Materials in a Hip Replacement

SCAN TO WATCH VIDEO

A total hip replacement consists of four components, each engineered from materials chosen for their strength, biocompatibility, and longevity. Understanding what your implant is made from helps demystify the procedure and builds confidence in the durability of the result. Modern materials have transformed the lifespan of hip replacements beyond what was possible a generation ago.

THE TECHNIQUE

01 Femoral Stem
Titanium alloy: lightweight, strong, and bonds directly to bone.

02 Femoral Head
Ceramic: hard-wearing, smooth, and resistant to ion release.

03 Acetabular Shell
Porous-coated titanium: allows biological fixation to the pelvis.

04 Acetabular Liner
Highly cross-linked polyethylene (XLPE): the gold standard bearing.

AT A GLANCE

STEM	Titanium Alloy
HEAD	Ceramic
SHELL	Porous Titanium
LINER	XLPE

> "The right materials mean a replacement that lasts."
> — Dr Chien-Wen Liew

FREQUENTLY ASKED QUESTIONS

Q. Why is ceramic preferred for the femoral head?
Ceramic is the hardest and smoothest bearing material available, producing the least wear debris over decades of use.

Q. Is there still metal in the implant?
Yes — the stem and shell are metallic, but modern bearing surfaces avoid all metal-on-metal contact, eliminating ion release concerns.

Q. Can I have an MRI with this implant?
Yes. Titanium and cobalt chrome implants used today are MRI-compatible. Always inform the radiographer of your implant.

ABOUT THE SURGEON

Dr Chien-Wen Liew exclusively performs total hip replacements via the direct anterior approach and total knee replacements via kinematic alignment only. He utilises patient-specific technology for both procedures, and practices from Orthopaedics 360 — within the Eastwood Private Hospital Precinct.

Dr Chien-Wen Liew

Hip and Knee Replacement Surgeon

Orthopaedics 360 · Eastwood Private Hospital, Adelaide SA

General educational purposes only. AHPRA Registered Specialist.