AOPT SIG
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FOOT & ANKLE
FASIG

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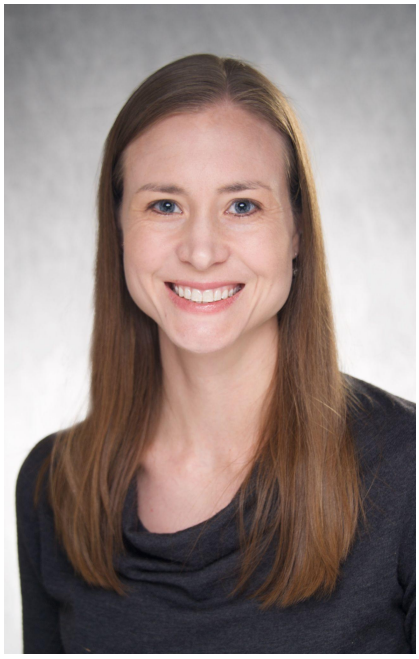
Foot & Ankle SIG News & Updates

- Congratulations to **Frank DiLiberto** for becoming the FA SIG President and **Marcey Keefer Hutchison** for becoming Nominating Committee member!
- There is new and exciting content on our website, so be sure to check it out!
- **Author spotlights:** a conversation with authors of recent foot and ankle scientific publications
- **Infographics:** information for patients and clinicians about foot and ankle conditions including posterior tibial tendon dysfunction and metatarsalgia
- Thank you to everyone who was able to attend the **FA SIG membership meeting** on 1/31. We are planning on more regular, virtual membership meetings to make sure that we are meeting the needs of the membership. Keep an eye out for the next meeting in April.
- The petition to create a new area of practice for "Foot & Ankle" is entering the final stages for submission to ABPTRFE in order to create a Description of Foot & Ankle Fellowship practice. The nationwide practice analysis survey, completed in late summer 2021, sought community input on the knowledge and skills necessary to practice in this sub-specialty. Survey analysis was completed at the end of 2021 and writing of the technical report has begun with a goal of submitting our final report by the summer of 2022. We extend a heartfelt thank you to the members of FASIG and the larger physical therapy community who have expressed excitement and support for this project.
- **Want to be involved?** The SIG is looking for a practice chair or group of clinical PTs to help move our Infographics initiative forward. Reach out to Frank DiLiberto (frank.diliberto@rosalindfrankin.edu) for more information.
- **The FA SIG student team is looking for new members!** If you (or someone you know) is a PT student interested in foot and ankle, reach out to Jen Zellers (jzellers@wustl.edu) for more information. The student team is a great way to engage with the APTA and other students across the US with a minimal (about 2 hours/month) time commitment. FA SIG student team initiatives include preparing this quarterly newsletter and assisting with other SIG projects (including the author spotlight vlog and Infographics initiatives)



Member Spotlight

Featuring Ruth Chimenti, PT, DPT, PhD

Where are you originally from?

I was born in Topeka, KS and grew up on a cattle ranch in a small town.

What sparked your interest in the foot and ankle?

I trained with the Kansas City Ballet where I was paid in pointe shoes and free physical therapy. My friends and ballerinas in the company all commiserated about our different foot and ankle problems. I wanted to be like the physical therapist who knew exactly what to do to get us all back on the stage dancing.

What is your current research interest? How Did you become involved in research/academics?

My research focuses on the evaluation and treatment of Achilles tendon pain mechanisms, including altered movement strategies, tissue pathology identified on imaging, sensitization of the central nervous system, and psychological factors.

How did you become involved in research/academics?

When I was in DPT school at Washington University in St. Louis I did a research rotation in Dr. Linda Van Dillen's movement analysis laboratory. I was fascinated by the ability to quantify 3D motion to better understand pain, and have been involved in research ever since.

What other activities/hobbies do you enjoy outside of physical therapy?

I still love to dance, although now I do more social dancing—swing, salsa, argentine tango. And thanks to CSM in San Antonio this year, I'm now a big fan of the Texas Two Step.

