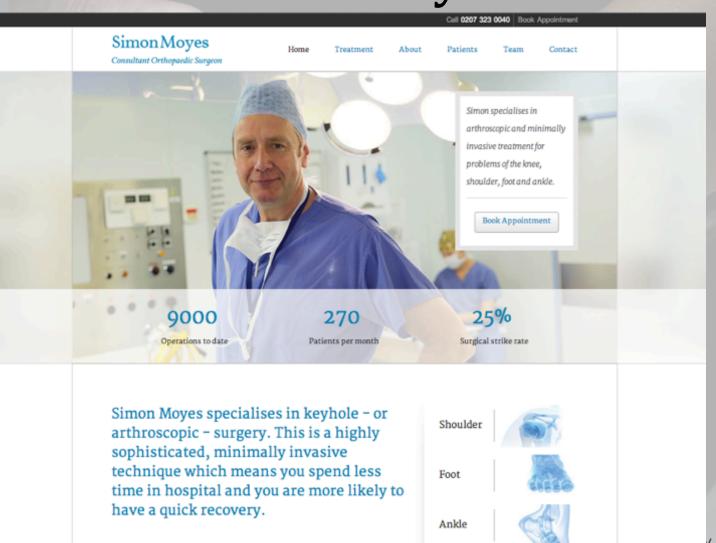
#### www.simonmoyes.com



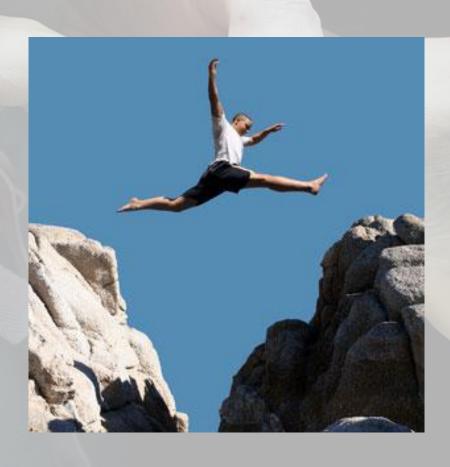
#### www.ankle-arthroscopy.co.uk



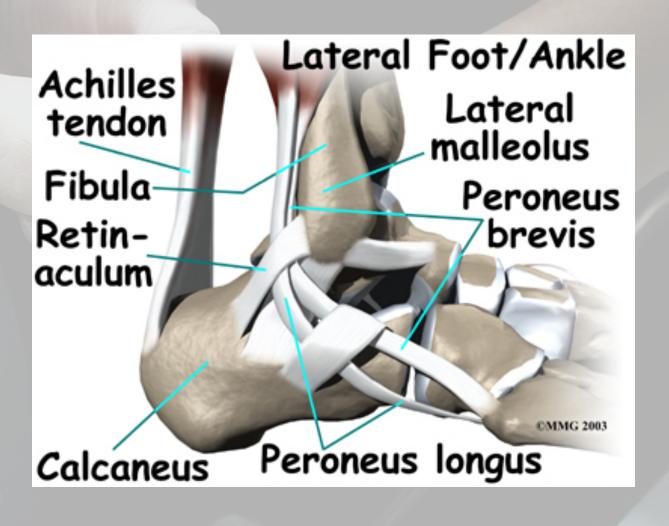
# Ankle Instability.

Presented by Mr Simon Moyes

## Incidence 1/10,000 people per day



#### Lateral Ankle Structures



#### Potential Inversion Injuries

- 1. Fractures
- 2. Lateral ligament injuries
- 3. Peroneal tendon injuries
- 4. Syndesmosis injuries
- 5. Talar Dome injuries
- 6. Any combination of the above

