Surfers Shoulder

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Abstract

Having a partner whom is an avid surfer and spending a large part of my life at the beach, surfing is a regular topic of conversation in our house. My interest in this area has further grown in learning through the BASI comprehensive course and in studying the muscular and skeletal systems and how these can be focused on to achieve better performance in the sport you love.

Interestingly with the clients that I have been working with throughout the course I have seen a number of surfers all presenting with similar goals/ complaints and have thoroughly enjoyed seeing them find real value in Pilates, not only strengthening their body but in the mental challenge it presents.

As an avid lover of Pilates, I have long tried to educate my partner in how Pilates could relive him of a multitude of common ailments surfers complain of and strengthen him in areas that would improve his skills as a surfer, thus increasing his enjoyment of the sport and ensuring he can sustain this love as he gets older.

In this paper I will be reviewing common shoulder injuries of surfers and will look at one particular case study; the rehabilitation and correct muscle recruitment in strengthening the shoulder. I feel this will be the most beneficial in the area I work and can also be easily transferable for older clients with osteoarthritis of the shoulder etc.
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Shoulder anatomy

The Shoulder joint is known as the glenohumeral joint, it is a ball and socket joint with a huge range of motion. The size of the ball is small compared to the size of the socket and it is the rotator cuff muscles that are responsible for keeping the ball in the socket and ensuring a full range of motion. (The Surfer’s shoulder, Dr. Perreira, University of Hawaii 2012)

The rotator cuff is made up of several muscles the supraspinatus, infraspinatus, teres minor and subscapularis.
Common shoulder issues with Surfers

Surfers tend to have well developed shoulder muscles due to the amount of time spent paddling, however these tend to be only the larger muscle groups of the pec major, pec minor, deltoids, upper trapezius, levator scapulae, latissimus dorsi and serratus anterior. These muscles tend to apply an upward force on the arm bone whereas the smaller muscles such as the rotator cuff act to stabilize and create downward force on the ball of the arm bone.
(www.worldsurf.com.au/2015/04/23/shoulder-problems-in-surfers) When the ball of the arm bone slides upwards and there is contact with the rotator cuff muscle and the roof of the shoulder (acromion) impingement can occur. There is normally enough room in the shoulder cavity for this to happen without pain, however with repeated padding motion the small sac of tissue (bursa) that sits on top of the rotator cuff muscle to facilitate this gliding of muscles, becomes irritated and swells, therefore decreasing the space in the shoulder cavity and creating pain. A break from surfing (or repetitive overhead motion such as paddling) and stretching and strengthening the rotator cuff muscles are usually advised, until mobility of the shoulder without pain is restored.
(www.bodyorganics.com/pilatesforsurfers)

Impingement is a common complaint of surfers, as is rotator cuff tear and shoulder dislocation. All relate to over working the larger shoulder muscles and lack of stretching and strengthening the smaller rotator cuff muscles. The rotator cuff are made up of a small group of muscles that connect the scapulae to the proximal homers and are inherently responsible for shoulder stability and ensure correct mechanics. They are the *supraspinatus, infraspinatus, teres minor* and *subscapularis.*
(www.phisioworks.com.au)

The scapula stabilizes the shoulder from the backside, and it is one of the main bones of the shoulder joint. When the scapula does not move well, the rotator cuff muscles are strained, which can lead to shoulder injury. (The Surfer’s shoulder, DR. Perreira, University of Hawaii. 2012)

Surfers also present with complaints of lower or mid to upper back pain, possibly due to long periods spent in back extension while lying on the board and tight hip flexors. Strengthening the core and working on trunk stabilization can improve back pain by engaging the abdominals when lying prone on the board. Strengthening the back extensors and the abdominals should be a priority for this clientele. As is incorporating hip work to increase mobility and strength in this area, counteracting possible imbalances.

Surfing can create other imbalances in the body which are too extensive to go into in this paper, but include imbalanced loading through the hips/knees and ankles due to the hip rotating towards the back foot, tight hip flexors, and rounded shoulders and winging of the shoulder blades if correct muscle engagement is not there.
Case study:

Michael 42 years had a shoulder reconstruction in 2006. Michael has hyper flexibility of his joints and had had many dislocations prior to surgery. The first surgery he had was to repair a torn rotator cuff muscle due to dislocation and with the intent of remediating how easily his shoulder would dislocate. However further surgery was needed as with so many dislocations the acromion had worn away and a plate was inserted to create a more stable ball and socket joint. Recovery involved 9 months off surfing and many hours of physiotherapy and eventually swimming to rebuild muscle strength and shoulder mobility.

Now Michael still presents with shoulder pain after hours of paddling, though usually in the other shoulder, which has been dislocated a number of times only to put it back in place himself. Upon initial assessment I looked for imbalances in the lower body (back, hips, knees. etc.) that may be compensations of other muscles or incorrect recruitment of and also in consideration that anything happening in the lower body is mirrored in the upper body and vice versa. (www.worldsurf.com.au/2015/04/23/ shoulder-problems-in-surfers.)

His goals are to strengthen core muscles to improve balance on the board and improve lower back pain, improve thoracic mobility to reduce back pain after surfing, improve awareness of correct alignment and technique when surfing to prevent injury.

In choosing a conditioning program for Michael I chose exercises from the Pilates repertoire that mimicked those given by the physiotherapist and those that steered away from shoulder adduction that wasn’t in external rotation (adduction in internal rotation cases pain) and loaded forward flexion past shoulder height. (E.g. prone 2 on the Cadillac)
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Contraindications

In planning a program for a surfer with shoulder injury or recurring dislocations I would be cautious in staying away from any arm work that involves the arms coming above the head or behind the shoulder line such as Prone 2 on the Cadillac, shoulder stretch on the Cadillac, sitting back on the Cadillac or kneeling arms on the reformer.

Conclusion

Michael has been enjoying reformer Pilates for the past six months and it has successfully increased his shoulder mobility and strength, meaning much less pain. His core strength has improved as has his balance and technique on the board and back pain has reduced. Pilates has improved his performance in other sports such as running, swimming and outdoor challenges as he has greater awareness of his core and how to hold correct technique to move better and prevent injury.
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