- Lena Parker, SPT, Regis University

Physical Therapy and Achilles Tendinopathy

Achilles tendinopathy is a clinical condition characterized by pain and swelling in and around the tendon, mainly arising from overuse, but often presenting in middle aged overweight patients with no history of increased physical activity.[1] 65% of injuries diagnosed in general practice are not sport related.[2] Additionally, in the past 3 decades, the incidence of Achilles tendinopathy has risen as a result of greater participation in recreational and competitive sports.[1] Achilles tendinopathy (AT) is a common cause of disability among athletes participating in racquet sports, track and field, volleyball, and soccer.[1] AT is a debilitating injury that affects multiple domains of tendon health and physical function.[2]

The essence of tendinopathy is failed healing response, where the parallel orientation of collagen fiber is lost, and there is a decrease in collagen fiber diameter and in the overall density of collagen.[1] While etiology of AT is unclear, commonly identified intrinsic factors are tendon vascularity, gastrocnemius-soleus dysfunction, age, sex, body weight and height, pes cavus, and lateral ankle instability. Commonly identified extrinsic factors which may predispose an athlete to AT are changes in training pattern, poor technique, previous injuries, footwear, and environmental factors such as training on hard, slippery, or slanting surfaces.[1] Achilles tendinopathy is subdivided by tendon region (i.e. insertional and/or midportion tendinopathy), which has implications for treatment approach.

Physical therapists can play a significant role in the prevention and treatment of Achilles tendinopathy, however best practice in conservative management remains disputed, and early detection and prevention of AT remains difficult. A narrative review of treatment for Insertional Achilles Tendinopathy by Chimenti RL et. al. provides a brief summary of nonoperative treatment recommendations and their grade of recommendation as follows: eccentric exercise through a limited range of motion (ie, avoiding loading the tendon during ankle dorsiflexion) has been demonstrated to reduce pain and have a high level of patient satisfaction (Grade B recommendation)[3]; Extracorpeal shock wave therapy can reduce pain at 4-month to 18-month follow-up (Grade B recommendation)[3]; there is currently insufficient evidence to make a recommendation about the use of night splints (Grade I recommendation)[3]; Injections may be used to target inflammation in tissues surrounding the tendon or neovascularization within the tendon, however long-term efficacy is not currently supported (Grade I recommendation)[3]; Changes in footwear such as a heel lift, anti-inflammatories, iontophoresis, and or/ice can also be used to alleviate pain due to inflammation associated with AT (Grade I recommendation)[3]. Chimenti RL et. al. also makes operative treatment recommendations with mixed graded recommendations that physical therapists should be aware of such as open debridement and decompression, endoscopic/minimally invasive procedures, FHL transfer after Achilles tendon debridement, isolated gastrocnemius recession, and percutaneous procedures.[3] Surgery should be considered when non-surgical management fails, and several surgical procedures have been described that lead to relatively high rates of success with few complications.[4]

While prevention of Achilles tendinopathy is difficult, mostly because the cardinal sign for Achilles tendinopathy is pain in the Achilles tendon that limits sport or work participation, pain with activity is generally preceded by weeks or months of morning stiffness and minor pain, often ignored by individuals and clinicians.[2] The best prevention is to recognize the early "minor" symptoms and treat these with load control (adjusting training loads) instead of ignoring them or only addressing the symptoms. Early injury detection leads to shorter expected time for full recovery.[2]

Physical therapists play a crucial role in the non-surgical management and prevention of Achilles tendinopathy among the general population and among athletes. Recognizing early signs/symptoms, susceptible patient populations, appropriate times to refer patients for surgical management of AT, and return to work and sport progressive training programs are integral for the best management of this debilitating injury.

Please enjoy the rest of the newsletter focused on Achilles tendinopathy, organized by the student team of the APTA Foot and Ankle SIG.

-Olivia Nicholls, SPT, ATC, Washington University in St. Louis

References

1. Longo UG, Ronga M, Maffulli N. Achilles Tendinopathy. Sports Med Arthrosc Rev. 2018;26(1):16-30. doi:10.1097/JSA.0000000000000185

2. Silbernagel KG, Hanlon S, Sprague A. Current Clinical Concepts: Conservative Management of Achilles Tendinopathy. J Athl Train. 2020;55(5):438-447. doi:10.4085/1062-6050-356-19

3. Chimenti RL, Cychosz CC, Hall MM, Phisitkul P. Current Concepts Review Update: Insertional Achilles Tendinopathy. Foot Ankle Int. 2017;38(10):1160-1169. doi:10.1177/1071100717723127

4. Aicale R, Oliviero A, Maffulli N. Management of Achilles and patellar tendinopathy: what we know, what we can do. J Foot Ankle Res. 2020;13(1):59. Published 2020 Sep 29. doi:10.1186/s13047-020-00418-8

Citation Blast – Achilles Tendinopathy

Stania M, Juras G, Chmielewska D, Polak A, Kucio C, Król P. Extracorporeal shock wave therapy for achilles tendinopathy. BioMed Research International; 2019:1-13. doi:10.1155/2019/3086910

Extracorporeal shock wave therapy (ESWT) is a conservative treatment method used in the care of Achilles tendinopathy. This systematic review sought to find optimal parameters as none had been developed at this point. While the review did not conclude a specific set of parameters, the studies included agreed that a low-energy ESWT comes with less risks and is usually well tolerated. The studies agreed that ESWT can be a valuable tool in conjunction with other treatment methods in improving outcomes.

