



Treating the Challenging Foot and Ankle

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SELECT PHYSICAL THERAPY-MULTI-SITE MANAGER

Overview

- ▶ Differential diagnosis-when it isn't the common...
 - ▶ Ankle sprain vs. impingement or cuboid syndrome
 - ▶ “Over-pronation” case vs. fracture, TTS
 - ▶ Plantar fasciitis vs. medial calcaneal neuritis
 - ▶ Achilles Tendinitis vs Os Trigonum

Overview-lab

- ▶ Exercises
- ▶ Mobilizataions/Manipulations
- ▶ Footwear adaptations

Ankle Sprains-Typical Case

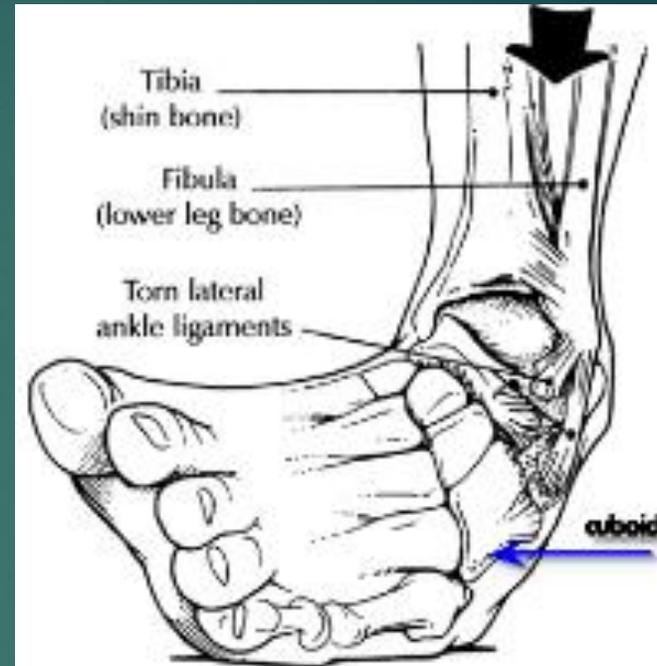
- ▶ Initially very swollen, bruised, painful
- ▶ Point tender to ATFL
- ▶ Typically mostly better in 2ish weeks
- ▶ Return to sport in 3ish weeks
- ▶ Swelling and bruising will subside, WB improves, AROM, functional strength improve

Ankle Sprains-things that make you go hmm.....

- ▶ Pain (even significant) located in same area but not swollen or bruised- subfibular impingement-usually increased pronation
- ▶ Very little eversion strength or even ROM after several weeks-peroneal tendon
- ▶ Pain at night-fracture (talar dome, avulsion), but also peroneal tendon
- ▶ Painful WB but otherwise normal-fixed talocrural or subtalar joint
- ▶ Lateral midfoot pain vs ankle pain-cuboid syndrome

Cuboid syndrome

- ▶ Sharp pain in lateral midfoot
- ▶ Point tender just proximal to 4th MT
- ▶ Sudden onset
- ▶ Often after trauma- ex: ankle inversion injury
- ▶ Treatment
 - ▶ Cuboid whip
 - ▶ Taping
 - ▶ MWM
 - ▶ Anti-inflammatory
 - ▶ IASTM



[Cuboid Lock Strapping for Cuboid Syndrome - YouTube](#)

“Over-pronation”-common

- ▶ Gradual onset
- ▶ Obvious over-pronatory pattern
- ▶ Usually running athletes, especially distance
- ▶ Pain located medial foot, ankle and/or tibia

