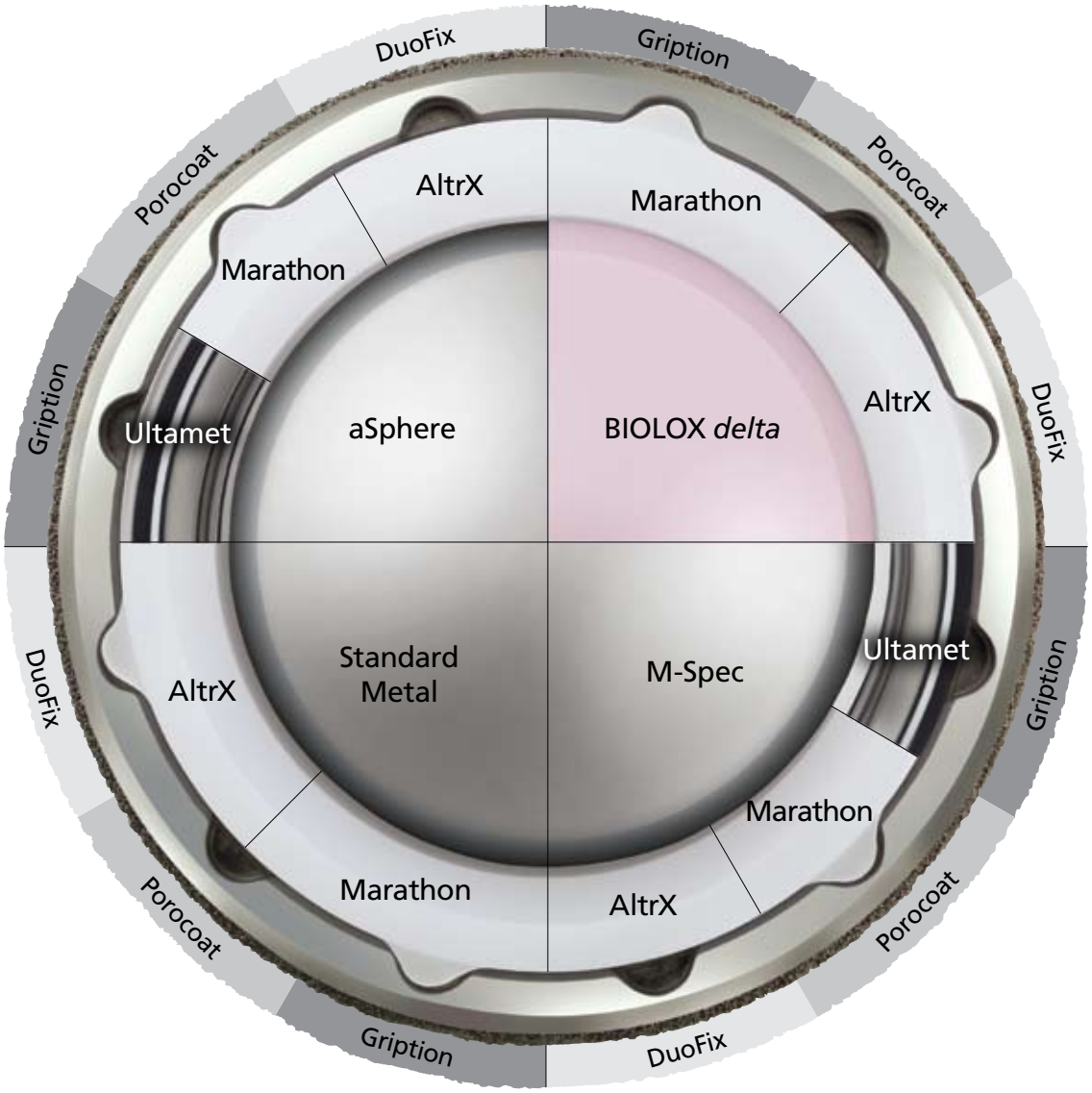
Incorrect Position

A cup abduction angle above 45 degrees, or combined anteversion greater than 20 degrees, increases the contact zone between the head and the rim of the cup causing edge loading, which adversely affects loading of the bearing and increases wear rates.

ADVANCED MODULARITY

FREEDOM TO CHOOSE

DePuy aSphere™ heads expand DePuy Pinnacle® Hip Solutions to provide the largest selection of advanced bearing technologies and biological and mechanical fixation alternatives. With more implant designs and choices than any competitive system, you'll never have to compromise when meeting the individual needs of patients.



