

# Rowing Injuries

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# Overview

- Nature of the sport
- Injuries:
  - Rib stress fractures
  - Forearm tenosynovitis/intersection syndrome
  - Low back pain
  - Infected callosities



# Nature of sport

- Strenuous endurance sport
- Divisions
  - a) Sweep oar - one oar per athlete
    - Bow side - oar off to the left
    - Stroke side - oar off to the right
  - NB - The stroke is usually the most technically proficient athlete, and sets the rhythm for the rest of the crew
  - b) Sculling - two oars per athlete
    - Standard weight and lightweight categories

# Types of training - on water

- Aerobic(U2) training  
Steady state, up to 260km/week
- Anaerobic (interval) training  
Speedwork - repetitions from 250 - 1000 metres
- Bungee (resistance) training  
Trailing a bungee - creates drag
- Starts to optimise acceleration

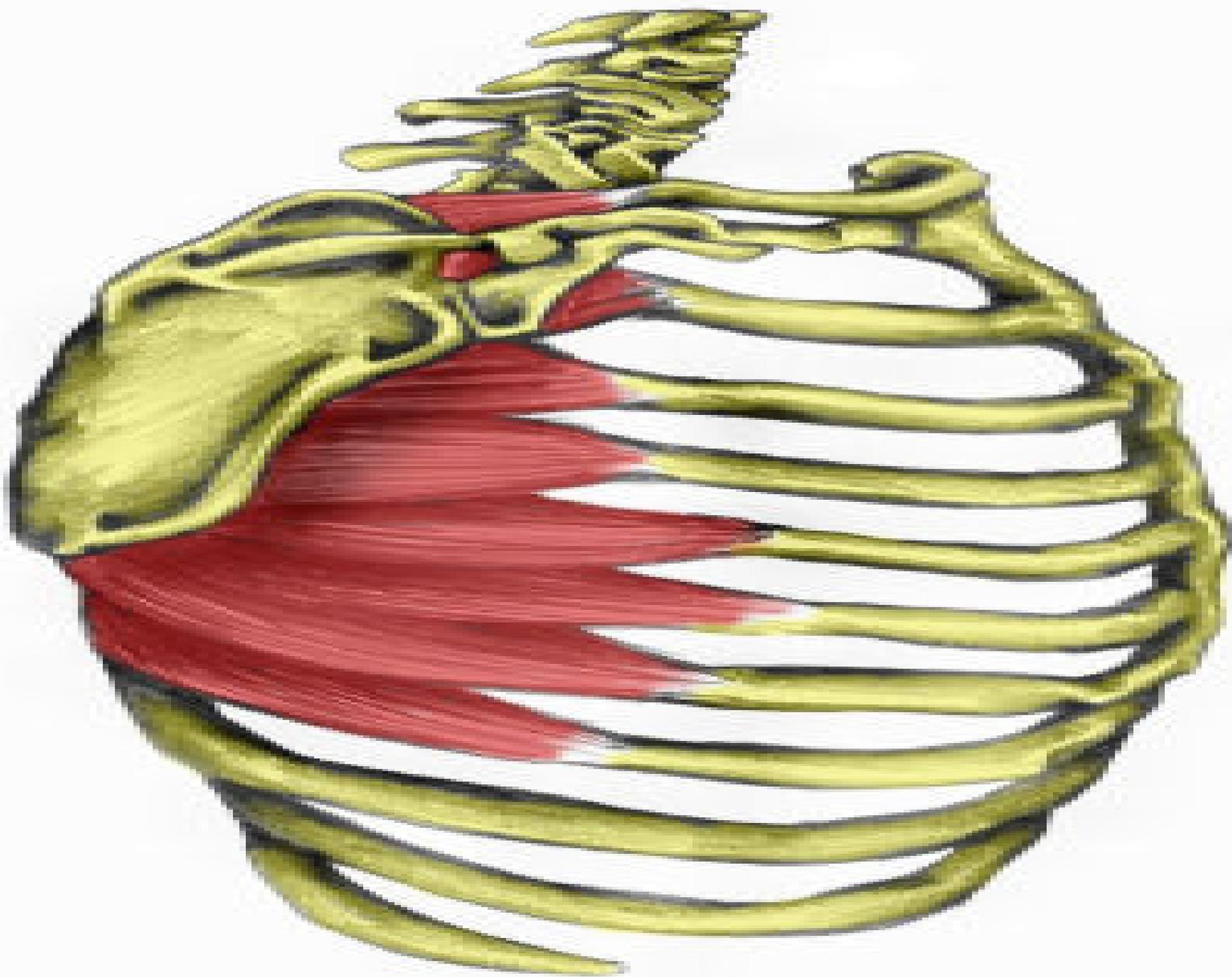


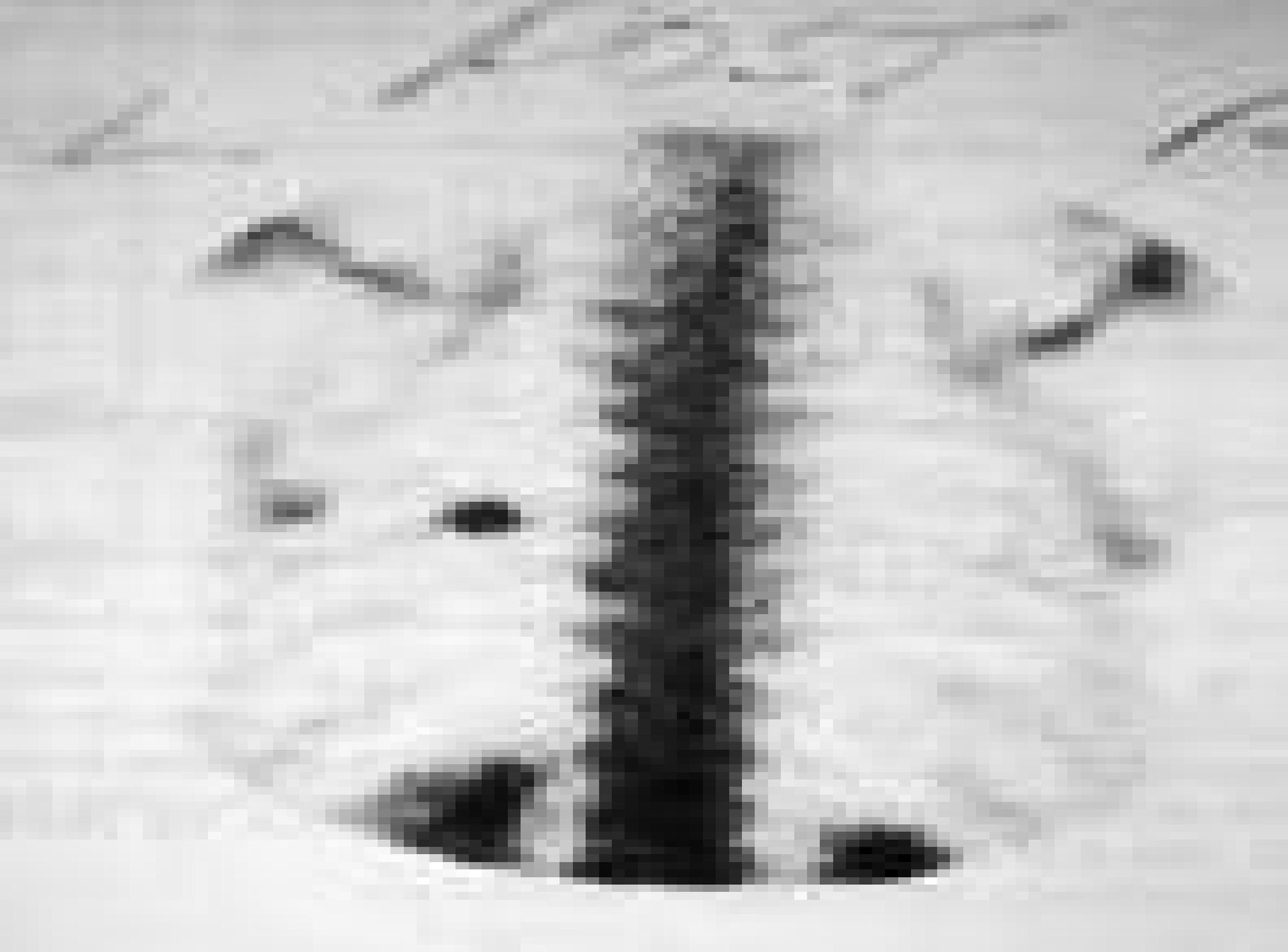
# Types of training - off water

- Ergometer ( rowing machine)
- Weight training
- Core stability training
- Cross training - cycling  
- running

# Rib Stress fractures

- Cause - Overload of rib, usually at insertion of serratus anterior in mid axillary line
- Symptoms - Focal rib pain
  - Present with training ,at catch phase
  - Also with ADL e.g lifting, carrying, rolling over in bed
- Signs - Focal rib tenderness
  - Pain with deep inspiration
  - Pain with resisted adduction, flexion, extension of the shoulder





# Rib Stress fractures - continued

- Investigations - Bone scan positive within 48 hours
- Management - Time out of boat until pain free with ADL (usually 2-3 weeks)

