

Assessment of Durability and Function at Minimum 35 Year follow-up of THA in Patients 50 and Under

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Introduction: The purpose of the present study was to evaluate the clinical, radiographic and functional outcomes of Charnley THA in patients age 50 & under (a group that continues to actively function) at minimum 35 years of follow-up.

Methods: 93 consecutive non-selected hips in 69 patients age 50 & under at index Charnley THA has been prospectively followed for 35 years. This cohort has been previously evaluated at 25 years, allowing for a longitudinal comparison. 30 of 32 living patients were available for evaluation. Radiographic and clinical follow-up with quality of life and hip scores (SF-36, WOMAC, HHS) in addition to functional evaluation with activity scores (UCLA and Tegner), and activity measurements (6minute walk and pedometers) were performed.

Results: At latest follow-up, 44% of the cohort was alive and 34 (36.5%), of 93 THAs had been revised or removed. 21 acetabular (22.6%) and 7 femoral (7.5%) components were revised for aseptic loosening. Since the last follow-up, the average 6-minute walk distance decreased from 395m to 171m, and this decrease correlated with increasing comorbidity. WOMAC and Harris Hip ratings have also significantly declined ($p < 0.05$).

Conclusion: This study demonstrates the durability of cemented THA in a young patient population. Although 63.5% of the original hip replacements were functioning at the latest follow-up or at the time of death, a significant decrease in activity level was seen over time. This is the first long-term follow-up of THA to quantitate the decrease in function over time. Age and health related factors as opposed to implant failure serve to limit activity in this cohort at long-term follow-up. Also 44% of the original patient cohort was alive for assessment, which is much higher than the 4.5% alive at 35 years in a cohort of THAs performed in older patients.

