

Isolated Tibial Insert Exchange in Aseptic Revision TKA: Reliable and Durable for Wear; Less So for Instability, Insert Fracture/Dissociation, or Stiffness

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Introduction: Modularity in total knee arthroplasties (TKA) allows for isolated tibial insert exchange with retention of well-fixed and well-aligned components. Simplicity makes this appealing, but published results for non-infectious indications are mainly small series. This study determined outcomes of isolated tibial insert exchange during aseptic revision TKA in a large, consecutive cohort.

Methods: From 1985–2016, 270 isolated tibial insert exchanges (among 7,121 revision TKAs the same years) were performed at one institution for non-infectious indications, including polyethylene wear (39%), instability (55%), insert fracture/dissociation (5%), or stiffness (1%). Patients with component loosening, implant malposition, infection or extensor mechanism problems were excluded. Mean age was 65 years with 62% females. Mean follow-up was 6 years.

Results: At 10 years, Kaplan-Meier survivorship free of re-revision was 68%. For diagnosis of insert wear, revision-free survivorship at 5 and 10 years was 89% and 74%, respectively. Re-revisions were more frequent for index diagnoses other than wear (HR 1.9; $p=0.01$) with 5- and 10-year survival of 74% and 69% for instability and 49% and 37% for liner fracture/dissociation. After exchanges for wear, the most common reason for re-revision was aseptic loosening (33%). After all other index diagnoses, the most common reason for re-revision was recurrence of that diagnosis. Other factors associated with re-revision were younger age (HR 1.4 per 10 years; $p<0.01$) and prior revision (HR 1.9; $p<0.01$). Mean Knee Society Scores improved from 54 preoperatively to 72 at 5 years and 78 at 10 years.

Conclusions: After isolated tibial insert exchange, the risk and reasons for re-revision correlated with preoperative indication. Best results were for polyethylene wear with 5- and 10-year survival of 89% and 74%. For other diagnoses, failure rate was higher and failure mode was most commonly a recurrence of the original diagnosis. TKA failures often are multi-factorial, and we advise some caution with this simplistic strategy.