Title

WEAR AND LUBRICATION OF METAL-ON-METAL HIP IMPLANTS

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Purpose/Premise
This article discusses a hip simulator test to determine the effects of clearance and roughness on the wear of metal-on-metal bearings.

Material and Methods
Twenty-two cobalt-chromium alloy implants with various diametrical clearances and surface roughness values were tested to 3 million cycles.

Outcomes
The results showed that wear increased as diametrical clearance increased and that wear increased with increased surface roughness.

Conclusion/Recommendation
The authors concluded that diametrical clearance and surface roughness facilitate fluid film lubrication and are therefore important factors in the design of head-cup articulations.

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