Cross training - Leg weights

- Cycling , running

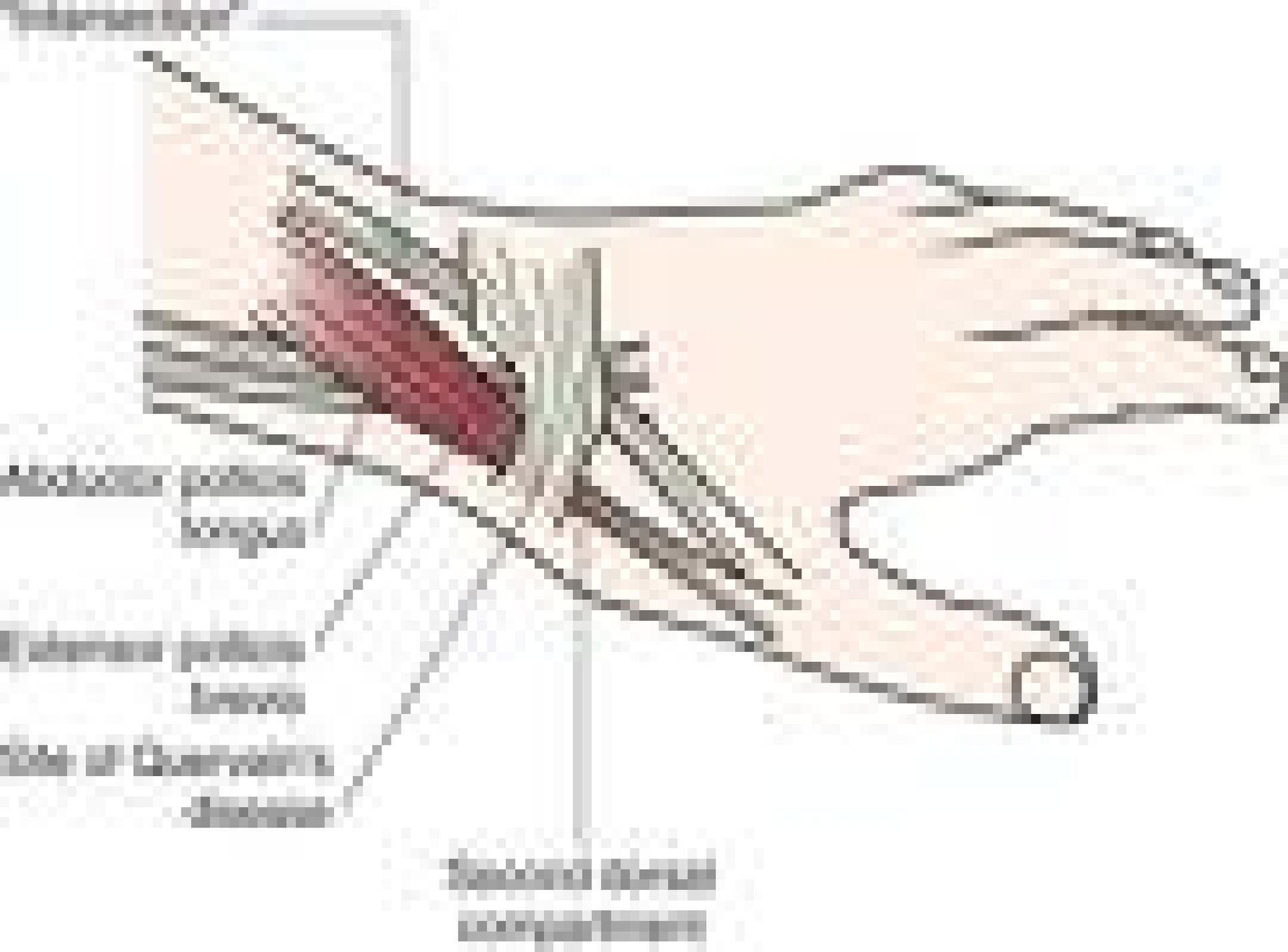
Assessment/modification of technique

Progressive resumption of training

Rarely, bisphosphonates

# Forearm tenosynovitis/intersection syndrome

- Cause - Faulty feathering of the oar, with irritation where the APL/EPB tendons cross extensor tendons
- Symptoms - Pain, grating in crossover tendon region (5-8 cm proximal to wrist)  
Associated swelling
- Signs - Tender swelling in crossover tendon region. Crepitus on wrist flexion/extension



# Forearm tenosynovitis - continued

- Investigations - Ultrasound shows fluid in sheaths surrounding APL/EPB tendons
- Management - Ultrasound guided cortisone injection, if condition presents early [remember notification of use form to DFSNZ]

Time out of boat (1-2 weeks)

Cross training - Leg weights

- Cycling, running

Assessment/modification of technique

Rarely, surgical decompression (no recurrence after this)



# Low back pain

- Cause
  - High axial loading
  - Premature disc desiccation and protrusion
  - In adolescents, occasional pars injury
- Symptoms
  - Pain, in back usually flexion related.
  - Occasionally, sciatica
- Signs
  - Loss of lumbar lordosis
  - Tender L4 to sacrum
  - Restricted straight leg raise
  - Pain at end range flexion
  - Occasionally, markers of radiculopathy



**The black disc in this MRI indicates that the disc has a low water content. This is commonly seen in DDD patients.**

# Low back pain - Continued

- Investigations
  - XRays - AP, lateral
  - MRI scan in selected cases
  - Consider bone scan with SPECT in adolescent with extension related back pain
- Management
  - Reduce spinal loading - out of boat for 1-2 weeks
  - Analgesics/NSAID
  - Core stability exercises
  - Maintain lumbar lordosis in boat
  - If sciatica present, consider epidural steroid injection



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# Callosities

- Cause
  - Repeated shear force across skin
  - Fissuring and secondary infection
- Symptoms
  - Pain, redness around blisters
  - May have purulent discharge
- Signs
  - Callosities, blisters with erythema
  - Occasionally, purulent discharge
  - Rarely, swollen lymph nodes

# Callosities - continued

- Investigations
  - Usually none required
  - If infections frequent, check CBC, blood glucose, immunoglobulins
- Management
  - Antibiotics - Flucloxacillin (or erythromycin if allergic to penicillin)
  - Avoid probenecid
  - Trimming of callosities once infection cleared





# Philosophy

- 1 - Minimise time out of the boat
- 2 - Provide appropriate cross training options
- 3 - Involve the injured rower in training drills they can safely perform