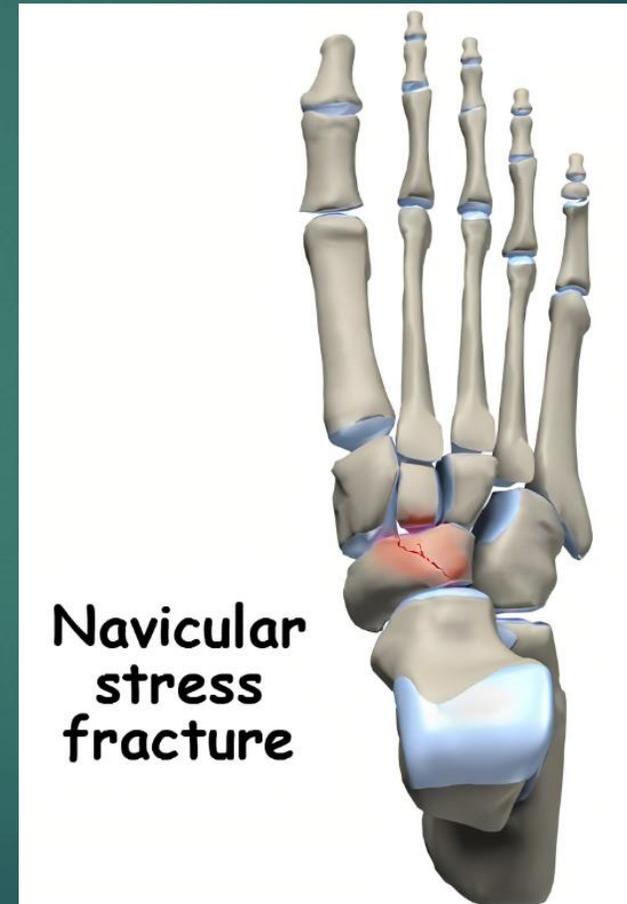
- ▶ Treatment
 - ▶ Gluteal, inversion strengthening
 - ▶ 1st ray PF mobs with intrinsic training
 - ▶ Arch taping

“Over-pronation”-things that make you go hmmm....

- ▶ Over-pronatory pattern, but...
 - ▶ Pain located lateral ankle
 - ▶ Subfibular/anterolateral impingement (track athlete-L ankle)
 - ▶ Treatment-mobs, strengthening, arch taping, IASTM, medial calc posting
 - ▶ Night pain or pain while driving/riding in car
 - ▶ navicular fx
 - ▶ tarsal tunnel-common in softball/baseball catchers
 - ▶ Tibial stress fx

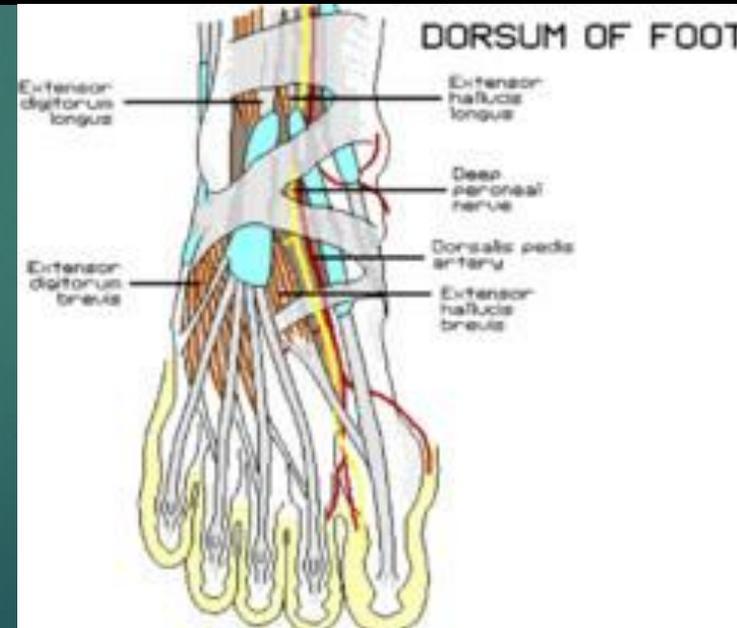
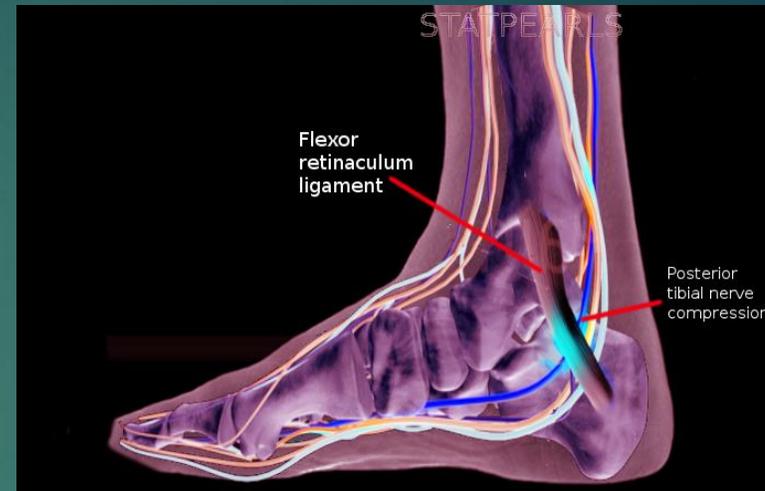
Fractures

