

# **Outcome after Total Elbow Arthroplasty: A retrospective study of 167 procedures performed from 1981 to 2008**

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## **Abstract**

### **Background**

Total elbow arthroplasties (TEAs) are traditionally grouped into linked and unlinked design. We aimed to analyze the difference in clinical outcomes after TEA based on implant design, indication for surgery and to evaluate both primary and revision TEA's. Finally, we aimed to identify TEAs considered a failure even though revision was not performed.

### **Methods**

TEA procedures performed from 1981 to 2008 were included. A total of 167 TEAs (126 primary and 41 revision TEAs) in 141 patients were evaluated with patient reported outcome measure (PROM) in terms of the Oxford Elbow Score (OES) and clinically assessed with the Mayo Elbow Performance Score (MEPS), range of motion (ROM) and standard radiographs. Implants demonstrating an OES of less than 50 and a MEPS of less than 60 were considered to be a failure.

### **Results**

The mean follow up was 10.5 years (4 to 26.5 years) for primary and 7.5 years (2 to 15.5 years) for revision TEAs. There was no difference in OES or MEPS between 87 linked and 39 unlinked primary TEAs. The OES score in the social-psychological domain was significantly lower in TEAs performed due to fracture (67) compared to rheumatoid arthritis (RA) (81) ( $p=0.025$ ). ROM in extension-flexion was  $116^\circ$  for primary linked TEAs compared to  $110^\circ$  for primary unlinked TEAs ( $p=0.02$ ). Revision TEA's were associated with a poorer outcome in terms of OES, MEPS and ROM compared to primary TEAs. Sixteen primary and seven revision TEAs had radiographic signs of loosening at follow up. Based on the OES four primary and seven revision TEAs were considered as failures in all three domains. Based on the MEPS three primary and six revision TEAs were considered as failures. Three primary and one revision TEA were revised after follow-up examination.

### **Conclusion**

We found no clinically significant differences in outcomes after linked or unlinked TEAs. Patients with TEA's due to fracture had poorer social-psychological results than RA patients. The results after revision surgery were significantly inferior compared with primary procedures. The OES contributes to the evaluations of the outcome after TEA surgery with a nuanced picture of the patients' perception.