

## **Influence of Head Size and Gender on the Five-Year Survivorship of a Ceramic-on-Ceramic Hip Resurfacing: An International Multi-Center Study**

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**INTRODUCTION:** Ceramic-on-ceramic (CoC) hip resurfacing (HR) was developed to address the limitations of metal-on-metal (MoM) HR, particularly the higher failure rates in females and with smaller head sizes. This study evaluated (1) five-year survivorship of a hybrid CoC HR system (ReCerf), with analysis by sex and femoral head size, and (2) improvement in functional outcomes using the Oxford Hip Score (OHS) and University of California, Los Angeles (UCLA) activity score.

**METHODS:** This international, multicenter retrospective study included 604 consecutive patients (336 males, 268 females; mean age 50.1 years, range 20–80) who underwent CoC HR between September 2018 and January 2025. Kaplan–Meier analysis assessed survivorship up to five years. Outcomes were stratified by sex and head size (<50 mm vs ≥50 mm) using log-rank tests, with revision risk evaluated via Cox proportional hazards regression.

**RESULTS:** At a mean follow-up of 4.04 years (range 1.44–6.35), five-year survivorship was 98.0% (95% CI 96.3–99.0). Subgroup analysis showed survivorship of 97.6% in males, 98.5% in females, 98.5% in head sizes <50 mm, and 97.5% in head sizes ≥50 mm. Neither sex (HR 0.79;  $p=0.78$ ) nor head size (HR 1.01 per mm increase;  $p=0.89$ ) significantly affected revision risk. Functional scores improved markedly: mean OHS increased from 22.3 to 45.0, and UCLA from 4.96 to 7.97 postoperatively.

**DISCUSSION AND CONCLUSION:** Hybrid CoC HR provides excellent mid-term survivorship and significant functional improvement, without increased revision risk in females or smaller head sizes. These findings support its use as a viable alternative to MoM HR. Continued follow-up is warranted to validate long-term durability.