- ▶ Navicular Fx
 - ▶ Jumping or distance athletes- basketball, gymnastics, runners
 - ▶ Change in running surface
 - ▶ Improper footwear
 - ▶ Vague pain in midfoot
 - ▶ Poor landing mechanics
 - ▶ Females>males-especially absence of menstrual cycle



Tarsal Tunnel Syndrome

- ▶ Tarsal Tunnel Syndrome
 - ▶ Pain with DF
 - ▶ Nerve pain (deep ache, paresthesia, night pain)
 - ▶ Positive Tinel's
 - ▶ Positive neural tension
- ▶ Anterior Tarsal Tunnel
 - ▶ Traction-dancers, soccer athletes
 - ▶ Tendinopathy-EHB
 - ▶ Tight shoes-lacing techniques
 - ▶ Positive neural tension



Plantar Fasciitis-Common

- ▶ Pain immediately upon standing, especially after prolonged rest
- ▶ Point specific pain at plantar calcaneus

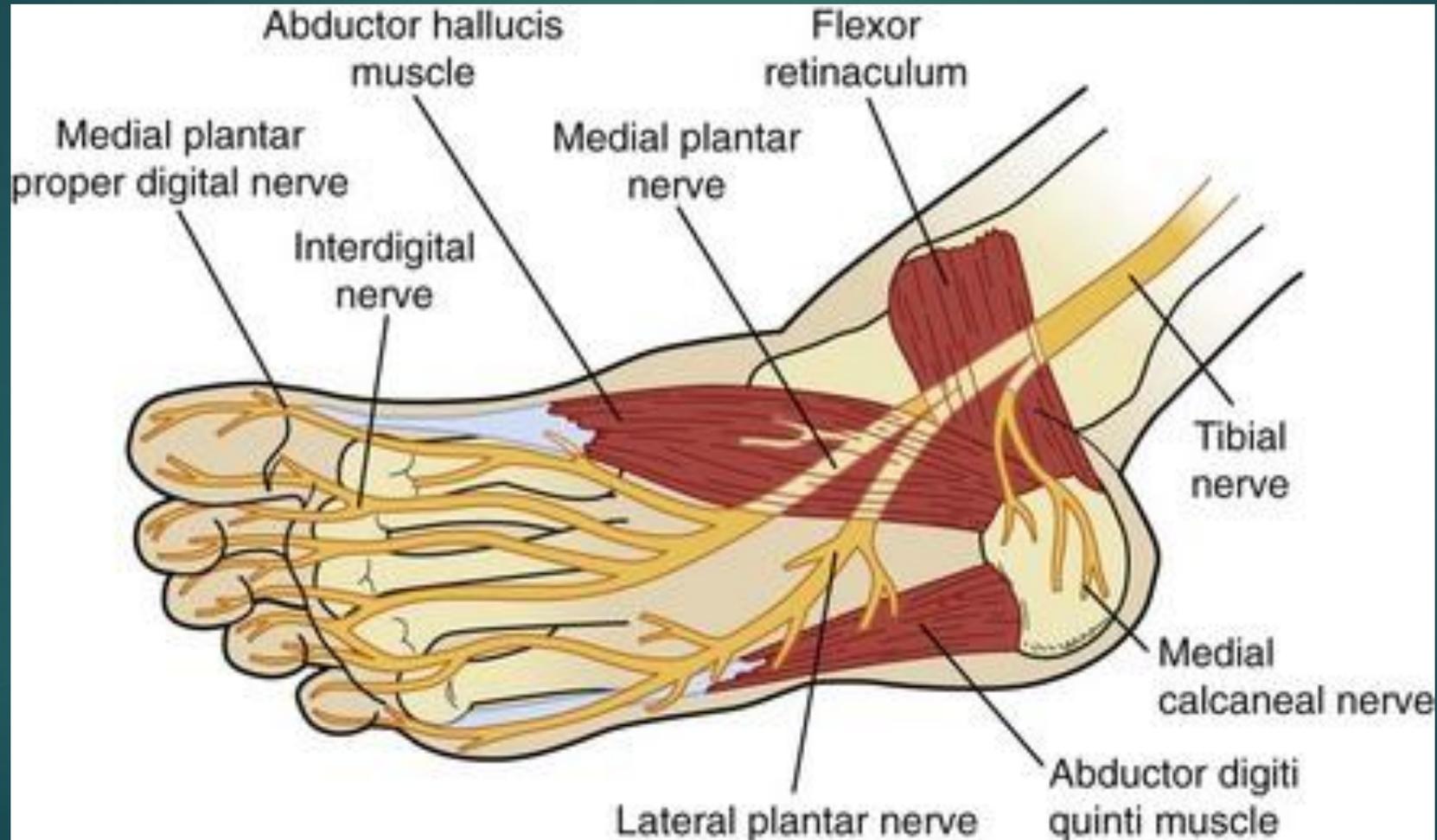
Treating Over-pronation and Plantar Fasciitis