#### Fractures Fibular



#### Fractures

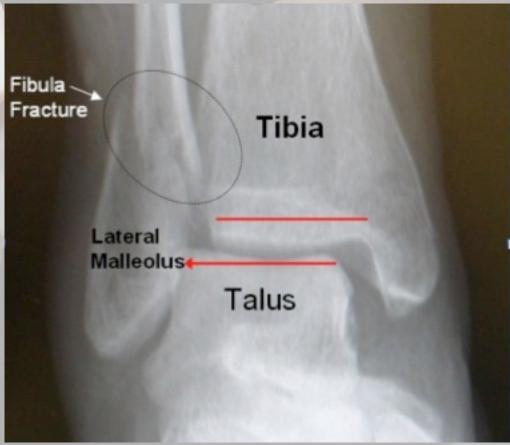
5th Metatarsal



#### Fractures

**Ankle Fractures** 





#### Fractures

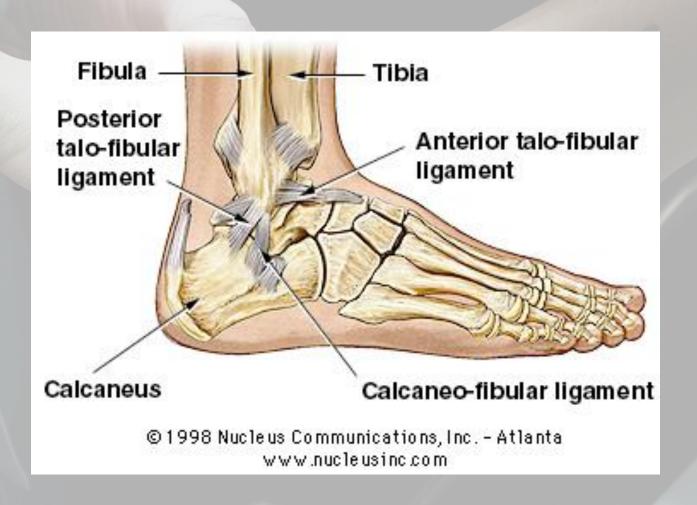
**Cuboid Fractures** 



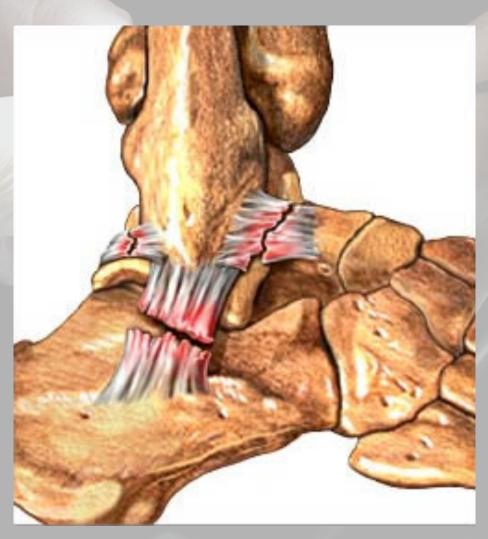
#### Lateral Ligament Injuries



#### Lateral Ligament Injuries



#### Lateral Ligament Injuries



#### Peroneal Tendon Injuries



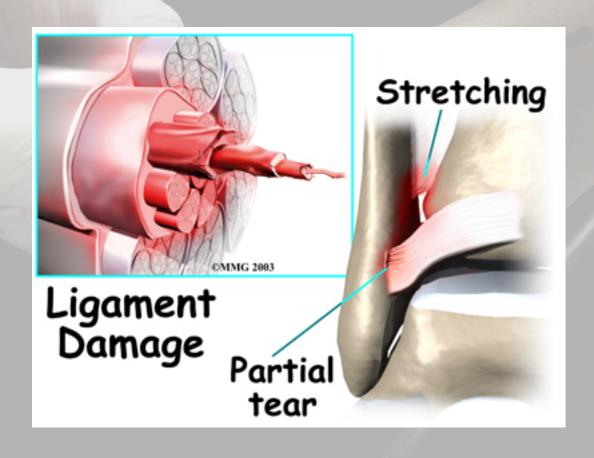
## Peroneal Tendon Injuries



# Syndesmosis Injuries



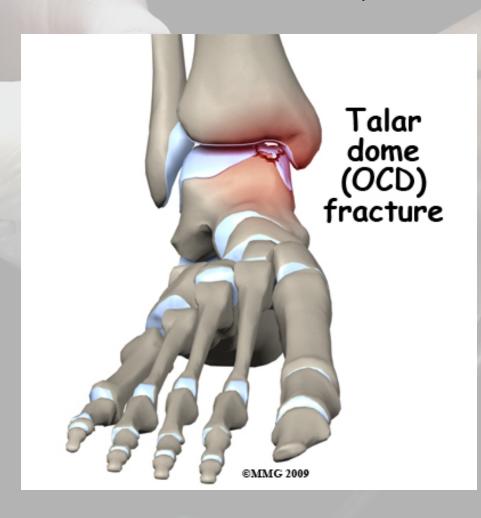
#### Syndesmosis Injuries



# Syndesmosis Injuries



#### Talar Dome Injuries



# Talar Dome Injuries



# Talar Dome Injuries



#### Acute Ankle Sprain



14-21% of sports injuries.

