

# Fractures and Dislocations of the Ankle in Athletes

Barton R. Branam, MD  
April 28, 2016

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## Ankle Injuries in Athletes

- Extremely common injury
- Important to expeditiously evaluate and treat the athlete
- Important to differentiate between ankle fracture, dislocation and ankle sprain
- Delay in diagnosis or treatment can adversely effect the athletes time to return to sport and outcome.



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## On field management-ankle sprain

- Evaluate for obvious deformity
- Leave shoe on
- Mechanism of injury
- Get patient off field
- Note time and score
- Inversion or Eversion
  - Inversion
    - Eval crepitus
    - Yes→done
    - No→eval ability to cut/run
  - Eversion
    - Pain prox fibula, squeeze, deltoid
      - Yes-Suspicious syndesmotic
      - No→can get up on toe
        - Yes-eval cut/run
        - No-unlikely

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## Ankle Injury

- Sprain
  - Lateral
    - Eval severity
    - Ice
    - Boot/lace up brace
    - Tape
    - Meds
    - Injection?
    - Go as tolerated
  - High
    - Boot
    - Oral meds
    - Injection
    - Expect longer recovery
- Fracture
  - Stable
    - Boot
    - Early ROM, therapy, avoid NSAIDS
  - Unstable
    - Surgery
  - High Stakes
    - Ankle is unforgiving
    - If in doubt, make certain anatomic and stable

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## Return to Sport

- Robertson et al, Foot & Ankle International, 2014
- Epidemiology, Management, and Outcome of Sport-Related Ankle Fractures in a Standard UK Population
- All fractures presenting to Lothian adult ortho service 2007-8 were prospectively evaluated and contacting in 2011
- 84/96 patients/fixs followed for mean 36 mo
- Most common sports soccer(49), rugby(15)

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## Return to Sport

- 52 Non op fx, 44 Operative
- Mean return to sport  $p < .001$ 
  - Non op--20 weeks(4-52w)
  - Operative--35 weeks (8-104w)
- Return to sport  $p < .016$ 
  - Non op 100%
  - Op 87%
- Persistent symptoms  $p < .001$ 
  - Non operative-17%
    - None interfered with sport
  - Operative -71%
    - 8/27 interfered with sport

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## Return to Sport

- Non displaced ankle fractures can be managed nonoperatively
- Greater return to sport, quicker return times, lower persisting symptom rates, but less severe injuries

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## Unstable Ankle Fractures in Athletes

- Rigid anatomic ORIF and repair of indicated ligaments
- Accelerated rehab-near immediate ROM an early appropriate WB
- Return to sport
  - Early as 4 w for isolated Lat mall
  - 8-10 w after bimall equivalent with deltoid repair
  - 4-6 mo for syndesmotic injury

Jelinek & Porter, Foot Ankle Clin N Amer, 2009

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## Athletes-High Energy



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High Energy



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High Energy



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ER Mechanism-Stress Views



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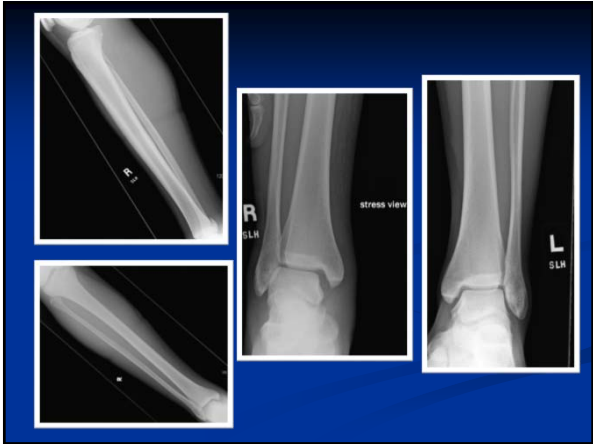
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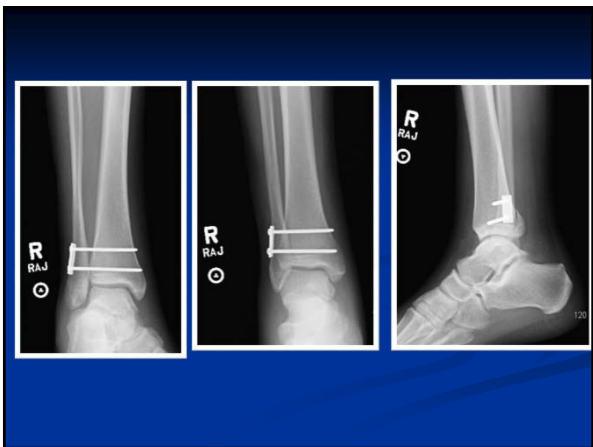
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### Deltoid Repair in NFL Players

