Swimmer's Shoulder

Resolving Swimming Injuries with Active Release Techniques® (ART®)

Swimming is a unique sport as it relies primarily on the muscles of the arm and shoulder to propel the body forward in the water. In many cases, the high muscular demand placed on the shoulder can lead to strain of the muscles and their associated tendons. The resulting overload leads to a common pain pattern to develop in the shoulder, characterized by an ache or pinch in the shoulder most prominent with the overhead reach and early pull portions of the swimming stroke. Commonly referred to as "Swimmer's Shoulder", this condition will inevitably progress into a significant pain that can affect performance and eventually prevent further training and competition. Making matters worse, Swimmer's Shoulder often becomes recurrent in nature, and is slow to respond to traditional types of treatment.

Now for the good news, a new treatment technique known as **Active Release Techniques® (ART®)** is proving to be a very effective method to treat Swimmer's Shoulder and help get swimmers and triathletes back to training and racing quickly and effectively. But before we talk about why ART® works so effectively you first need to understand how Swimmer's Shoulder develops in the first place.

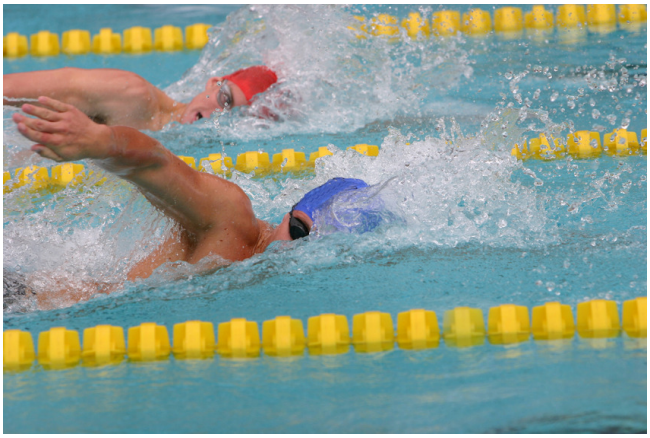
What is Swimmer's Shoulder and how does it occur?

When talking about sports injuries it is important to realize that there are 2 major types of injures – *acute* and *repetitive.* Acute injuries occur following a single event, such as a fall or hard collision. Fortunately, these types of injuries are rare in swimming. Repetitive injuries, like the name implies, occur slowly over time as a result of performing the same motion over and over again. Swimming injuries are repetitive injuries, and as such, require a different treatment approach. To best understand how problems develop, let's first look at the normal anatomy of the shoulder complex.

The shoulder joint consists of the round head of the upper arm connected to the flat surface of the shoulder blade. This "round-on-flat" relationship is different from most other joints in the body as it provides less support and protection from the bones and surrounding ligaments. This relationship makes the shoulder an incredibly mobile joint. For example, compared to other joints - such as the ankle, knee, or elbow - which move only forward and backward, the shape of the shoulder joint allows us to reach up overhead, back behind the body, across the chest, and into internal and external rotation.

In addition to the mobility of the shoulder joint itself, it is important to understand that the shoulder blade also contributes to the mobility of the shoulder region. This is because the shoulder blade is a floating bone and is not tightly connected to the ribcage through joints or ligaments. As a result, when the arm moves, the shoulder blade will also slide and rotate on the ribcage, adding to the movement capacity of the shoulder region.

For the swimmer, this wide range of motion available at the shoulder allows you to effectively

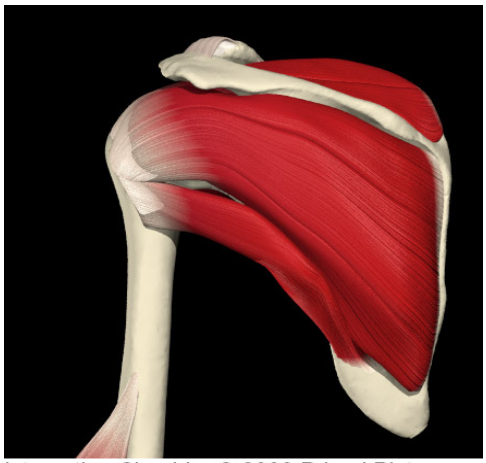


execute the reach, catch, pull, and recovery phases of the swimming stroke. Unfortunately, this shoulder mobility comes at a cost as the lack of bony support fails to provide the same protection and stability that is found at other joints. As a result, proper shoulder motion requires a complex set of muscles to help control and stabilize the region. The primary muscles that provide control and protection at the shoulder joint are the "Rotator Cuff" muscles, while the shoulder blade relies on a group of muscles referred to as the "Scapular Stabilizers". The Rotator Cuff – a small group of muscles that surround the shoulder joint - plays a critical role in stabilizing the shoulder joint by holding the arm tightly against the shoulder blade. With the swimming stroke, as the athlete reaches up overhead and then pulls the arm back through the water, these muscles have to contract to prevent the round surface of the upper arm from sliding excessively within the shoulder joint. At the same time, the Scapular Stabilizers that connect the shoulder blade to the ribcage must act to hold the shoulder blade tight against the body as well as slide and rotate the shoulder blade as the arm moves.