- ▶ 1st Ray mobs
- ▶ 1st MTP mobs
- ▶ IASTM
- ▶ Intrinsic muscle activation
- ▶ Subtalar mobs/manipulation
- ▶ Gluteal strengthening

Plantar Fasciitis- things that make you go hmmm...

- ▶ Neuritis-Medial Plantar N
 - ▶ Pain at night
 - ▶ Pain in NWB
 - ▶ Pain in car or while driving
- ▶ Treatment
 - ▶ Find source of Neural compression
 - ▶ Lumbar spine, sciatic, tarsal tunnel
 - ▶ Nerve glides
 - ▶ Tone reduction

Medial Calcaneal Nerve



Achilles tendinopathies- Common

- ▶ Pain with stretch of Achilles tendon
- ▶ Initially mildly painful, slightly weak resisted plantar flexion
- ▶ More sore after rest
- ▶ Usually improves with warm up

Achilles...or not

Os Trigonum

Painful plantar flexion,
especially end range

Usually soccer athlete or
dancer

Very common but identified
more in these athletes

Treatment

Taping to reduce PF

Injections/surgery



Let's Get Poppin'

- ▶ Talocrural Mobilization/Manipulation
- ▶ Subtalar Mobilization/Manipulation
- ▶ 1st Ray Mobilizations
- ▶ 1st MTP Mobilizations

Exercises

- ▶ Standing clams
- ▶ 1st ray PF
- ▶ 1st ray PF iso hold

Footwear

- ▶ Posting
- ▶ Pressure relief
- ▶ Lacing techniques

Resources

- ▶ Jacobson KE, Liu SH. Anterolateral impingement of the ankle. *J Med Assoc Ga.* 1992 Jun;81(6):297-9. PMID: 1607843.
- ▶ Helgeson K. Examination and intervention for sinus tarsi syndrome. *N Am J Sports Phys Ther.* 2009;4(1):29-37.
- ▶ Nault, ML, Kocher, MS, Micheli, LJ. Os Trigonum Syndrome, Review Article. *Am Acad of Ortho Surg.* 2014; 22(9) 545-553.
- ▶ [Disorders of the Foot and Ankle | Musculoskeletal Key-medial nerves image](#)
- ▶ [Endoscopic Excision of Symptomatic Os Trigonum in Professional Dancers - The Journal of Foot and Ankle Surgery \(jfas.org\)- Os Trigonum image](#)
- ▶ [What Is Navicular Stress Fracture? | New Health Advisor](#)
- ▶ <https://3.bp.blogspot.com/-RO1e9MecevU/UnAHY51-IwI/AAAAAAAAA0I/I7CVnVL7GDQ/s1600/Cuboid-Syndrome.png>
- ▶ [Cuboid Lock Strapping for Cuboid Syndrome - YouTube](#)
- ▶ <http://www.physioadvisor.com.au/health/taping-techniques-lower-body/posterior-ankle-impingement/>
- ▶ <https://www.statpearls.com/articlelibrary/viewarticle/29876/>
- ▶ Dreyer MA, Gibboney MD. Anterior Tarsal Tunnel Syndrome. [Updated 2022 Jan 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK538488/>