ADVANCED SOLUTIONS

INNOVATIONS FROM DePuy

DePuy supports the implant process at every level:

- Advanced materials
- Less invasive techniques
- Advanced instrumentation
- Computer-assisted surgery
- Exceptional survivorship[6]

CAS HIP SOLUTIONS

Computer-assisted surgery (CAS) has changed orthopaedic operating rooms for years. Why should total hip surgery be any different? Explore the options to achieve reproducible cup placement, visualized reaming/broaching, combined anteversion hip solutions, and many other exciting new hip CAS advancements. When performing a CAS Total Hip Arthroplasty (THA), another intraoperative solution is accurate determination of leg length and offset calculations along with a software system that fully incorporates DePuy components.

ANTERIOR APPROACH

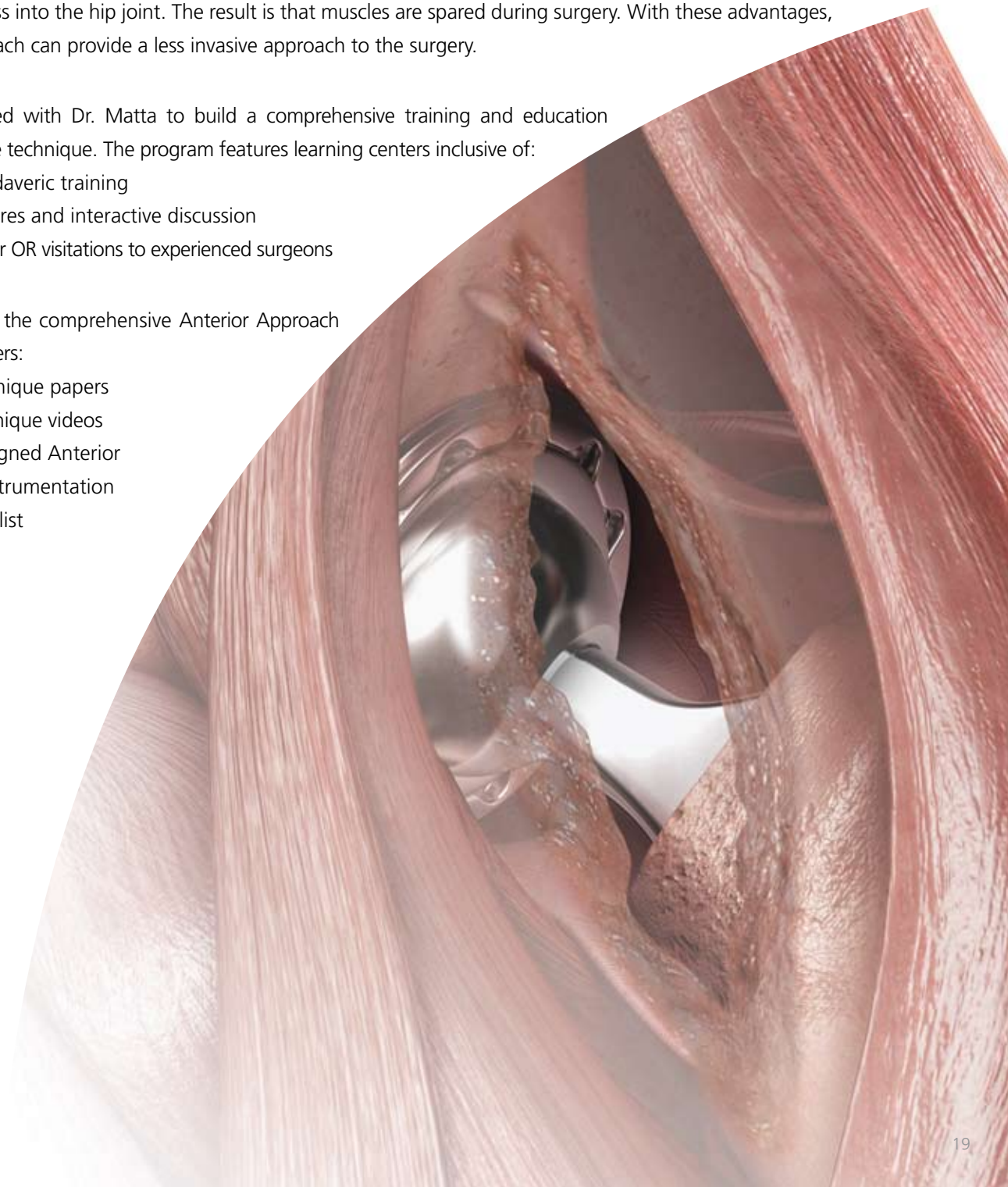
The Anterior Approach for Total Hip Replacement, as described by Joel Matta, MD, is an advanced application of the Smith-Petersen approach using the PROfx™ or hana™ table from Mizuho OSI. The technique does not cut any muscles, but separates them to allow access into the hip joint. The result is that muscles are spared during surgery. With these advantages, the Anterior Approach can provide a less invasive approach to the surgery.

