

Facts SWIMMING INJURIES about

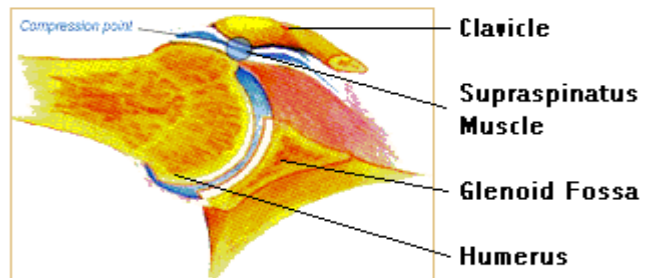
WHY SWIMMERS?

Swimming is a popular sport with a wide spectrum of participants from the young to old, recreational to competitive. Swimming involves many repetitive movements and is performed in a fluid medium that offers greater resistance to movement than air. It is due to these unnatural forces that injuries most often occur.

COMMON INJURIES: [Swimmer's shoulder](#)

This is the most common injury in swimming and is caused chiefly by the strokes themselves. The upper body is used as the main propulsive element in butterfly, freestyle and backstroke, therefore the main shoulder stabilisers, the 'rotator cuff', work extremely hard. Along with this the swimmer needs to have a greater than normal flexibility to have sufficient recovery of the arm overhead.

These two factors cause a repetitive overuse of the rotator cuff tendons, which leads to inflammation. The acute local inflammation can then decrease the space between the top of the shoulder blade and the top of the arm causing impingement of the soft tissues and leading to even further inflammation. This repetitive action of the swimming stroke can cause alteration in shoulder girdle posture, which will also decrease space between the girdle and top of the arm risking impingement to the rotator cuff tendon.



Technical causes:

- ◆ Low elbow during recovery of stroke
- ◆ Insufficient body roll
- ◆ Breathing to only one side
- ◆ Entering arm too wide or too narrow into the water
- ◆ Poor body position in the water

Treatment:

- ◆ Correcting muscle imbalance between internal and external rotators
- ◆ Correction of biomechanical faults in stroke
- ◆ Relative rest – i.e. kicking, swimming within painfree abilities only
- ◆ Icing post exercise for 20 minutes
- ◆ Stretching of tight structures
- ◆ Correction of altered shoulder girdle posture

Knee Pain: "Breaststokers Knee" - this is the most common knee injury and is caused by an overloading of the inner (medial) structures of the knee most prevalent during breaststroke kick. This results in inflammation of the medial collateral ligament (MCL) and creates pain on the inner aspect of the knee.

Technical Causes:

- ◆ Not aligning the knee with the hip during the kick
- ◆ Not kicking feet together in the final kick phase
- ◆ Not cross training sufficiently with other strokes

Treatment:

- ◆ Correction of biomechanical factors
- ◆ Regular icing post exercise
- ◆ Encourage cross training with other strokes

Anterior Knee Pain: once again this is especially noted in breaststrokes. Due to the extremes of rotation placed at the knee the kneecap can move outwards rather than maintaining its 'central' position and can lead to a roughening of the cartilage behind the knee cap.

Technical Causes:

- ◆ Weakness of the inside quadricep (VMO – vastus medialis oblique)
- ◆ Tightness of the outside thigh structures eg Iliotibial band
- ◆ Weakness in the posterior gluteus medius muscle

Treatment:

- ◆ Strengthen VMO and stretch tightened structures
- ◆ Regular icing post exercise
- ◆ Relative rest from breaststroke – concentrating on other strokes/upper body.

Back Pain: most problems are minor and are most commonly associated with the hyperextension produced by butterfly and the 'undulating' motion in competitive breaststrokes. Increased kicking drills using a kick-board may also cause back pain.

Treatment:

- ◆ Abdominal strengthening
- ◆ Stretch hamstrings and improve back flexibility
- ◆ Assess technique – timing problems often a factor in butterfly

Other possible causes of back pain:

- ◆ Spondylolysis – stress fracture of the pars intervertebralis in vertebrae
- ◆ Spondylolisthesis – a slippage of one vertebrae on another due to the above
- ◆ Scheurmanns kyphosis (in adolescents)

Ankle/Foot Pain: most commonly this is associated with a tendinitis of the extensor tendons at the top of the foot and/or front of the ankle. These tendons are tightly held down at the front of the ankle by a retinaculum and it is due to the repetitive nature of kicking that these tendons become irritated under this sheath.

Treatment:

- ◆ Reduce amount of kicking initially then gradually resume
- ◆ Stretch extensors prior to training/racing

Elbow Pain: generally caused by the strokes of butterfly and breaststroke. The most effective and efficient pull is where the elbow is initially higher than the hand and thus due to the high rotation forces at the elbow, can lead to inflammation of the common extensor origin ("Tennis elbow").

Treatment:

- ◆ Improve strength of forearm extensors
- ◆ Improve shoulder/elbow flexibility
- ◆ Increase use of freestyle stroking initially and gradually return to previous strokes