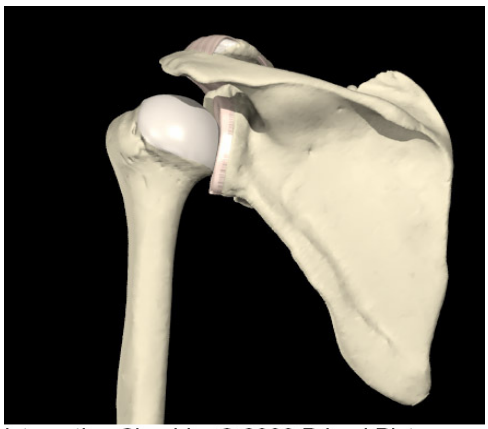
With the majority of daily activities the Rotator Cuff and Scapular Stabilizers are able to effectively control and stabilize the shoulder region. With swimming, however, there is a tremendous amount of strain placed on the shoulder complex. For example, the average swimmer will take 10-15 strokes when traveling one length of a 25 meter pool. Depending on whether the athlete is primarily a swimmer or triathlete, a training session will often consist of anywhere from 2000 to 10,000 meters. This can result in anywhere from 800 to 4000 strokes for a single training session. This figure is magnified even further over the weeks and months of training such that the repetitive demand of swimming will place a tremendous amount of demand on the Scapular Stabilizers and Rotator Cuff muscles.

The Injury Process

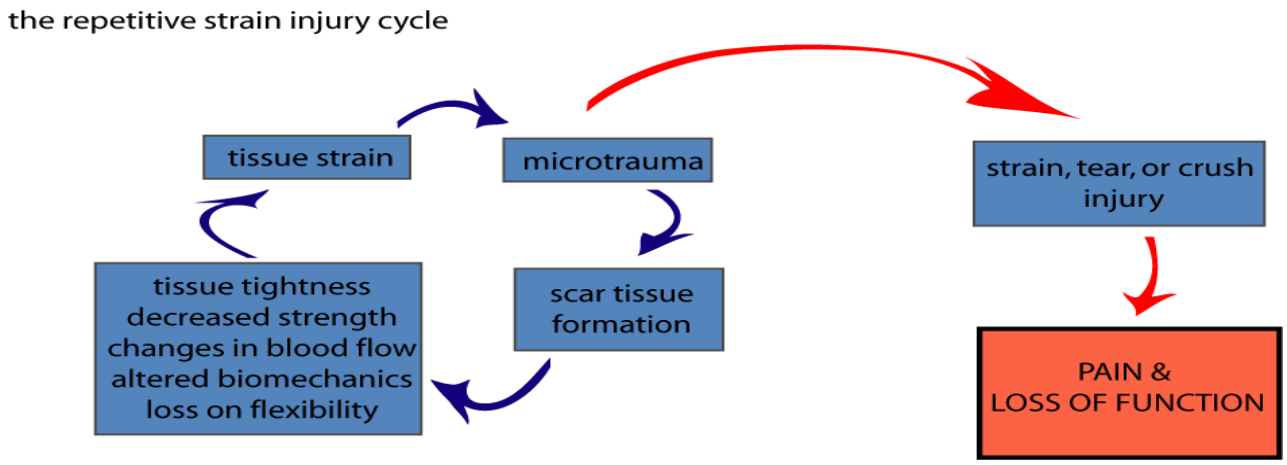
From the preceding information it should be clear that swimming is a highly repetitive activity and is associated with a tremendous amount of muscular demand from the shoulder muscles. Over time these repetitive forces can accumulate in the shoulder and lead to strain and irritation of the Rotator Cuff and Scapular Stabilizer muscles. As time goes on and the athlete continues to train, the strain will develop into *micro-trauma*. Initially, this micro-trauma is not painful but may be perceived as a mild ache or tightness in the muscles or shoulder joint. Although only small, this damage still needs to be repaired. The body responds to this tissue injury in a very predictable way – by laying down new tissue to repair the damaged area. With micro-trauma, the body repairs the strained tissue by laying down small amounts of scar tissue in and around the injured area. The scar tissue itself is not a problem – in fact it is a normal and necessary part of healing. The problem occurs when the body is subjected to the same repetitive demand of swimming over the course of a season. This in turn causes the same muscles to become strained and subsequently repaired over and over again. Eventually this scar tissue will build-up and accumulate into what are called ***adhesions***. As these adhesions form they start to affect the normal health and function of the muscles. In fact, they will often lead to **pain, tightness, stiffness, restricted joint motion,** and **diminished blood flow.**



Interactive Shoulder © 2000 Primal Pictures Ltd.



Interactive Shoulder © 2000 Primal Pictures Ltd.



