

Tendinopathies of the Foot and Ankle. Deu, et. al. *American Family Physician*, 105(5), May 2022. 479-486

PMID: 35559641

Level of Evidence: 5

Reviewer: Samuel R. Gorelik, DPM, PGY-3
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This article was published in a journal dedicated to Family Physicians to discuss common tendinopathies of the foot and ankle, while emphasizing how they are commonly missed. They discussed the posterior tibial, peroneal, and tibialis anterior tendons. They discuss how to properly evaluate the patient, including imaging and treatments. When patients come in with foot and ankle pain, the primary physician is typically able to diagnose ankle sprains, Achilles tendinopathy, and plantar fasciitis. Due to overdiagnosis of those conditions other tendinopathies may be getting overlooked. By definition, a tendinopathy requires tendon degeneration that is typically chronic. In evaluating the patient clinically, it is vital that a thorough physical exam is performed in order to identify what caused the pain, where the pain is, and what makes the pain better or worse. By identifying these details, it becomes easier to identify the tendon(s) that are at risk.

Most often, the tendon involved will have decreased strength and the patient will likely have pain along the path of the tendon. In regards to the imaging for evaluating tendinopathies, they discuss that ultrasound or MRI can be performed but are often not necessary if the patient's background lead the likelihood of a certain tendon being injured. It is important to note that these tendinopathies are not inflammatory in nature. Non-steroidal anti-inflammatory drugs and acetaminophen can be effective in pain relief but they may slow down the recovery process. Footwear is vital to address, as poor footwear can lead to continued discomfort. Rehabilitation is another focus of treatment with an emphasis being placed on eccentric and foot intrinsic muscles.

If conservative treatments (including immobilization) do not provide much relief after 2-3 months, surgical options can be discussed with the patient. Corticosteroid injections may show short-term improvement with the pain relief, but due to the lack of an inflammatory process, and the risk of tendon weakening/rupture, it is not widely used or recommended. The posterior tibial tendon is described as one of the major stabilizers of the medial arch of the foot. With dysfunction of the posterior tibial tendon, the development of acquired flat feet can be seen clinically. Treatments would include arch support along with physical therapy exercises. Peroneal tendonopathies are often misdiagnosed as ankle sprains. It is important to identify the course of the discomfort. With peroneal weakness, the patient will have limited eversion so the patient will present with a varus rearfoot. Immobilization, lateral posted orthotics, and physical therapy can help with this conservatively. Tibialis anterior tendinopathy presents with weakness of dorsiflexion of the ankle. Patients would present with nonspecific anterior ankle and medial midfoot pain along the tendon. Conservative therapy typically consists of immobilization followed by physical therapy.



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Management of vasopressor induced ischemia, Livesey, et. al. *J Orthop.* 2020 Oct 16;22:497-502

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Level of Evidence: 5

Reviewer: Salma Haider, PMS-III
California School of Podiatric Medicine

Millions of cases of severe sepsis and hypotension cases present to emergency departments in the United States each year requiring the use of vasopressors. Although vasopressors are the cornerstone therapy of treatment, many patients are impacted by the underreported adverse drug reaction: digital ischemia. This literature review formulated an algorithm stating the phases and recommended treatments the patients can undergo. This is imperative as there is very few literature on this topic and it will help educate physicians and students on this important matter.

Phase 1 clinical findings entail cold temperature, a dusky skin appearance and limited digital involvement. Treatment for phase 1 includes getting non-invasive measures, elevating the limb in order to diminish edema, utilizing a Bair hugger and performing a nerve block for pain management. If Phase I modalities fail to improve perfusion to ischemic digits, more invasive techniques may be indicated. Phase II clinical findings include multiple digits being affected, macroscopic vessel involvement and absent pulses. For phase II treatment, mechanical vasodilation such as topical lidocaine can be applied, and a fasciotomy may be performed to improve blood flow. Phase III clinical findings include establishing demarcated necrosis. The goal for phase III treatment is to minimize harm and maximize the function of the limb. Treatments include amputation, web-space deepening and reconstructive surgery. Lastly, Phase IV clinical findings include absent limb/digits (including auto-amputation). The goal for this phase is to improve function so patients may opt for prosthetics following full recovery.

