

What's the best way to treat Achilles tendonopathy?

Troy Glaser, DO,
Sourav Poddar, MD,
and Beth Tweed, MLIS
Department of Family Medicine,
University of Colorado Health
Sciences Center, Denver

Evidence-based answer

Rest and ice are considered first-line therapy for acute Achilles tendonopathy (strength of recommendation [SOR]: **C**, expert opinion), as is nonsteroidal anti-inflammatory drugs (NSAIDs) (SOR: **B**, systematic review).

Chronic noninsertional Achilles tendonopathy should be treated with

eccentric calf-muscle training (ECMT) (SOR: **B**, 3 randomized controlled trials [RCTs]). Continuing an activity such as running, while monitoring pain, is as effective as resting while enrolled in an eccentric strengthening program (SOR: **B**, 1 RCT). If conservative management fails, surgery may help (SOR: **C**, case series).

Clinical commentary

Treat tendonopathy one step at a time

I've found stepwise treatment of Achilles tendonopathy to be the most useful approach for my patients. Initially, I recommend NSAIDs, stretching, and decreasing the offending activity. If the patient hasn't improved in 2 weeks, I refer him for physical therapy with a focus on flexibility and eccentric strengthening. I recommend applying ice for 20 minutes after each therapy or exercise session and 2 or 3 more times a day.

If the patient doesn't improve in

another 2 to 3 weeks, I have him (or her) wear a cam walking boot (fracture boot) constantly, except when bathing, for 2 to 6 weeks. The boot maintains the ankle in a neutral position, facilitating the rest required for healing. I've found that most patients can avoid surgery by wearing the boot until they are free of pain for a week (but no longer than 6 weeks) and then undergoing aggressive physical therapy to strengthen the ankle.

Charles W. Webb, DO
Oregon Health and Science University, Portland, Ore

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Eccentric calf-muscle training is effective for chronic, noninsertional Achilles tendonopathy

Evidence summary

While patients may refer to this condition as "Achilles tendonitis," the phrase is actually a misnomer. That's because in tendonitis, the inflammation is limited to the surrounding structures, but doesn't involve the tendon itself.

Acute symptoms respond to NSAIDs

A Cochrane review of treatments for

acute Achilles tendonopathy included 9 randomized trials with a total of 697 patients. Two RCTs showed evidence that NSAIDs alleviate acute symptoms. In 1 trial of 212 patients who received an oral NSAID or placebo for 14 days, significantly fewer patients in the placebo group achieved a good or excellent symptom relief (relative risk [RR]=0.42; 95% confidence interval [CI], 0.21-0.86). A second RCT of 243 patients compared treatment

Continue to exercise?

Patients with chronic noninsertional Achilles tendonopathy may be able to continue activity during eccentric calf-muscle training without exacerbating the tendonopathy, according to an RCT of 38 patients that compared rest with eccentric training and continued activity with eccentric training.

SHOWN HERE: MEDIAL FOOT AND ANKLE WITHOUT INJURY.



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An AirHeel brace may be an option if a patient can't tolerate eccentric muscle training because of pain

with a topical NSAID to placebo for 21 days; significantly fewer participants who took placebo returned to their pre-injury level of activity (RR=0.78; 95% CI, 0.63-0.95). Low-dose heparin injection, heel pads, topical laser therapy, and peritendinous steroid injection produced no significant decrease in pain compared with placebo.¹

Eccentric calf-muscle training helps chronic tendonopathy

ECMT is an effective intervention for chronic noninsertional Achilles tendonopathy. An observational study of ECMT in 78 patients (101 tendons total) with chronic noninsertional Achilles tendonopathy found that 89% were back to their preinjury activity level after a 12-week regimen of ECMT, as indicated by significantly lower scores on a 100-point visual analog scale (67 at baseline vs 10.2 at 12 weeks; $P<0.001$).²

