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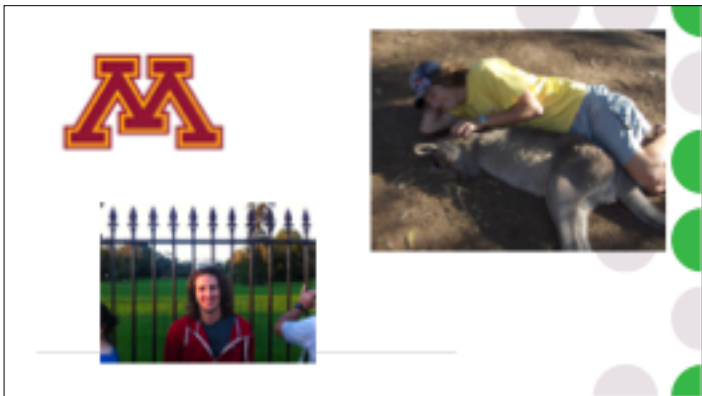
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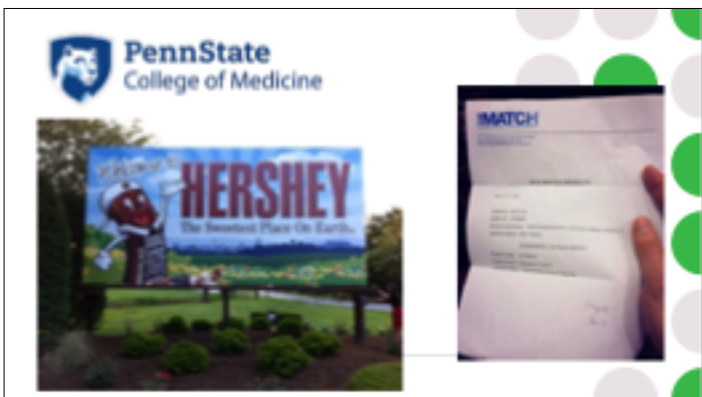
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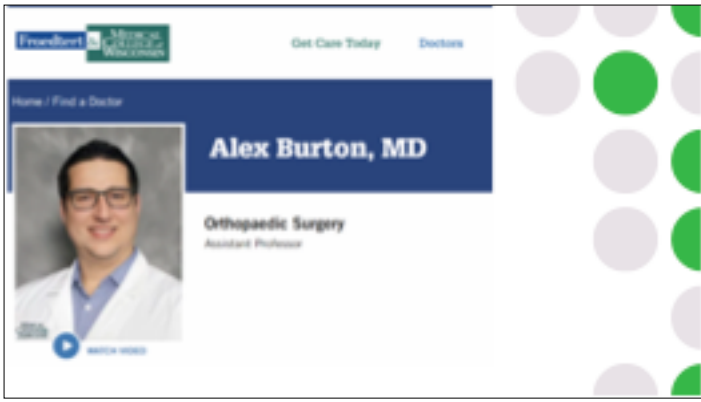
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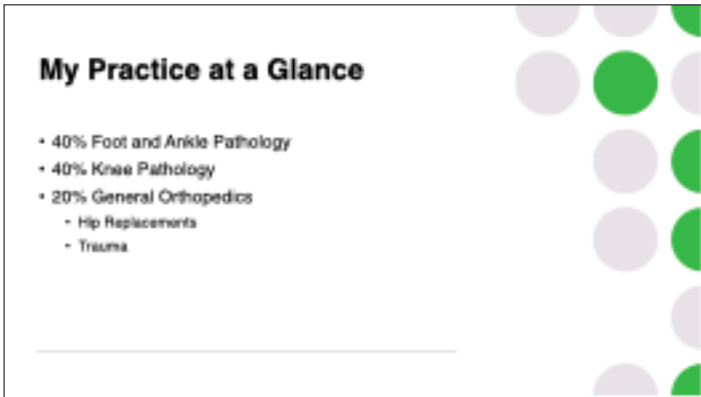
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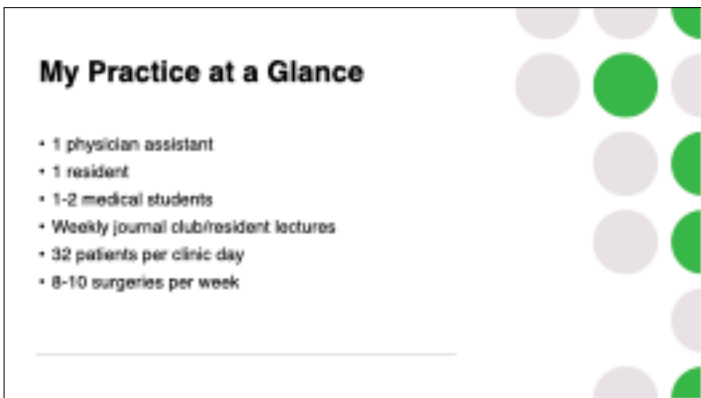
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## Ankle Sprain

