

**TITLE:**

Functional Outcomes following Total Hip Arthroplasty

**INTRODUCTION:**

Recent studies have investigated patient outcomes after THA based on surgical approach. Though self-reported outcomes are commonly utilized, functional measures represent a novel technique to measure outcomes after THA.

**METHODS:**

A cohort of patients undergoing primary THA surgery were included and grouped by surgical approach (n=400 direct anterior; n=379 posterior). Patients were evaluated pre-operatively and at both three and twelve months post-operatively using the Hip Dysfunction and Osteoarthritis Outcome Score (HOOS, JR.), timed up and go (TUG) test, 30 second sit to stand test (30STS), and four-meter walk test (4MWT). Mean differences between the anterior and posterior groups were tested using independent t-tests.

**RESULTS:**

Patient demographics showed the two groups were similar. Compared to pre-operative values, functional outcome scores improved among patients in both groups at both three and twelve months post-operatively. At three months, the anterior group had a 2.66 second improvement with TUG test, 2.49 repetition improvement in 30STS, and 1.18 second improvement in 4MWT; the posterior group had 2.33 second, 2.71 repetition, and 1.23 second improvements, respectively. At twelve months, the anterior group had a 3.15 second improvement with TUG test, 3.83 repetition improvement in 30STS, and 1.23 second improvement in 4MWT; the posterior group had 2.86 second, 3.99 repetition, and 1.19 second improvements respectively. No significant differences were noted between the two approach groups in these outcomes. However, the anterior group did show significant improvement in HOOS JR score compared to the posterior group at three, but not twelve, months postoperatively.

**DISCUSSION and CONCLUSION:**

This study is the first to use TUG, 30STS, and 4MWT as objective comparative measures of function based on surgical approach. These data suggest anterior and posterior approaches are equally effective in restoring function among THA patients, while the anterior approach may have improved patient satisfaction in the early post-operative period.