

Paper III

**MEDIUM AND LONG-TERM PERFORMANCE OF
11 516 UNCEMENTED PRIMARY FEMORAL
STEMS FROM THE NORWEGIAN
ARTHROPLASTY REGISTER**

G. Hallan, MD, S. A. Lie, MSc, PhD, O. Furnes, MD, PhD,
L. B. Engesaeter, MD, PhD, S. E. Vollset, MD, Dr PH, L. I. Havelin, MD, PhD

*From the Norwegian Arthroplasty Register,
Department of Orthopaedic Surgery,
Haukeland University Hospital,
Bergen, Norway*

Primary uncemented femoral stems reported to the Norwegian Arthroplasty Register in the period 1987-2005, were included in this prospective observational study. The material was comprised of 11 516 hips in 9 679 patients and 14 different stem designs. Kaplan-Meier survival probabilities and Cox regression were used to analyse the data. With aseptic loosening as the end-point, all currently used stem designs performed excellently with survival percentages of 96-100 at 10 years. With the end-point being stem revision of any cause, the long-term results of the different stem designs varied from very poor to excellent with 15-year survival ranging from 29% to 97%. Follow-up longer than 7 years was needed to identify some of the poorly performing stem designs. All the currently used stems had over 90% 10 years survival with this end-point, but there were differences between the designs. The Corail (n= 5456) was the most frequently used uncemented stem, and this design had a survival of 97% at 15 years. Male gender was associated with a 1.3 times increased risk of stem revision (95% CI 1.05-1.52). Age and diagnosis had no influence on the results in this study. Overall, we concluded that modern uncemented femoral stems performed well.

Moderate differences in survival between well-performing stems should be interpreted with caution since the differences may be caused by factors other than the femoral stem *per se*.