- One of the most common injuries
- ~25,000 ankle sprains occur daily in US
- 85% "lateral" ankle sprain
- Wide variety of severity
  - Ability to weight bear




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## Mechanism

- Anterolateral rotation
- Foot is typically plantar flexed
- Ankle is "supinated" (inversion injury)




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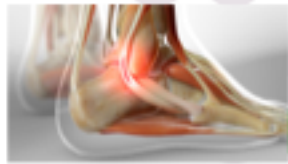
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## Accompanying Injuries

- Peroneal tendon tear
- Peroneal tendon subluxation
- Sural nerve neuritis
- Osteochondral lesion of the talus
- Syndesmosis Rupture




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## Why Ankle Sprains?




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### Subjectivity

- No objective measure to diagnose an ankle sprain
- Indication for surgery differs from surgeon to surgeon
  - Podiatry versus Orthopedics




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### Anatomy

- Warning – cadaver images ahead!




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### Anatomy

- What is actually injured?




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### Anterior Drawer Test




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### Standard of Care

- Early weight bearing
- Early physical therapy
  - Proprioception
- Recommend against cam boot immobilization
  - Somewhat controversial
- No role for early surgical intervention




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### My approach

- Ankle sprain severity
  - Presentation – are they in a splint? CAM boot? Crutches?
  - Can they bear weight?
- Goal discussion
  - Athlete returning to sport?
  - Injured worker?
    - Scaled work?




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### My approach

- Physical therapy
  - Proprioception
    - Re-establishing "trust" in ankle
    - Decrease swelling
    - Strengthen secondary stabilizers (muscles)




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### My approach

- Routine Follow Up
  - 6 weeks from date of injury
  - ~80% fully resolved within this time frame
  - Monitor for other pathologies
    - Peroneal tendon injuries
    - Anterior ankle impingement
    - Osteochondral lesions of the talus
  - If not progressing, MRI




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## Lateral Ankle Ligament Reconstruction

- Modified brostrom procedure




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## Recovery

- Variable
- 3-6 months restrictions
- Return to sport difficult
- My approach
  - Weight bearing in boot at 2 weeks post op
  - Boot for 6 weeks post op
  - Restrictions for 3 months

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## The Key is Stability




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## Does Instability Cause Pain?

- ... Maybe...
- My approach
  - Consider lidocaine injection into ankle joint
  - Helps differentiate ankle pain versus instability
  - Patient has no pain but still does not "trust" their ankle

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### Similar.. But Different

- Anterior Ankle Impingement
  - Anterior ankle pain with weight bearing/activity
    - Instability due to pain...
  - Can be in addition to instability or in isolation
- Lidocaine injection, symptoms that change with bracing/cam boot




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### Similar.. But Different

- Anterior Ankle Impingement
  - Can resolve without treatment
  - Can resolve with single steroid injection
  - Can resolve with PT
  - Recalcitrant cases – ankle arthroscopy, anterior decompression
    - 3 weeks in cam boot, toe touch weight bearing, no restrictions after




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### Sprain Versus Fracture

- Is it broken or just fractured?
- Ankle fractures are more predictable
  - Prognosis
  - Indications for surgery

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### So why are we talking about ankle sprains?

