

Barfod KW, Bencke J, et al. Nonoperative dynamic treatment of acute Achilles tendon rupture: the influence of early weight-bearing on clinical outcome: a blinded, randomized controlled trial. JBJS Am. 2014;96(18):1497-503.

Design: Randomized clinical trial

Purpose of study: To compare the outcomes of nonoperatively treated Achilles tendon rupture when patients are allowed to bear weight from day one to outcomes when patients are not allowed to bear weight for six weeks after injury

Population/sample size/setting:

- 57 patients (48 men, 9 women, mean age 40) treated for Achilles tendon rupture at a university hospital in Denmark
- Eligibility criteria were based on a history in adults age 18 to 60 of clear snapping of the Achilles tendon and a clinical examination with a palpable gap and a positive calf squeeze test
- Severe obesity and injury more than four days previously were criteria for exclusion

Interventions:

- All patients had the injury stabilized with an ankle orthosis with three 1.5 cm wedges to fix the ankle in 20° to 30° of plantar flexion, with instructions to use the orthosis for 8 weeks and bringing the ankle gradually to neutral by removing a wedge every second week
- Randomization was to early weight-bearing (n=29) or to a control group (n=28)
 - o The early group was allowed full weight-bearing from day one, and crutches were recommended but not obligatory for the first two weeks
 - o The control group was instructed not to bear weight for the first six weeks of treatment, but was allowed full weight-bearing during the final two weeks of the 8 weeks of orthosis use
- After the 8 weeks of orthosis use, both groups had a standardized rehabilitation protocol for weeks 9 through 16, with training three times per week by a team of physical therapists who provided individual recommendations to each patient
 - o In general, cycling was recommended from week 10 onwards and jogging at week 14, but contact sports were not to be resumed for one year

Outcomes:

- Primary outcome was the Achilles tendon Total Rupture Score (ATRS) at 6 months of followup and again at 12 months of followup

- ATRS asks the patient 10 questions about limitations in the calf or foot based on strength, fatigue, stiffness, pain, and activities such as walking on uneven surfaces, going up stairs, running, and physical labor; each item has a score from 0 to 10, with 0 the worst and 10 the best score; therefore, the ATRS has a maximum score of 100
- The ATRS at the time of initial injury was not reported, but the pre-injury score for both groups was near maximum function (98.6 for early motion and 98.7 for the control group)
 - At 6 months, the mean ATRS for the early group was 61.1 and 67.0 for the control group, a difference which was not significant
 - At 12 months, the ATRS scores were again similar, 73.4 for the early group and 74.4 for the control group
- There were 3 re-ruptures in the early group and 2 in the control group during the 12 months of followup, and the duration of sick leave did not differ between the groups
- Specialized testing of heel rise function were similar between groups

Authors' conclusions:

- It is reasonable to recommend immediate return to weight-bearing during nonoperative dynamic treatment for acute Achilles tendon rupture, since this does not have a detrimental effect on outcome and may improve the patient's self-care ability
- "Dynamic treatment" is a term which does not have a standard definition, and refers sometimes to controlled early mobilization and sometimes to controlled weight bearing, and sometimes to a combination of the two

Comments:

- The primary outcome (ATRS) was not assessed at baseline; rather, the patients were asked to report their pre-injury level of ankle function, presumably retrospectively
 - Since the injuries were less than four days old at the time of enrollment, this retrospective self-report is not likely to be biased between groups
 - However, the lack of a baseline ATRS prevents a comparison of injury severity between groups
- The followup scores are statistically equal between the groups, and this does support the authors' conclusions that immediate weight bearing is not detrimental to an ankle which has adequate external support

Assessment: adequate for some evidence that in the setting of acute Achilles tendon rupture which is treated nonoperatively with an orthotic which provides for equinus positioning of the joint, a rehabilitation strategy which allows weight-bearing on the first day leads to outcomes equally favorable to those of delaying weight-bearing for six weeks after injury, provided that crutches are made available to the patient during the early phase of healing