

**Early Mobilization Versus Plaster Immobilization of Simple Elbow Dislocations:
A Cost Analysis of the FuncSiE Multicenter Randomized Clinical Trial**

GIT Iordens, MD¹; Esther Van Lieshout, PhD, MSc¹; Suzanne Polinder, PhD¹;

Denise Eygendaal, MD, PhD²; Michael Verhofstad, MD, PhD¹; Niels Schep, MD, MSc, PhD³;

Dennis Den Hartog, MD, PhD¹;

¹*Erasmus MC Zuid-Holland, THE NETHERLANDS;*

²*Erasmus MC, Brabant, THE NETHERLANDS;*

³*AMC Amsterdam, Noord-Holland, THE NETHERLANDS*

Background/Purpose: To our best knowledge no studies have reported the burden of simple elbow dislocations on health care costs. It is unknown whether or not early mobilization after reduction might play a role in reducing these costs. The primary aim of this study was to assess and compare the total costs (direct health care costs and indirect costs due to loss of production) after early mobilization versus plaster immobilization in patients with a simple elbow dislocation. The secondary aim was to evaluate cost-effectiveness. It was hypothesized that early mobilization would not lead to higher direct and indirect costs than plaster immobilization.

Methods: This cost-effectiveness study used data of a multicenter randomized clinical trial comparing early functional treatment with plaster immobilization in patients after simple elbow dislocations (blinded trial). From August 25, 2009 until September 18, 2012, patients aged 18 years or older with a simple elbow dislocation from 3 academic and 19 nonacademic hospitals were recruited and randomized to early mobilization (immediate motion exercises; n = 48) or 3 weeks plaster immobilization (n = 52). Follow-up was 1 year. Primary outcome were the total costs at 1 year. Analysis was by intention to treat.

Results: 100 patients were included; one patient was lost to follow-up after 6 months. QuickDASH (an abbreviated version of the Disabilities of the Arm, Shoulder and Hand) was lower in the early mobilization group at 6 weeks, but not at later time points. There were no significant differences in health-related quality of life measured with the EuroQol EQ-5D, Short Form (SF)-36 PCS (physical component summary), and SF-36 MCS (mental component summary) between the two groups throughout the 1-year follow-up. Mean total costs per patient were €3624 in the early mobilization group versus €7072 in the plaster group (P = 0.094). Shorter work absenteeism in the early mobilization group (10 vs 18 days; P = 0.027) did not lead to significantly lower costs for productivity loss (€1719 in the early mobilization group vs €4589; P = 0.120).

Conclusion: From a clinical as well as a socioeconomic point of view, early mobilization should be the treatment of choice for a simple elbow dislocation. Plaster immobilization has inferior results at almost double costs, and should therefore be abandoned.