

Efficacy of early controlled motion of the ankle compared with no motion in non-operative treatment of patients with an acute Achilles tendon rupture. An assessor blinded randomized controlled trial.

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Background: Early controlled ankle motion is widely used in the non-operative treatment of acute Achilles tendon rupture although its safety and efficacy has never been investigated in a randomized setup.

Purpose / Aim of Study: To investigate if early controlled motion (ECM) of the ankle was superior to immobilization (IM) in the treatment of acute Achilles tendon rupture.

Materials and Methods: The study was performed as an assessor blinded randomized controlled trial with patients allocated in a 1:1 ratio to one of two parallel groups. Patients aged 18 to 70 years were eligible for inclusion. The ECM group performed movements of the ankle 5 times a day from week 3 to 8 after rupture. The control group was immobilized (IM). The primary outcome was the Achilles tendon Total Rupture Score (ATRS) evaluated at 1 year post-injury. Secondary outcomes were: heel-rise-work test, Achilles tendon elongation and rate of re-rupture. Analysis was conducted as intention-to-treat with imputation of missing data. The full trial protocol was published in *Trials Journal* in 2016. [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT02015364), identifier: NCT02015364.

Findings / Results: 189 patients were assessed for eligibility from February 2014 to December 2016. 130 were randomized and 122 available for 1 year follow up; 64 ECM and 58 IM. There was no statistically significant differences ($p>0.3$) between the ECM and the IM groups at 1 year; Mean (SD) ATRS was 74 (18) and 75 (18), respectively, the Heel-rise-work-test showed a total work performed of the injured limb (percent of uninjured) of 60% (21) and 60% (21), respectively, elongation was 18mm (13) and 16mm (11), respectively. Correspondingly, there were 6 and 7 re-ruptures.

Conclusions: ECM revealed no benefit to IM in any of the investigated outcomes. A re-rupture rate of 10% was seen and both groups had significant functional deficits in the injured limb.