

Return to Activities Following Two-Level Cervical Disc Replacement Versus Fusion: A Matched Comparative Study

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INTRODUCTION:

Two-level cervical disc replacement (CDR) is gaining popularity as a motion-preserving alternative to anterior cervical discectomy and fusion (ACDF). While return to activities (RTA) is well documented for one-level procedures, evidence is limited for two-level surgeries. This study evaluates return to driving and work, patient-reported outcomes, and complications in patients undergoing two-level CDR versus ACDF.

METHODS:

We performed a retrospective study of patients undergoing primary, two-level CDR or ACDF from 2017 to 2023 at a single institution. Patients with complete RTA data were included. A 1:1 propensity score match was performed based on age, sex, and Charlson Comorbidity Index (excluding age). Outcomes included return to driving and working, PROMs at early and late follow-up, and postoperative complications.

RESULTS:

A total of 49 matched pairs were analyzed. There were no differences in return to driving. CDR patients returned to work significantly sooner than ACDF patients (17 vs. 42.5 days, $P = 0.003$). Early follow-up showed significantly better outcomes in the CDR cohort, including Neck Disability Index, Visual Analog Scale for neck and arm pain, SF-12 Physical Component Summary, and PROMIS Physical Function scores. Complication and reoperation rates were similar between groups.

DISCUSSION AND CONCLUSION:

Two-level CDR provides faster return to work and improved early functional outcomes compared to ACDF, without an increase in complications. These findings support the use of CDR as a favorable option for eligible patients with two-level cervical pathology.

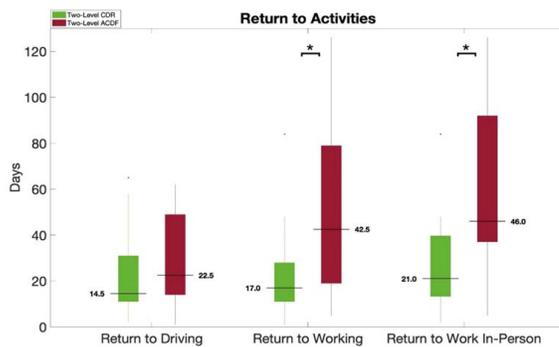


Figure. Days to Return to Activities Following Two-Level CDR vs. ACDF. Return to Working = return to work overall (from home and in-person). Return to Work In-Person = return to in-person work outside the home. Median values are labeled. Timepoints with an asterisk (*) indicate statistically significant median differences ($p \leq 0.05$) between cohorts.