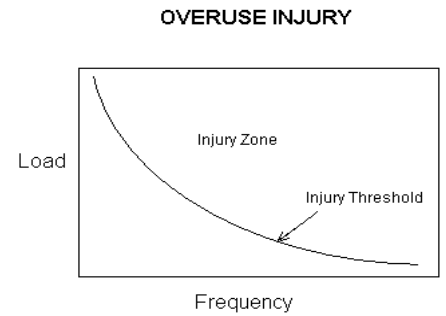


Surfboat Rowing Injury Prevention

Introduction to overuse injuries

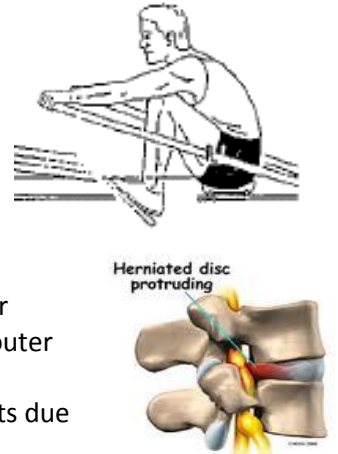
- Overuse injuries occur when the load exceeds the maximum capacity of the tissue (muscle, tendon, ligament).
- Load - the amount of force applied at one particular instant.
...we train muscles by loading them.
- Fatigue decreases the maximum capacity of the tissue to tolerate load, leading to breakdown and injury.



Common Surfboat Overuse Injuries

Lumbar Spine (LS) - Most common injury to rowers....Why?

- Forward flexion (bending forward) is the most vulnerable position of the lumbar spine.
- Catch position - LS is placed in a flexed position and then used as a lever (pictured).
- Poor technique or weak stabilizers increases the amount of forward flexion, which increases the load on the LS structures (joints or discs)
- **LS Disc damage** (bulge, herniation, 'slip') - Don't repair very well. The softer inner contents of the disc push outwards when under load, leading to damage to the outer fibers (pictured).
- **LS Joint/ligament damage** - Damage to the ligaments or capsule around the joints due to relative hypomobility (stiff joints).



- Caused by - Too much flexion at the catch (stiff ankles, tight calves, tight gluts, weak lumbar stabilisers).
- Poor technique - opening the body too early in the drive.
 - Poor technique - slouching at the finish (tight hammy's, weak lumbar stabilisers).
 - Poor standing posture out of the boat due to tight hip flexors.

Management

- Short term (24h) - anti-inflammatory medication, relative rest out of the boat (unload), stretch hip flexors .
- Med to long term - physio assessment to identify source of pain and cause, keep muscles and joints loose, commence stability ('core') exercises.

Thoracic Spine (TS) and Ribs - In surfboat rowing the rotation around the rollock occurs at the TS. This leads to joint compression (outside) or distraction (inside). Rib pain is often due to a bony stress reaction (leading to fracture).

Caused by - Stiff Thoracic spine, overloaded muscles pulling on insertion points on the ribs and/or compression of the thorax under load at the catch.

Management

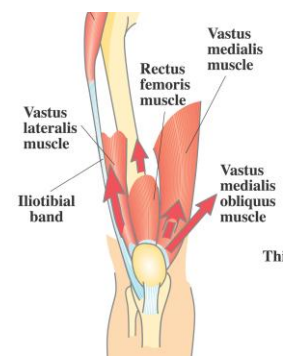
- Short term (24h) - anti-inflammatory medication, relative rest out of the boat (unload).
- Med to long term - physio to improve range of motion and loosen muscles, and a gradual increase in load (over 6-8 weeks) once range has been restored.

Knee - Usually Patello-Femoral (knee-cap), but can also be meniscal (cartilage).

Caused by - tight lateral (outside) quad muscles and weak medial (inside) quad muscles resulting in uneven forces on the patella (pictured), and lateral rotation (outside knee)

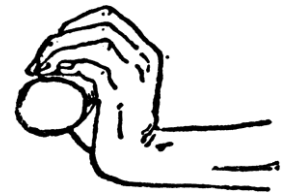
Management

- Short term (24h) - physio to identify source of pain and cause, release the tight lateral structures, tape, ice, relative rest from rowing.
- Med to long term - keep lateral muscles loose (stretches, foam roller), keep medial muscles strong with stability exercises (slow 1 leg ¼ squats, 1 leg balance with knee bent).



Wrist / forearm / elbow - Pain can occur from muscle overload, compartment syndrome or tendonitis.

Caused by - hanging off the oar from the fingers, aggressive feathering with the wrist (pictured), and bringing the arms on too early in the drive phase which all tighten the muscles of the forearm.

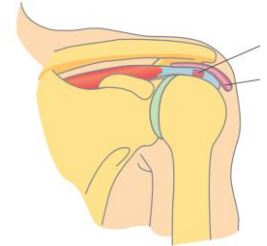


Management

- Short term (24h) - physio to identify source and cause of the pain, tape, ice, stretching, relative rest.
- Med to long term - keep muscles loose with massage and stretches, correct rowing technique.

Shoulder - Pain can occur from tendonitis (in the rotator cuff muscles, pictured) or tight nerves (in the brachial plexus).

Caused by - poor scapula (shoulder blade) position (shrugging), bringing the arms on too early in the drive, general poor posture out of the boat (round shoulders).



Management

- Short term (24h) - physio to identify source of pain and cause, posture tape, ice, relative rest from rowing, nerve glides.
- Med to long term - correct technique, strengthen/ stabilize scapula (push up rotations).

Injury Prevention - The main areas to focus on are:

Hamstring flexibility - Enables a strong catch and finish position. → Hammy stretching in any form.

LS Flexibility and neural tension - Very important to protect the joints and discs, and minimise referred pain (sciatic nerve). → LS stretching and nerve glides (slump).

TS Flexibility - Very important to protect the joints and discs, and minimise referred pain (sciatic nerve). → LS stretching and nerve glides (slump).

Hip flexor length - Minimises extra forces being transferred into the LS both on and off the water (from too much sitting down!) → Kneeling hip flexor stretch with pelvic tilt - the most important area to stretch!

Hip Extensor length - Enables full compression at the catch without loading the back. → Stretch hammy's and gluts.

Shoulder blade position - Avoid shrugging during the drive → Stretch traps and pecs.

Forearm muscle tension - Stretch and/or massage forearm muscles.

For more detailed information about rowing injuries, or a list of more specific injury prevention exercises, email Scott Coleman from Ferry Rd Physio on: scott@ferryrdphysio.com.au