



Title

**POLYETHYLENE WEAR PERFORMANCE OF OXIDIZED ZIRCONIUM
AND COBALT CHROME KNEE COMPONENTS UNDER ABRASIVE CONDITIONS**

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Purpose/Premise

This paper reports on a knee simulator study comparing femoral components made from oxidized zirconium with components made from Co-Cr alloy.

Material and Methods

Three femoral components made from each material were articulated with UHMWPE tibial surfaces. Each component was first tumbled with 25 μ alumina particles, creating scratches in random directions. Wear testing was performed to five million cycles. Measurements were taken for UHMWPE weight, number and size of wear particles, and roughness of the femoral component.

Outcomes

After five million cycles, both the surface roughness and wear rate were greater with the Co-Cr components.

Conclusion/Recommendation

The authors concluded that oxidized zirconium femoral components may reduce polyethylene wear in TKA in the presence of third body abrasives.

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