• Grade I: painful, but no laxity cf uninjured side.

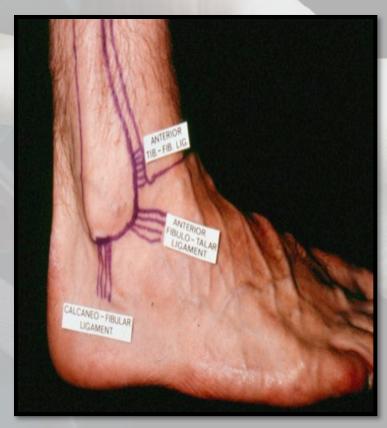
•Grade II: painful with increased laxity.

• Grade III: painful with unstable ankle, painful to wb.

# Lateral Ligament Injuries Acute Management

- 1. Clinical Assement
- 2. X-ray and MR
- 3. Air cast or Vacoped Immobilisation
- 4. RICE
- 5. Physiotherapy/Rehab
- 6. Conservative Mx successful >90%

## 'Chronic' Ankle Sprains



'It's OK, it's only a sprain!'

#### Relevance

- High incidence of persistent symptoms
- •Grade III ankle sprains: 25-60% of patients are symptom-free 1-4 years after injury
- Not a benign condition

Karlsson, Sports Med. 1997 Nov;24(5): 337-46

#### Examination



• Anterior draw. Suction sign increase 'draw' 20deg plantar flexion. subtle 30N > 60N. (Not a kung-fu manoeuvre!)



(Tohyama H et al. Am J Sports Med 2003)

The talar tilt test (ankle plantigrade): tilting the hindfoot and observing suction sign or asymmetrical movement.

#### Investigations





- MRI: No indication of stability!
  (Useful for associated pathology.)
- Stress radiography: useful but not always definitive
- -anterior draw of 10mm+ or 3mm cf opp side
- -talar tilt of 9°+ or 3° > opp side. Karlsson J et al. Radiographic evaluation of ankle joint stability. CJSM 1991b

# **Epidemiology Sprains**

- Smith and Reischl: 84 college basketball players 56% multiple sprains; 50% residual problems.

  AJSM. 1986 Nov-Dec;14(6):465-71
- Munk (1995):79 patients 9-13 years after sprain 5% pain, 15% structural instability 6% functional instability.

Acta Orthop Scand. 1995 Oct;66(5):452-4

**Tendinopathy** 

Instability

# Chronic Ankle Sprain

?misdiagnosis 5<sup>th</sup> met/lat talar process,ant process calcaneus.

**Impingement** 

Osteochondral lesion

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## Chronic Instability

• Defined: recurrent giving-way>6 months despite adequate non-surgical therapy.





## Pathology

- Freeman proposed 'Functional' and 'Structural' Instability
- Functional = subjective 'giving way'.
- •Structural = abnormal movement of the talus within the ankle mortise
- Not all patients who have functional instability have defineable structural instability, and vice-versa

# Pathology: Functional Instability

- •Functional instability without structural stability is the result of proprioceptive defect.
- Arthrogenic muscle inhibition (AMI) is a reflex inhibition of peri articular musculature following distension or damage of that joint.

Hopkins JT, Ingersoll CD. J Sport Rehabil, 2000;9:135-159.

# Lateral Ligament Injuries Chronic Management

- 1. Clinical Assement
- 2. X-ray and MR
- 3. Ankle Arthroscopy + Brostrum repair
- 4. Physiotherapy/Rehab
- 5.95% good or excellent results

#### Diagnostic Examination



The ankle is first distended with approx 30cc of saline.

