

Total Hip Replacement is the most successful and reliable procedure in surgery promising patients restoration of painfree mobility for years into the future. Just how many years is a function of multiple factors including the skill and experience of the surgeon. Another is the choice of bearing surface used, prompting the clinically relevant question often asked by patients:

## WHAT IS MY HIP REPLACEMENT MADE OF?

The “working” part of the joint is the articulation between the ball and socket. Various materials and combinations are available and they each have their own advantages and disadvantages, but I mainly use a **ceramic ball against highly cross-linked polyethylene (XLPE) placed in a metal socket**.

Cross-linking Polyethylene	<ul style="list-style-type: none"> <li>• Toughens the material so wear approaches ceramic or metal bearings</li> <li>• Allows use of bigger heads (as thinner poly used) increasing stability</li> <li>• Gives patients great confidence in their range of safe movement, and</li> <li>• Their hips don't squeak!</li> </ul>
Ceramic ball heads	<ul style="list-style-type: none"> <li>• Are extremely long-wearing</li> <li>• Self-lubricate due to “wettability” of the material</li> <li>• Only squeak (20%) if joined with a ceramic socket</li> </ul>
Metal-on-Metal (MoM) hips	<ul style="list-style-type: none"> <li>• Are VERY tough and durable, but</li> <li>• Are also prone to squeaking</li> <li>• Shed wear particles that can be toxic to tissues locally and even cause systemic illness</li> <li>• Require long-term monitoring of blood Cobalt and Chrome levels</li> </ul>



### WESTMEAD

Suite 12, Level 1, Westmead Specialist Centre  
16-18 Mons Road  
Westmead NSW 2145  
Phone: (02) 8893 4900

### BELLA VISTA

Suite 1, Level 1, Hospital for Specialist Surgery  
17-19 Solent Circuit  
Bella Vista NSW 2153  
Phone: (02) 8711 0110



## BEARING ADVANTAGES

	COXP (CERAMIC ON X-POLY.)	COC (CERAMIC ON CERAMIC)	MOM (METAL ON METAL)
LOW WEAR	✓	✓✓	✓✓
NEVER SQUEAK	✓	✗	✗
NO METAL PARTICLE TOXICITY	✓	✓	✗



### REFERENCES

- 1) "Have alternative bearings...affected the prevention and treatment of osteolysis" – Callaghan et al. J Am. Academy of Ortho. Surgeons, Vol 16, Suppl. 1, 2008.
- 2) Highly Cross-Linked Polyethylenes, Streicher, RM - Chapter in Tribology in Total Hip Arthroplasty, Springer (2011)

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