Posterior Ankle Pain

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Ortho Nebraska

AMERICAN MIDWEST BALLET

NEURO TOUR PHYSICAL THERAPY, INC.

** I have no conflicts of interest to disclose **

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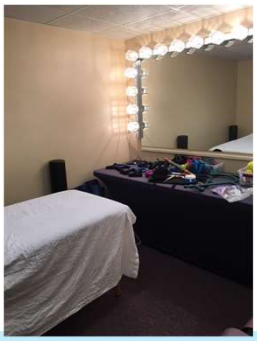

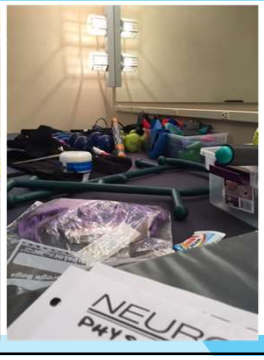

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Objectives

- Following this presentation, the participant will
  - 1. Discuss common causes of posterior ankle pain related to overuse.
  - 2. Discuss etiology, clinical presentation and physical therapy management of posterior ankle pain health conditions.
  - 3. Identify dance specific considerations for identifying and treating these diagnoses.

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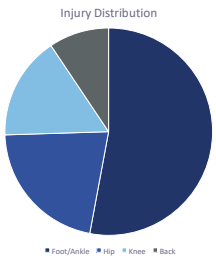
Injury Distribution in Dancers

- Incidence:
  - Amateur:
    - 0.99 (M) to 1.09 (F) injury/1000 hours
    - 75% overuse (M and F)
  - Professional:
    - 1.06 (M) and 1.46 (F) injuries/1000 hours
    - 64% (F) and 50% (M) overuse



Smith et al 2015, Gamboa 2008

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So focusing on overuse issues…

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Common Foot/Ankle Dance Injuries

- Ankle sprains
- Achilles tendinopathy
- Ankle impingement
- FHL tendinopathy
- CAI
- Stress fx

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So focusing on posterior causes…

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Posterior Pain.. The Likely Suspect

- Achilles tendinopathy
  - Limited and painful DF
  - Pain with PF
  - Pain midsubstance vs. insertional

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PEACE and LOVE

- Immediately after injury, do no harm and let PEACE guide
  - Protect
  - Elevate
  - Avoid anti-inflammatory modalities
  - Compress
  - Educate

- After the first days have passed, soft tissues need LOVE
  - Load
  - Optimism
  - Vascularity
  - Exercise

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Achilles Tendinopathy: PT Management

- Strengthening
  - Progressive
  - Isometrics (Cook 2016)
  - Eccentric loading (Sussmilch-Leitch et al 2012)
  - Heavy load, slow speed (concentric/eccentric) (Beyer 2015)
- Dosage
  - Varying recommendations
  - 2x/day vs. 2x/week
  - "As tolerated" vs. "protocol" (Stevens and Tan 2014)
  - 12 week duration
  - 3 days rest after heavy loads

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Posterior Impingement

- Structures compress between tibia and calcaneus in PF
- Caused by repetitive and forceful plantarflexion
- Common post ankle sprain

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Posterior Impingement

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Posterior Impingement- Soft Tissue Causes

- Flexor hallucis longus
- Joint capsule
- Posterior ligaments
- Cysts

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Posterior Impingement- Bony Causes

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Posterior Impingement- Os Trigonum

- Secondary ossification center of the talus or non-union fracture of the Steida process
- 7-10% of general population
  - 50% of those are bilateral
- 19 retired professional dancers
  - 47% ankles had hypertrophic lateral talar process, but no pain

So probably not the os itself that is causing pain…

Hamilton 1982, Malone 1990, Lawson 1985, Van Dijk 2000

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Posterior Impingement- Clinical Presentation

- Posterolateral or Posteromedial joint line pain and tenderness
- Pain with active and passive plantarflexion
  - Possible decrease in ROM
  - Possible inversion compensation
- Posterior Impingement test

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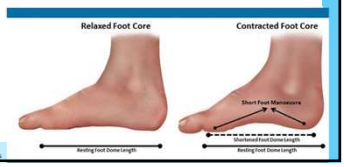
Posterior Impingement Physical Therapy Management