- The anteromedial portal is established just medial to tibialis anterior at the level of the joint line carefully avoiding the saphenous nerve.
- Then the anterolateral portal is established using transillumination, avoiding the superficial branch of the lateral popliteal nerve. A full diagnostic inspection of the anterior compartment is then carried out.
- Then the posterolateral portal is made, localising the entry point with a spinal needle. A full inspection of the posterior compartment is then made.

Using these three portals, a full systematic ankle examination can be carried out.

# Theatre Set-Up



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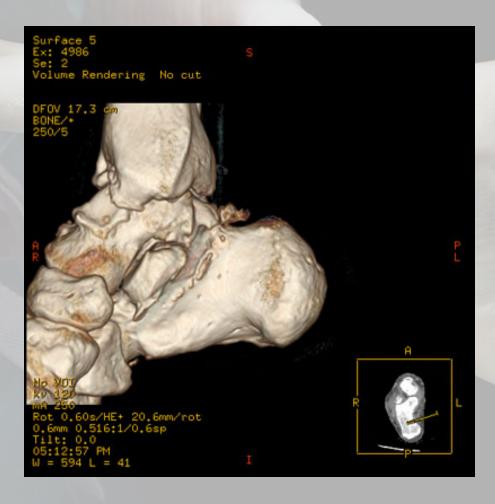
#### Soft Tissue Lesions

- Patients with such lesions present with a combination of pain, swelling, tenderness, locking and giving way.
- On examination, one finds a combination of tenderness, wasting, swelling, restricted range and instability.
- Traumatic: sprains, fractures, prior surgery
- Excise generalised synovitis
- Excise localised bands
- Excise meniscoid lesions secondary to impingement

# Post Traumatic Soft Tissue Lesions

- Anterolateral post traumatic synovitis
- Syndesmotic impingement lesions
- ·Lateral gutter impingement lesion
- Meniscoid bands

#### **Articular Surface Defects**



Arthroscopy is the best way of visualising and treating articular surface defects.

#### Loose Bodies



- Primary and secondary osteoarthritis can be treated arthroscopically.
- Cheng and Ferkel (87) in 1998 showed that arthroscopic debridement for ankle and subtalar degenerative disease can provide an interim alternative to arthrodesis or ankle replacement, with removal of impinging osteophytes and loose bodies being treated effectively with arthroscopy.

# Osteochondral Lesions of the Talus - OLT



 Osteochondral lesions of the talus as such were first described in 1856 Monro (36) but Konnig (37) coined the term 'osteochondritis' when he found similar pathology elsewhere in the body and thought the aetiology was osteonecrosis. Kappis (38) in 1922 first applied the term osteochondritis to the ankle joint.

#### Meniscoid band



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## Synovial Disease



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#### Osteochondral Defects



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#### Comparative studies

 Randomised 42 ankles Chrisman-Snook vs modified Brostrom procedures. Brostrom compared favourably, < complications.

Hennrikus et al AmJSM 1996

 Good results: Brostrom in revision ligament reconstruction 15 ankles.

Kuhn et al FAI 2006



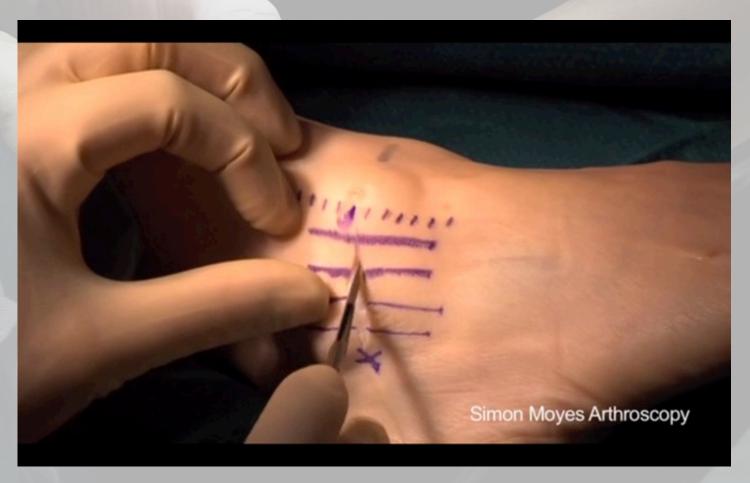
Anatomic repair superior to tenodesis: < reops,</li>
 <instability, < stiffness. 106 repairs vs 110 tenodeses</li>