Gatz M, Betsch M, Dirrichs T, et al. Eccentric and isometric exercises in Achilles tendinopathy evaluated by the visa-a score and shear wave elastography. Sports Health: A Multidisciplinary Approach. 2020;12(4):373-381. doi:10.1177/1941738119893996

Eccentric exercises are commonly prescribed in the care of Achilles tendinopathy and are deemed by many as the current gold standard. This randomized control trial set out to find if isometric exercises could be as effective. Participants were split into two groups, eccentric exercises and eccentric along with isometric exercises. The main outcome measures used were the Victorian Institute of Sports Assessment–Achilles (VISA-A) score, the American Orthopedic Foot & Ankle Society score, and shear wave elastography (SWE). The results showed that both groups improved significantly, but there were no statistically significant differences between the two.

Beyer R, Kongsgaard M, Hougs Kjær B, Øhlenschlæger T, Kjær M, Magnusson SP. Heavy slow resistance versus eccentric training as treatment for achilles tendinopathy. The American Journal of Sports Medicine. 2015;43(7):1704-1711. doi:10.1177/0363546515584760

Few randomized control trials have compared heavy slow resistance training to eccentric exercise in the rehabilitation of patients with Achilles tendinopathy. This study contained 58 subjects with chronic midportion Achilles tendinopathy and were assigned to either treatment for twelve weeks. The researchers looked at tendon pain during activity (visual analog scale), tendon swelling, tendon neovascularization, and treatment satisfaction at baseline, after 12 weeks, and at a 52 week follow up. Examples of exercises included: bent knee seated machine calf raise, straight knee heel raise on leg press machine, and straight knee calf raises with a barbell. The results of the study show that each interventions yielded positive, equally good, lasting clinical results in patients with Achilles tendinopathy.

Van der Vlist AC, Breda SJ, Oei EH, Verhaar JA, de Vos R-J. Clinical risk factors for Achilles Tendinopathy: A systematic review. British Journal of Sports Medicine. 2019;53(21):1352-1361. doi:10.1136/bjsports-2018-099991

This systematic review analyzed a large range of studies to determine if there are any potential clinical risk factors for Achilles tendinopathy. The researchers reported finding a high amount of bias in the research, limiting the review to 10 studies. They determined that there is limited evidence for nine risk factors: (1) prior lower limb tendinopathy or fracture, (2) use of ofloxacin (quinolone) antibiotics, (3) an increased time between heart transplantation and initiation of quinolone treatment for infectious disease, (4) moderate alcohol use, (5) training during cold weather, (6) decreased isokinetic plantar flexor strength, (7) abnormal gait pattern with decreased forward progression of propulsion, (8) more lateral foot roll-over at the forefoot flat phase and (9) creatinine clearance of <60 mL/min in heart transplant patients.

Rabusin CL, Menz HB, McClelland JA, et al. Efficacy of heel lifts versus calf muscle eccentric exercise for mid-portion achilles tendinopathy (healthy): A randomised trial. British Journal of Sports Medicine. 2020;55(9):486-492. doi:10.1136/bjsports-2019-101776

Subjects in this parallel group randomized trial with mid-portion Achilles tendinopathy were assigned to an eccentric exercise group or a heel lift group. The subjects in the heel lift group were provided heel lifts to be worn for the 12 weeks of the study. This randomized trial found heel lifts to be more effective in reducing pain and improving function in adults with mid-portion Achilles tendinopathy, however, did not meet the calculated MCID. The results show that a heel lift may be an effective tool in combination with traditional physical therapy.

Ceravolo ML, Gaida JE, Keegan RJ. Quality-of-life in Achilles tendinopathy. Clinical Journal of Sport Medicine. 2018; Publish Ahead of Print. doi:10.1097/jsm.0000000000000636

This study explored the quality-of-life and experiences of people with Achilles tendinopathy. Using the 8-dimension Assessment of Quality-of-Life (AQoL-8D), an online survey was performed and followed by focus groups and interviews at the University of Canberra in Australia. Results were compared to normative scores and showed that AQoL-8D scores were significantly lower in those with Achilles tendinopathy. The researchers comment on how for those who tie their identity and social activities to fitness and physical activity, the effect of Achilles tendinopathy can be profound.

-Cam Craver, SPT, Washington University in St. Louis