An RCT compared ECMT or repetitive shock wave therapy to a “wait-and-

see” control group (25 patients in each group). After 4 months, both the ECMT and shock wave therapy groups reported a significant decrease in pain compared with controls ($P<0.001$; mean difference in 10-point pain score, 2.4; 95% CI, 1.3-3.5). Sixty percent of participants in the ECMT group reported complete recovery or significant improvement ($P<0.001$; number needed to treat [NNT] = 3; mean difference in 6-point Likert scale = -1.6; 95% CI, -2.4 to 0.8).³

During an ECMT program, patients may be able to continue activity without exacerbating Achilles tendonopathy. An RCT of 38 patients compared rest with eccentric training and continued activity and eccentric training for 12 weeks to 6 months using a pain-monitored model. Both groups showed similar improvement in pain and function when measured with the Swedish version of the Achilles assessment questionnaire (VISA-A-S 100-point scale: 0 = worst function, 100 = completely recovered). The baseline mean VISA-A-S scores were 57 for both groups; the mean scores after 12 months were 85 for the exercise group and 91 for the rest group.⁴

Another option: The AirHeel brace

An AirHeel brace may be a viable alternative to ECMT, especially if the patient can't tolerate eccentric muscle training because of pain. The brace was designed for Achilles tendonopathy and posterior heel pain. It applies intermittent compression to minimize swelling and promote circulation.

An RCT evaluated 100 patients with chronic noninsertional Achilles tendonopathy who were treated with ECMT, an AirHeel Brace, or a combination of the 2 for 12 weeks. At 1-year follow-up, all 3 groups showed a significant reduction in pain measured by a 10-point visual analog scale (ECMT 30%, brace 27%, combination 53%; $P<0.0001$). All the groups also showed significantly improved function as measured by an American Orthopaedic Foot and Ankle Society Score (10%, 10%, and 30%, respectively; $P<0.001$). No

significant differences in outcomes were found across the treatment groups, and 90% of participants reached their preinjury activity level after 1 year.⁴

Shock wave therapy and topical glyceryl trinitrate

The role of repetitive shock wave therapy and topical glyceryl trinitrate in the treatment of chronic noninsertional Achilles tendonopathy is less clear. In a double-blinded RCT of 49 patients, shock wave therapy did not produce better outcomes than placebo.⁵

However, a prospective cohort study of 68 patients found that patients who received shock wave therapy had significantly lower mean visual analog scale scores for pain compared with controls after 1 month ($P<0.001$), 3 months ($P<0.001$), and 12 months ($P<0.001$) of treatment.⁶ In a double-blinded RCT of 65 patients, more patients treated with topical glyceryl trinitrate therapy were asymptomatic during activities of daily living at 6 months compared with placebo ($P<0.001$).⁷

Both shock wave therapy and topical glyceryl trinitrate may have a significant role to play in treating chronic noninsertional Achilles tendonopathy, but more studies are needed to support their use.

Surgery appears to work better for athletes

Surgery is an option for patients with chronic noninsertional Achilles tendonopathy who have failed conservative measures and a 3- to 6-month rehabilitation program. In a systematic review of 26 studies of patients managed surgically, the mean success rate (full return to preinjury activity level) was 77%. However, a negative correlation was observed between the reported success rate and the overall methods score, a rating of the quality of studies ($r = 0.53$; $P<0.01$). Only 5 of the studies reviewed were prospective cohort studies; the remaining 21 were retrospective cohort studies and case studies.⁸

Athletes responded significantly better to surgery than nonathletic patients, returning to full activity in 4.5 months compared with 7.1 months for nonathletes ($P<0.03$). Fewer athletes had surgical complications (9% compared with 19% of nonathletes).⁹ More studies are needed to clarify the role of surgery in managing Achilles tendonopathy.

Recommendations

The American College of Foot and Ankle Surgeons recommends initial management by reducing pressure around the affected area combined with heel lifts, orthotics, NSAID therapy, and physical therapy. Immobilization may be used on a case-by-case basis. Local steroid injections aren't recommended. Patients with resistant tendonopathy should be referred to a foot and ankle surgeon.¹⁰ ■

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Athletes appear to respond better to surgery, demonstrating quicker recovery than nonathletes