

Understanding Hip Implant Options



Cup
(Socket)



Bearing
(Liner)



Head
(Ball)



Stem
(Femur)



Modern Hip Implants

Metal Femoral Head on Marathon[®] Cross-linked Polyethylene Liner

Proven materials

Polyethylene has been available for over 25 years and provides a wide range of intraoperative choices to optimize joint stability while balancing wear performance with function.



Product notes

Range of Motion	Good Up to 142°, vital for the advanced restoration of biomechanics
Stability	Excellent Designed to accommodate multiple liner configurations for optimized joint stability
Wear	Advanced Patented manufacturing processes maintains key mechanical properties while reducing wear ¹

Metal
Polyethylene

BILOX[®] *delta* Ceramic Femoral Head on Marathon[®] Cross-linked Polyethylene Liner

Advanced technology

BILOX *delta* ceramic femoral heads on cross-linked polyethylene combine the latest ceramic technology with the advanced cross-linked polyethylene to optimize joint stability and minimize wear.



Product notes

Range of Motion	Good Up to 142°, vital for the advanced restoration of biomechanics
Stability	Excellent Hi-tech polyethylene liner allow precise placement of the implant for optimized joint stability
Wear	Excellent Highly polished ceramic head helps to reduce wear ²

Ceramic
Polyethylene

Alumina Ceramic Femoral Head on Ceramic Liner*

Reduced wear

Newer alumina ceramics have been available for three years and combine high material hardness with smooth surface finishes to minimize wear.



Product notes

- | | |
|------------------------|--|
| Range of Motion | Good
Up to 142°, vital for the advanced restoration of biomechanics |
| Stability | Good
Limited head and liner configurations provide good joint stability |
| Wear | Excellent
Extremely hard ceramic components help to reduce wear ³ |

* Actual product shown not currently available in the United States, however, other ceramic-on-ceramic implants are available.

Ceramic
Ceramic

Precision-Engineered Femoral Head on Ultamet™ Metal Liner

Enhanced function

Metal-on-metal implants have been available for over 40 years and combine enhanced joint stability with excellent wear performance to provide outstanding functional performance.



Product notes

Range of Motion **Excellent**
Up to 151° for outstanding functional performance

Stability **Excellent**
Designed to provide enhanced joint stability under high demand conditions

Wear **Excellent**
Extreme wear reduction¹

Metal
Metal

Understanding Hip Implant Options

Product	Range of Motion	Stability	Wear
 <p>Metal on Cross-linked Polyethylene</p>	<p>Good: Up to 142° Good range of motion to help restore proper biomechanics to reduce the risk of dislocation</p>	<p>Excellent Stability Marathon cross-linked Polyethylene is available in multiple liner configurations to improve joint stability and help restore proper hip biomechanics¹</p>	<p>Modest Wear Reduction Marathon cross-linked Polyethylene from DePuy wears 85 percent less than traditional polyethylene materials while maintaining key mechanical properties essential for total hip replacement</p>
 <p>Ceramic Femoral Head on Cross-linked Polyethylene</p>	<p>Good: Up to 142° Good range of motion to help restore proper biomechanics to reduce the risk of dislocation</p>	<p>Excellent Stability BIOLOX <i>delta</i> femoral heads in cross-linked polyethylene liners provide multiple liner and femoral head options to enhance joint stability and restore proper biomechanics²</p>	<p>Excellent Wear Reduction BIOLOX <i>delta</i> Ceramic Femoral Heads and Marathon Cross-Linked Polyethylene from DePuy combine the wear reduction of Marathon with the enhanced toughness of BIOLOX <i>delta</i> ceramic to provide excellent wear reduction and improved functional performance</p>
 <p>Alumina Ceramic on Ceramic*</p>	<p>Good: Up to 142° Good range of motion to help restore proper biomechanics to reduce the risk of dislocation</p>	<p>Good Stability Alumina ceramics are available in a limited size range and may require larger diameter acetabular shells which may require the removal of more healthy bone or the use of smaller diameter femoral heads</p>	<p>Excellent Wear Reduction Alumina ceramic components exhibit low wear rates in hip simulator studies³</p>
 <p>Metal-on-Metal</p>	<p>Excellent: Up to 151° Excellent range of motion restores biomechanics and provides enhanced functional performance</p>	<p>Excellent Stability Due to the high strength of metal-on-metal implants, larger femoral heads are available which provide excellent joint stability while preserving healthy acetabular bone⁴</p>	<p>Excellent Wear Reduction Ultamet metal-on-metal components from DePuy are extremely durable and wear 100 times less than traditional polyethylene</p>

* Actual product shown not currently available in the United States, however, other ceramic-on-ceramic implants are available.

Advanced bearing technology

Multiple bearing choices are available to limit wear. Physicians have the option of choosing Ultamet Metal-on-Metal, Marathon Cross-linked Polyethylene with Ultamet Metal Heads or Marathon Cross-linked Polyethylene with BIOLOX *delta* Ceramic Heads.

Enhancing joint stability

Multiple liner options in standard and Marathon Cross-linked Polyethylene are available to help restore biomechanics and reduce the risk of dislocation.

Versatility without compromise

Metal or cross-linked polyethylene components can be securely locked into place providing enhanced intra-operative selections of inserts.

PINNACLE™
ACETABULAR CUP SYSTEM

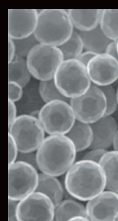


 **DePuy**
a Johnson & Johnson company

POROCOAT®
POROUS COATING

Clinical heritage for fixation

With more than 25 years of clinical success, Porocoat porous coating provides early stability in healthy bone, and long-term biological fixation as ingrowth takes place.



Pinnacle
Acetabular Cup System

REFERENCES

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3. Sodha, S., et al. "Concepts of the Modern Ceramic on Ceramic Total Hip Arthroplasty and Early Results." *University of Pennsylvania Orthopaedic Journal* Vol. 14, Spring 2001: 1-4.
4. Chan, F. "The Award Papers/The Otto Aufranc Award." *Clinical Orthopaedics and Related Research* Vol. 369 Dec. 1999: 10-24.

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