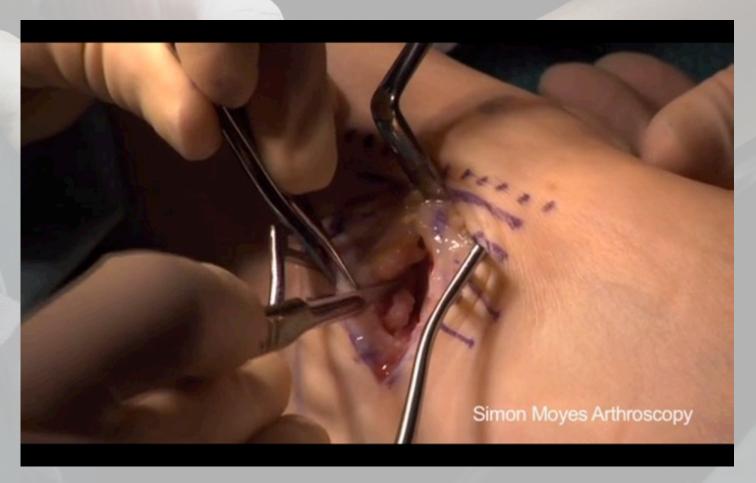
Krips et al Knee Surg Sports tr Arth 2000

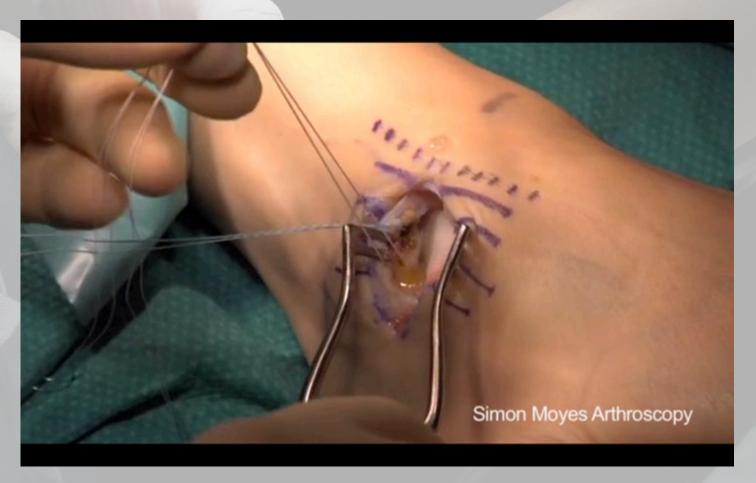
### Chronic Instability



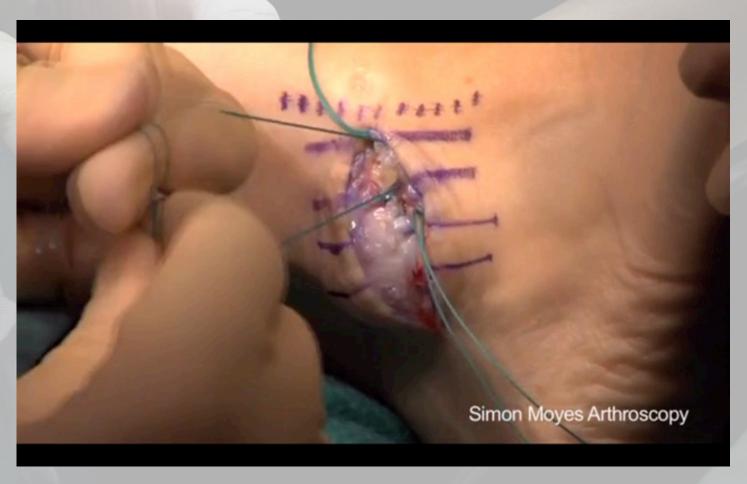
- Brostrom-Gould repair. anatomical, 'pants over vest' repair lateral ligaments less morbidity, stiffness.
- Reconstruction: useful for revision surgery, generalised laxity.













# Thank You