- Hsu, Lareau, Anderson, F&AI, 2015
- Repair of Acute Superficial Deltoid Complex Avulsion During Ankle Fracture Fixation in National Football League Players
- Hypothesized high energy injury and infolded, retracted lig may cause pain, malreduction, instability and ↑medial clear space
- 14 NFL football players, 2004-14

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### Deltoid Repair NFL

- Sx-Scope, debridement, fibula ORIF, suture button syndesmosis fixation, open deltoid lig repair w suture anchors
- Results
  - All returned to running/cutting by 6 months
  - No sig diff in playing experience pre or post injury
  - Ave playing experience after injury was 1.6 seasons, 16 games played, 15 games started
  - 86% return to play for all players

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## Deltoid Repair NFL

- Conclusions-
  - Sup deltoid lig injury during high energy ankle fractures may benefit from open repair
  - Majority of NFL players treated with repair returned to play with no medial instability or pain.

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## Ankle Scope in Acute Ankle Injuries in Athletes

- Hepple, Guha, Foot Ankle Clin N Am, 2013
- Highlight a role for ankle scopes for acute ankle injuries
- Up to 60% of ankle fx may have a cartilage injury

Box 1
Indications for acute ankle arthroscopy
Indications for arthroscopic-assisted surgery in acute ankle injuries
<ul style="list-style-type: none"> <li>• Acute ligament injury</li> <li>• Chondral/osteochondral injuries</li> <li>• Malleolar fracture</li> <li>• Distal tibial fracture</li> <li>• Syndesmosis injuries</li> <li>• Talus body/neck fractures</li> <li>• Talar process fractures</li> <li>• Peri-ankle tendoscopy</li> </ul>

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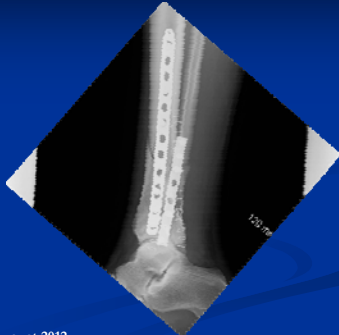
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## Persistent Pain



August 2012

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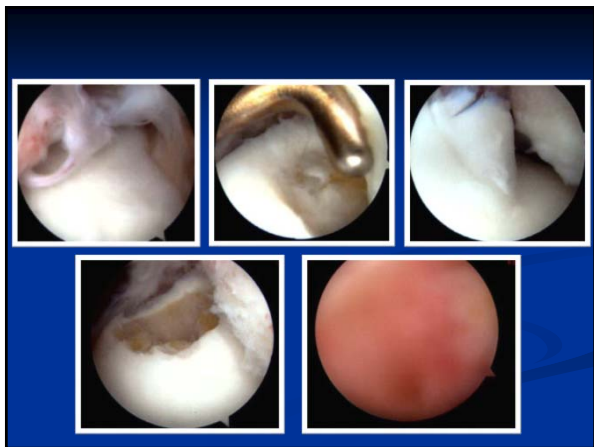
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## Summary

- Ankle injuries are common in athletes
- Important to expeditiously and accurately diagnose the athlete's injury
- Sprains and non displaced fractures can be mobilized early
- Unstable fractures require rigid anatomic reduction with early ROM and weight bearing if appropriate
- Return to play data is promising

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## Thank you

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