



*Title*

**COMPARISON OF TWO COBALT-BASED ALLOYS FOR USE  
IN METAL-ON-METAL HIP PROSTHESES:  
EVALUATION OF THE WEAR PROPERTIES IN A SIMULATOR**

*Authors*

St. John KR, Poggie RA, Zardiackas LD, Afflitto RM

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*Purpose/Premise*

This article reports on a hip simulator study comparing the wear behavior of low-carbon Co-Cr alloys with high-carbon Co-Cr alloys.

*Material and Methods*

Components were tested to 5 million cycles. A gravimetric technique was used to measure the wear of the cups every 500,000 cycles and the wear of the heads every 1.5 million cycles.

*Outcomes*

The combined head and cup wear was  $1.26 \pm 0.10$  mg/million cycles for the low-carbon components and  $0.89 \pm 0.23$  mg/million cycles for the high-carbon components.

*Conclusion/Recommendation*

The authors concluded that the high-carbon components should provide an advantage in long-term wear resistance, compared to low-carbon components, but that the high-carbon components may be more susceptible to third body damage.

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