- Decrease pain/swelling
- Promote normal mobility and mechanics
- Strengthen foot intrinsic muscles and ankle muscles
- Proprioception
- Graded return to activity



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Medical Management

- Corticosteroid or Lidocaine Injection
- Surgical Resection

	Complication rate	Nerve injury rate	Return to Sport
Posteromedial (open)	3.9%-7%	1.6%	
Posterolateral (open)	14.7%	12.9%	11.9 weeks
Arthroscopic	4.8%	3.7%	6.0 weeks

Carreira et al, Lopez et al, Ribbans et al 2015, Guo et al 2010

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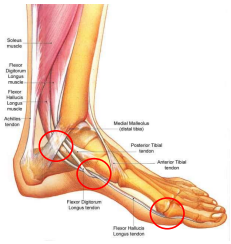
Flexor Hallucis Longus Tendinopathy

- Dancer's tendinitis
- 3 stress sites
  - Fibro-osseous tunnel
  - Henry Knot
  - Between sesamoids
- Repetitive motion of tendon gliding
- Possible degenerative changes



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FHL Tendinopathy Clinical Presentation

- Posterior/medial ankle pain
- Pain with active ankle plantarflexion more than passive
- Pain with resisted great toe flexion/ankle plantarflexion
- Thomasen Sign/FHL stretch test

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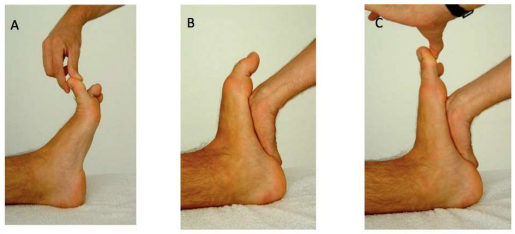
FHL Stretch Test



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FHL Tendinopathy
Physical Therapy Management

- PEACE and LOVE
- FHL strengthening/stretching
- Intrinsic foot strengthening
  - Short foot vs. Toe curl
- Biomechanics assessment

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FHL Tendinopathy
Medical Management

- Corticosteroid injection
- Surgical resection of nodule or tendon sheath
  - Return to sport 3-5 months

Michelson and Dunn 2005, Kolettis 1996

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Physical Therapy and the Dancer

- Minimize time away from dance without compromising healing
- Taping preferred over Bracing
- Incorporate functional dance positions
- Proximal strengthening
- Progressive return

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Questions?

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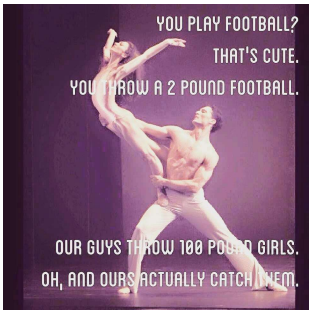

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Patient Case

- 26 y.o female ballet dancer
- R posterior/lateral ankle pain
- Current Sx: 2 week history, insidious onset of sharp pain with pointing the toe, releve and repetitive jumps
- Previous Hx: similar symptoms 2 years ago, recurrent R ankle sprains
- Currently unable to dance on pointe, relief from ice, elevation and NSAIDs

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Patient Case

- AROM PF: 92° L, 80° R (painful)
- PROM PF = AROM PF
  - Hard end feel, painful with overpressure
- DF ROM normal, but painful when passive great toe dorsiflexion added
- Pain with resisted ankle and great toe plantarflexion, MMT limited by pain. No pain or weakness with other resisted tests.
- Tender to Palpation just posterior to lateral and medial malleoli, lateral > medial. No swelling noted.

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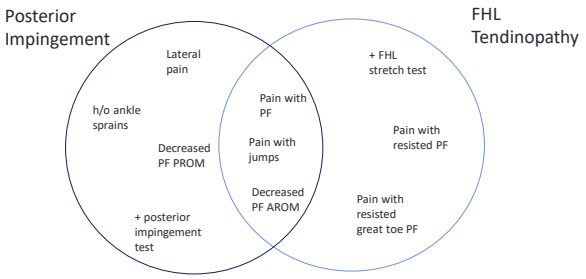

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