- ~ half of my IME/record reviews are for "ankle sprains"
- For example.....




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**History of present illness obtained from patient**

33-year-old male presents to the emergency room complaining of right great toe and low back pain after a Chevy SUV that he was traveling in struck a ditch due to slippery conditions running off the road. The patient was a backseat passenger unrestrained in which some hand tools struck his low back resulting in the pain. He also injured his right great toe which she has some blood around the distal end of the nail. He denies any head, neck, chest, abdominal or any additional extremity injury or pain.

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**Case Example**

- 30 something year old male involved in a work truck crash when the truck went off the road in icy conditions
  - Otherwise healthy
- ER visit
  - Lumbar sprain (xrays normal)
  - Tuft fracture of the big toe



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**What is a tuft fracture**

- Have you ever hit your thumb with a hammer?
  - It's a bad day.
  - They do heal on their own without surgery



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**How does this...**

**IMPRESSION:**

Subtle fracture in the distal tuft of the great toe distal phalanx with diffuse soft tissue swelling.



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**IMPRESSION**

• **How does this...** Subtle fracture in the distal tuft of the great toe distal phalanx with diffuse soft tissue swelling.




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**IMPRESSION**


• **How does this...** Subtle fracture in the distal tuft of the great toe distal phalanx with diffuse soft tissue swelling.

• **Become this....**

**Assessment**

**History**

1. Motor vehicle accident/work injury.
2. Fracture, distal phalanx, right hallux, which is closed and non-displaced.
3. Hallux valgus deformity on the right.
4. Hallux abducto-divergens, hallux limitus on the right.
5. Metatars instability and arthritis on the right.
6. Foot and ankle sprain on the right.
7. Mild plantar fasciitis on the right.
8. Lateral ankle capsule on the right.
9. Lateral ankle instability on the right.




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• **Surgery 1:**

**Operative Findings:**

1. Repair of fracture of the proximal phalanx and distal radius of the right forearm.
2. Repair of fracture of the distal radius of the right forearm.
3. Repair of fracture of the distal ulna of the right forearm.
4. Repair of fracture of the distal radius of the right forearm.
5. Repair of fracture of the distal ulna of the right forearm.
6. Repair of fracture of the distal radius of the right forearm.
7. Repair of fracture of the distal ulna of the right forearm.
8. Repair of fracture of the distal radius of the right forearm.
9. Repair of fracture of the distal ulna of the right forearm.

• **Surgery 2:**

**Operative Findings:**

1. Repair of fracture of the proximal phalanx and distal radius of the right forearm.
2. Repair of fracture of the distal radius of the right forearm.
3. Repair of fracture of the distal ulna of the right forearm.
4. Repair of fracture of the distal radius of the right forearm.
5. Repair of fracture of the distal ulna of the right forearm.
6. Repair of fracture of the distal radius of the right forearm.
7. Repair of fracture of the distal ulna of the right forearm.
8. Repair of fracture of the distal radius of the right forearm.
9. Repair of fracture of the distal ulna of the right forearm.




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**Mechanism of Injury is important..**

•The claimant complained of a work-related injury where a water cooler fell on her left foot.

•Exam showed increased warmth over the left foot and ankle area.

•She was diagnosed with a severe foot and ankle sprain, left side and contusion, left side.

•Surgery was recommended in the form of a lateral ankle stabilization




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## Summary

- Ankle instability is a subjective diagnosis
  - Mechanism of injury is important
  - Almost no role for early surgical intervention
- Early mobilization and physical therapy are agreed upon treatments

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## Questions?



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