DePuy has partnered with Dr. Matta to build a comprehensive training and education program around the technique. The program features learning centers inclusive of:

- Hands-on cadaveric training
- Didactic lectures and interactive discussion
- Advocation for OR visitations to experienced surgeons

To further augment the comprehensive Anterior Approach program, DePuy offers:

- Surgical technique papers
- Surgical technique videos
- Specially designed Anterior Approach instrumentation
- A field specialist



DePuy ASR™ XL

DePuy ASR™ XL delivers advanced, extra-large-diameter, metal-on-metal bearings with exacting tolerances. They accommodate a wide range of head and cup sizes, and are manufactured and designed to decrease the risk of dislocation.

Clinically proven DePuy ASR XL features DePuy's exclusive TrueGlide™ technology, which promotes bearing lubrication and increased wear resistance. TrueGlide technology optimizes the diametrical clearance and surface finish of the implant allowing true fluid film lubrication between bearing surfaces. This, in turn, provides patients with a smooth range of natural motion.

The DePuy ASR XL is available for use with cemented and cementless 11/13 and 12/14 taper DePuy stems, promoting high function and fewer dislocations.

99.2%

ASR XL Survivorship with DuoFix®[10]

Tiny round beads and HA coating encourage fast, deep biological tissue in-growth in the porous coating.[8,9]

COMPLETE FEMORAL SOLUTIONS

DePuy aSphere™ Contoured Metal Heads are fully compatible with DePuy's complete line of advanced femoral stems. These options provide an implant that suits the surgeon's preferred technique and the patient's natural anatomy. Each implant is rooted in proven clinical heritage, while unique design elements make these stems the most advanced available today.

- AML,® with Porocoat® Porous Coating, was the first cementless primary femoral stem and continues to produce successful clinical results after 30 years.
- S-ROM® provides stem modularity and gives the surgeon flexibility for matching the patient's natural anatomy.
- Summit,™ a proximally fixated stem, anatomically loads the bone to help prevent stress shielding.
- The Corail® compaction broaching stem not only preserves bone, but also enables surgical approaches that would prove difficult with other systems.
- The latest advance in DePuy's hip stem portfolio is the Tri-Lock® Bone Preservation Stem. The unique features of this stem enable the preservation of both bone and soft tissue. The Tri-Lock® Bone Preservation Stem provides exceptional stability and aids in restoring high-level function.

ORDERING INFORMATION

aSphere™ CONTOURED METAL HEADS

Articul/Eze® 12/14

36 mm	1365-50-100	aSphere M-Spec -2
	1365-51-100	aSphere M-Spec +1.5
	1365-52-100	aSphere M-Spec +5
	1365-53-100	aSphere M-Spec +8.5
	1365-54-100	aSphere M-Spec +12
	1365-55-100	aSphere M-Spec +15.5
40 mm	1365-04-100	aSphere M-Spec -2
	1365-05-100	aSphere M-Spec +1.5
	1365-06-100	aSphere M-Spec +5
	1365-07-100	aSphere M-Spec +8.5
	1365-08-100	aSphere M-Spec +12
	1365-09-100	aSphere M-Spec +15.5
44 mm	1365-60-100	aSphere M-Spec -2
	1365-61-100	aSphere M-Spec +1.5
	1365-62-100	aSphere M-Spec +5
	1365-63-100	aSphere M-Spec +8.5
	1365-64-100	aSphere M-Spec +12
	1365-65-100	aSphere M-Spec +15.5

S-ROM® 11/13

36 mm	1365-26-100	aSphere M-Spec -3
	1365-31-100	aSphere M-Spec +0
	1365-32-100	aSphere M-Spec +3
	1365-33-100	aSphere M-Spec +6
	1365-34-100	aSphere M-Spec +9
	1365-36-100	aSphere M-Spec +12
40 mm	1365-41-600	aSphere M-Spec -3
	1365-42-600	aSphere M-Spec +0
	1365-43-600	aSphere M-Spec +3
	1365-44-600	aSphere M-Spec +6
	1365-45-600	aSphere M-Spec +9
	1365-47-600	aSphere M-Spec +12
44 mm	1365-61-600	aSphere M-Spec -3
	1365-62-600	aSphere M-Spec +0
	1365-63-600	aSphere M-Spec +3
	1365-64-600	aSphere M-Spec +6
	1365-65-600	aSphere M-Spec +9
	1365-66-600	aSphere M-Spec +12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