As these scar tissue adhesions accumulate, it places more and more strain on the muscles of the Rotator Cuff and shoulder blade as they must now stretch and contract against these adhesions with each swimming stroke. This places even further strain on the shoulder region, which in turn leads to more micro-trauma. Essentially a repetitive injury cycle is set-up causing continued adhesion formation and progressive movement dysfunction. When the injury cycle reaches this point it is not uncommon for the muscles to give way and for a more severe pain to occur. Specifically, the ability of the Rotator Cuff muscles to stabilize the shoulder joint, or the strength and coordination of the Scapular Stabilizers becomes compromised. As this happens the round surface of the upper arm will often slide excessively within the joint. With movement of the arm, particularly when reaching overhead or with the catch and early pull phases of the swimming stroke, the rotator cuff muscles will become pinched against the top of the shoulder joint. This is referred to as "shoulder impingement". It is this impingement that is largely responsible for many of the symptoms associated with Swimmers Shoulder; but, as you can see, the underlying cause of the impingement has been slowly building over time and effective resolution of the injury requires correcting the Rotator Cuff and Scapular Stabilizer muscle dysfunction.

How Is Swimmer's Shoulder Best Treated?

The Traditional Approach

In an attempt to relieve Swimmer's Shoulder, a variety of treatment methods are used, either on their own, or in combination with other methods. Some of the more common approaches include anti-inflammatory medications, rest, ice, ultrasound (US), muscle stimulation (E-Stim), steroid injections, stretching, exercise, and when all else fails, surgery. Unfortunately, most of these traditional techniques generally require a long period of time before they provide any significant relief, and in many cases provide only temporary relief from symptoms instead of fixing the underlying cause of the problem. This can be a huge problem as athletes often want and need to get back to training and competition as soon as possible.

The main reason that these approaches are often ineffective is that they fail to address the underlying scar tissue adhesions that develop within the Rotator Cuff and shoulder blade muscles. It is these adhesions that are binding the tissues together, restricting normal movement, compromising the stability of the shoulder joint, and interfering with the normal flexibility and contraction of the muscles in the shoulder area.

Passive approaches such as medications, rest, ice, and steroid injections all focus on symptomatic relief and do nothing to address the muscle restrictions or adhesions. More active approaches such as stretching and exercises are often needed for full rehabilitation of the condition and to restore full strength and function of the muscles, however, they themselves do not treat the underlying adhesions. In fact, without first addressing the scar tissue adhesions, stretches and exercises are often less effective and much slower to produce relief or recovery from Swimmer's Shoulder.

Our Approach: ART® – A Better Solution

ART® stands for Active Release Techniques®. It is a new and highly successful hands-on treatment method to address problems in the soft tissues of the body, including the muscles, ligaments, fascia, and nerves. ART® treatment is highly successful in dealing with Swimmers Shoulder because it is specifically designed to locate and treat scar tissue adhesions that accumulate in the muscles and surrounding soft tissues. By locating and treating the soft-tissue adhesions with ART®, it allows the practitioner to, 1) break-up restrictive adhesions, 2) reinstate normal tissue flexibility and movement, and 3) more completely restore flexibility, balance, and stability to the shoulder region

You can think of an ART® treatment as a type of active massage. The practitioner will first shorten the muscle or tendon, and then apply a very specific pressure with their hands as you actively stretch and lengthen the tissues. As the tissue lengthens the practitioner is able to assess the texture and tension of the muscle to determine if the tissue is healthy or contains scar tissue that needs further treatment. When scar tissue adhesions are felt, the amount and direction of tension can be modified to treat the problematic area. In this sense, each treatment is also an assessment of the health of the area as we are able to feel specifically where the problem is occurring.

An additional benefit of ART® is it allows us to further assess and correct problems not only at the shoulder itself, but also in other areas of the "kinetic chain" such as the elbow, hand, and ribcage, which are often contributing factors to the problem. This ensures that all the soft tissues that have become dysfunctional and are contributing to the specific injury are addressed, even if they have not yet all developed pain.

One of the best things about ART® is how fast it can get results. In our experience, the majority of athletes with Swimmers Shoulder respond very well to ART® treatments, especially when combined with home stretching and strengthening exercises. Although each case is unique and there are several factors that will determine the length of time required to fully resolve each condition, we usually find a significant improvement can be gained in just 5-8 treatments. These results are the main reason that many elite athletes and professional sports teams have ART® practitioners on staff to keep their athletes healthy and performing their best, and why ART® is a integral part of the Ironman triathlon series.

To book an appointment to see if ART® will be able to help with your shoulder problem, simply call our office at **(902) 861-2511**. For more information on ART® or specific injuries, please send us an email at **frchiropractic@eastlink.ca**

FALL RIVER CHIROPRACTIC
RELIEF | RECOVERY | REHABILITATION | RESULTS
www.fallriverchiropractic.ca

Fall River Chiropractic
3290-4Hwy. 2
Fall River, NS
B2T 1J5
(902) 861-2511