

**ID:** 128

**Title:** Inferior short term outcome of 1465 computer navigated primary total knee replacements.

A report from the Norwegian Arthroplasty Register 2005-2008

**Abstract:** Background:

Improving positioning and alignment by the use of computer assisted surgery (CAS) might improve longevity and function in total knee replacements. This study evaluates the short term results of computer navigated knee replacements based on data from a national register.

Patients and Methods:

Primary total knee replacements without patella resurfacing, reported to the Norwegian Arthroplasty Register during the years 2005-2008, were evaluated. The five most common implants and the three most common navigation systems were selected. Cemented, uncemented and hybrid knees were included. With the risk for revision due to any cause as the primary end-point, 1465 computer navigated knee replacements (CAS) were evaluated against 8214 conventionally operated knee replacements (CON). Kaplan-Meier survival analysis and Cox regression analysis with adjustment for age, sex, prosthesis brand, fixation method, previous knee surgery, preoperative diagnosis and ASA category were used.

Results:

Kaplan-Meier estimated survival at two years was 97.9% (95% CI: 97.5-98.3) in the CON group and 96.4% (95% CI: 95.0-97.8) in the CAS group. The adjusted Cox regression analysis showed a statistically significantly higher risk for revision in the CAS group (relative risk=1.7, 95% CI: 1.1-2.5,  $p=0.019$ ). The LCS complete knees had a significantly higher risk for revision with CAS, compared to CON (relative risk=2.1 (95% CI 1.3-3.4,  $p=0.004$ )). Mean operating time was 15 minutes longer in the CAS group.

Conclusion:

Survivorship at two years of computer navigated primary total knee replacements was inferior compared to conventionally operated knees. Therefore, an extensive use of CAS in primary total knee replacement surgery cannot be encouraged until proven superior in long term register studies and clinical trials.