

A Comparison of Outcomes after Total Knee Arthroplasty in Patients With and Without Nickel Allergy

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INTRODUCTION:

It is unclear whether patients with metal allergy have a higher risk of total knee arthroplasty (TKA) failure compared to patients without allergy. The aim of this study was to determine whether patients with self-reported metal allergy have worse clinical outcomes and higher revision rates after primary TKA compared to patients without a metal allergy.

METHODS: Over 5 years, 282 patients with and 17,497 patients without nickel allergy underwent primary TKA. Mean follow up was 2 years. Differences in Knee Osteoarthritis Outcome Score Joint Replacement (KOOS JR.), Visual Analog Scale (VAS), Lower Extremity Activity Scale (LEAS), Patient-Reported Outcomes Measurement Information System (PROMIS) Mental and Physical, and the Veterans RAND 12-item (VR12) Physical and Mental Component Survey Scores and revision rates were compared between the groups.

RESULTS: Patients with nickel allergy had no difference in KOOS Jr, VAS or LEAS Scores and slightly worse PROMIS Mental and Physical scores at one year compared to patients without allergy. There was no difference in any clinical outcome scores when stratified by implant type (Nickel Free vs. CoCr) between patients with nickel allergy compared to patients without nickel allergy. Mean clinical outcome scores showed significant improvements in 1-year scores regardless of whether patients had a nickel allergy. There were similar revision rates for non-metal allergy patients (1.37%) and metal allergy patients (1.42%) ($p=1.0$).

DISCUSSION AND CONCLUSION:

Patients with a self-reported metal allergy diagnosis can be counseled that their clinical outcome scores on average will improve similarly to those patients without a metal allergy and have similar rates of revision with or without the use of a nickel free implant.