

Nonsurgical Management of Midsubstance Achilles Tendinopathy

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KEYWORDS

• Tendinosis • Tendonitis • Eccentric • Posterior heel pain • Midportion

KEY POINTS

- Achilles tendinopathy is commonly due to a change in activity level, but may also be related to pathoanatomic, biomechanical, and pain-related impairments.
- Reactive tendon states require acute symptom management strategies in contrast to treatment for a tendon in disrepair or degeneration.
- Tendon loading exercise is the mainstay of initial management, but may be supported by medication, ice, shoe inserts, manual therapy, stretching, taping, or low-level laser.
- If unresponsive to initial management, shockwave therapy and injections are options before considering surgery.
- The Victorian Institute of Sports Assessment-Achilles, pain scales, heel raise and jump tests, and ultrasound can be used to assess treatment outcome and recovery.

INTRODUCTION

The Achilles tendon is one of the most commonly injured tendons that results in significant pain and loss of function. The incidence of Achilles tendinopathy (AT) is 2.35 per 1000 in the adult population and is frequently associated with sporting activities or a change in activity level.¹ Men and women between the ages of 20 and 60 are affected equally and commonly present to a health care provider 11 to 12 weeks after the onset of symptoms.¹ A variety of etiologic factors contribute to AT and a thorough

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evaluation combined with evidence of treatment effectiveness and the patient's preferences are important to identify the most appropriate treatment plan. Treatment is often successful with nonsurgical intervention, and some unresponsive cases may be candidates for surgery.² The purpose of this article is to describe the nonsurgical management of midsubstance AT.

PATIENT EVALUATION OVERVIEW

The etiology of midsubstance AT is variable and often multifactorial. Evidence-informed evaluation will help to identify relevant factors in each patient with AT and devise appropriate treatment. Etiologic factors include overuse, training errors, altered lower limb biomechanics, footwear, postural or leg length imbalances, impaired muscle performance, and direct trauma.²⁻⁶ In addition to etiologic factors, the status of the tendon is important in treatment decisions and prognosis. The continuum model of tendinopathy provides a simple way of estimating tendon status and can be used in parallel with examination findings and treatment (**Fig. 1**).⁷ Of particular importance is dissociating tendon reactivity from disrepair or degeneration. Clinically, a reactive tendon is acutely painful even to minimal load, has homogenous swelling (no lumps or bumps), and the patient reports a substantial change in activity that overloaded the tendon. Other considerations important to diagnosis, treatment, and prognosis include biomechanical, pathoanatomic, and pain characteristics identified using clinical measures and imaging (**Table 1**).

History and Comorbidities

- Frequently associated with sporting activities, but can occur in nonathletes.
- Tendon reaction induced by change in activity level, including increased training volume, intensity, or terrain (eg, hill training). Reactivity may be induced after a period of immobilization (eg, recovering from injury), decreased activity (eg, off-season), initiating an exercise program from a relatively sedentary lifestyle, or a direct trauma to the Achilles.^{3,6}
- Individuals with diabetes, obesity, dyslipidemia, inflammatory or autoimmune disorders, hypertension, and prior use of oral or injected steroids are at increased risk.^{1,24-26}

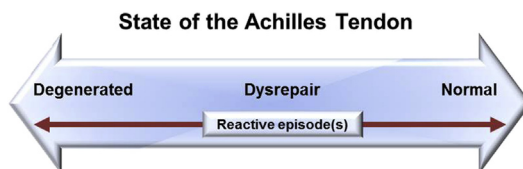


Fig. 1. Continuum model of load-induced tendinopathy.⁷ Clinically, a reactive tendon results in pain and acute reaction in the tendon cell and extracellular matrix after a burst of unaccustomed physical activity (including after immobilization) or a direct blow. Reactivity can present on a previously normal tendon or on a tendon in disrepair or degenerated. In tendon disrepair, failed or incomplete attempts to heal from the reactive stage results in further, but reversible, changes in the tendon matrix with or without vascular and neural ingrowth. The degenerative tendon demonstrates additional cellular and matrix changes (see pathoanatomic characteristics in **Table 1**) some of which are irreversible. Treatment for Achilles tendinopathy attempts to manage reactive episodes with a long-term goal of shifting the tendon state toward normal.

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