This paper does a fantastic job in creating an algorithm that helps students and physicians in treating ischemia due to vasopressor therapy. It is important to educate physicians and students on effective and early interventions in order to save limbs and improve the patient's quality of life.



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Suicide Prevention in Podiatry; Albright, et. al. *Journal of the American Podiatric Medical Association*, 2022, 21-194

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Level of Evidence: 5

Reviewer: Salma Haider, PMS-III
California School of Podiatric Medicine

According to the CDC, suicide is the 10th leading cause of death in the United States under the age of 34 years. Having a prior history of depression also increases the risk of suicide. Moreover, individuals with diabetes are 2-3 times more likely to suffer from depression. According to this article, 45% of individuals who die by suicide have seen their primary care provider within 30 days of their death. Diabetics visit podiatrists frequently, sometimes more frequently than their primary-care providers especially when they have more acute pedal issues (neuropathic pain, ulcerations, vascular disease, etc.).

The purpose of this article is to educate podiatric physicians on the importance of recognizing and to help prevent suicide in out-patient settings. According to the article, this begins with identifying patients who are at risk utilizing screening tools in combination with clinical judgment. In JAPMA's recently published editorial, implementing suicide-screen questions during patient visits was shown to provide valuable information, which, in 5 minutes or so, lead to a positive impact on clinical decision-making and overall care for high-risk podiatric patients.



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Clinical efficacy of therapeutic footwear with a rigid rocker sole in the prevention of recurrence in patients with diabetes mellitus and diabetic polineuropathy: A randomized clinical trial, Lopez-Moral, et. al. *PLoS One*, 14(7), July 11, 2019

DOI: 10.1371/journal.pone.0219537

Level of Evidence: 4

Reviewer: Gavin Glover, DPM, PGY-2
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The authors of this study begin by reviewing various significant statistics regarding diabetic foot ulcers (DFUs) including: lifetime incidence (19% - 34%), 2.5 times higher risk of death than those without DFU history, mortality rate of 70% 5 year after amputation, and an annual cost of \$176 billion for the treatment of diabetic foot complications. With this inspiration in mind, the principal aim of the study was to analyze in an intention-to-treat analysis of the clinical efficacy of a rigid rocker sole in the reduction of the recurrence rate of plantar ulcers in patients with diabetic feet.

This study was conducted in a randomized and controlled parallel (1:1) clinical trial of diabetic patients from June 2016 to December 2017. Patients who met inclusion criteria were then followed for 6 months or until the development of a recurrence event. Clinical examinations included debridement of high-risk points of the forefoot, as well as evaluation of the insoles and therapeutic footwear. Patient group assignments were random and both groups were to wear therapeutic footwear with the following general characteristics: high toe box, enough width to accommodate toe deformities such as claw or hammertoes, wide heel, and laces or buckles for fasteners. Soles of the shoe were either semi-rigid rocker (control) or rigid rocker (experimental).

The primary outcome measure was ulcer recurrence defined by the International Working Group and Infectious Disease Society of America as a full-thickness wound involving the foot or ankle. Patient compliance was evaluated via questionnaire at each consultation and those who had greater than 60% compliance were included in the statistical sub-analysis. 51 patients were included in this study, with 25 patients randomly selected in the control group and 26 patients randomly selected into the experimental group. Of the 51 patients, 29 patients completed the 6-month follow-up without any DFU recurrence. Based on the results, the median follow-up time was 26 weeks.

As the authors discuss their final results, they found that the experimental rigid rocker sole recurrence rate of 23% was similar to a previous study of 27.7%. The authors also were open regarding the limitations to their study. Their sample size was reduced, all of the patients were considered low activity, and plantar pressure was not specifically analyzed. In conclusion, the authors strongly recommend the use of rigid rocker sole therapeutic footwear for reducing the recurrence rate of DFUs for those who have a history of ulcers in the plantar aspect of the foot, those with a foot deformity, and those who have undergone minor amputations.



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