Self-Diagnosis for Climbers

Part 3 – The Shoulder

Hopefully we're getting familiar with self-diagnosis. We understand that it is unlikely that we are ever going to be correct but that by being organised we can clearly identify the problem and make suitable changes which will eventually result in an improvement.
Having a system is important to ensure that crucial details are not missed and that blind alleys are not gone down. It is too easy to 'match the ground to map and not the map to the ground' (ML advice from a long time ago).

What follows is an attempt to remove the haphazard way we determine what injury we have acquired which is normally by searching on the internet for a term such as 'painful shoulder and picking the best match. By being systematic and organised we can improve our knowledge of our anatomy, physiology, the healing process and exercise to maximise our recovery. There are lots of terms such as 'probably' and 'might be' as only a full clinical picture will give the right information and no real attempt has been made to suggest rehabilitation options except where rest is probably the best course.
(It is not intended to replace the expert knowledge of a Physiotherapist – if in doubt, find a good one).

So you have pain in your shoulder. What now?
Go see a physiotherapist. I haven't yet advocated this approach but the shoulder is an unbelievable complex joint with things made even more complicated by the neck, thoracic spine, lumbar spine and even the hips.
If you haven't got time then read on….

Your shoulder is not a deep ball and socket joint like the hip so does not possess much *passive stability* i.e. bones and ligaments. The joint is made deeper by a 'labrum'; a sort of scoop of tissue which provides a bit more stability – but not much and it is easily damaged. The shoulder depends on *active stability* which is the activation of the muscles and their careful coordination to ensure perfect synchronicity of the bones. Anything which disrupts this motion is often called dysrhythmia (or shoulder dysfunction).
The shoulder has a small amount of negative pressure within the joint and damage to the surrounding joint capsule as when dislocated or sub-luxed can disrupt this pressure permanently thus creating a long term shoulder instability.

Mechanism of injury (MOI)

Have you 'pulled', 'wrenched' or otherwise caused your shoulder to be put under stress at the ends of its range? Then you have probably pulled a ligament. This will heal with time but not quickly and the pain will result in secondary movement problems and you may develop scar tissue. The ligaments of the shoulder are not easy to access so some gentle stretching and some ice should be considered.
Did the pain develop over time with no specific cause? It might be that you are developing some movement dysfunction, possibly from pulling too hard. Ensure you work those back muscles.
Was there an impact that maybe you thought was a bruise but you haven't shook it off yet? Again, consider shoulder dysfunction from pain induced neural inhibition but also check your range of movement – is it full and pain free? If not (and you're middle age) then you might be developing frozen shoulder. If so – unlucky, this could last a couple of years and is painful.

Fig 1 Supraspinatus integrity test

When does it hurt?

Does it hurt when you try to lift your shoulder above your head? This pain might be particularly noticeable at night. The most likely culprit is an impingement of the supraspinatus tendon. This however is the symptom; the likely cause is a dysfunction of the joint due to some sort of trauma or imbalance due to training.

Is it painful when dead hanging but not throwing or climbing? This points to your ligaments again. When you are climbing with your feet on normally you will have body tension i.e. all your muscles contracting will be contributing to the stability of your shoulder, same when throwing. Turn those muscles off and the stress is put on the ligaments.

Is it painful when throwing something but not dead hanging. Your muscles need to be very carefully coordinated for a throw and any disruption here will highlight the problem – normally a damaged muscle or tendon. Rest and ice.

Eliminate anything problematic

Cardiac pain can cause pain in the left shoulder – does the pain increase with exercise?
Breast pain can refer into the armpit and shoulder blade – is your pain cyclical? If not it might be worth getting it checked out.
Shoulder bursitis (a bursa is a protective, fluid filled sac) can be a primary cause resulting in pain possibly referring down the arm. It often presents or is secondary to shoulder impingement but needs very different management so differentiating is important.
Have you experienced headaches, dizzy spells or unexplained nausea recently? The nerves in your neck that don't go down your arm go around your head. Cervical spine instability can cause pain at any level and problems can be wide ranging – it tends to be more common in younger women (thin necks) but often overlooked in others.
Do you have associated pain down the arm or armpit or even in the upper back

Fig 2 Neural tension test. Positive if feel pain, pins and needles or tingling

but with no specific pattern possibly with cold hands and/or weakness? This might be Thoracic Outlet Syndrome – pressure onto the nerves and arteries in your shoulder from an unexpected cause: tight muscles, lifted ribs or swelling.

Pain

If you have a severe and intense, sharp pain then you need to consider damaged tissues. Pain on the top of the shoulder might be indicative of a labral tear – particularly if it is more painful when throwing.

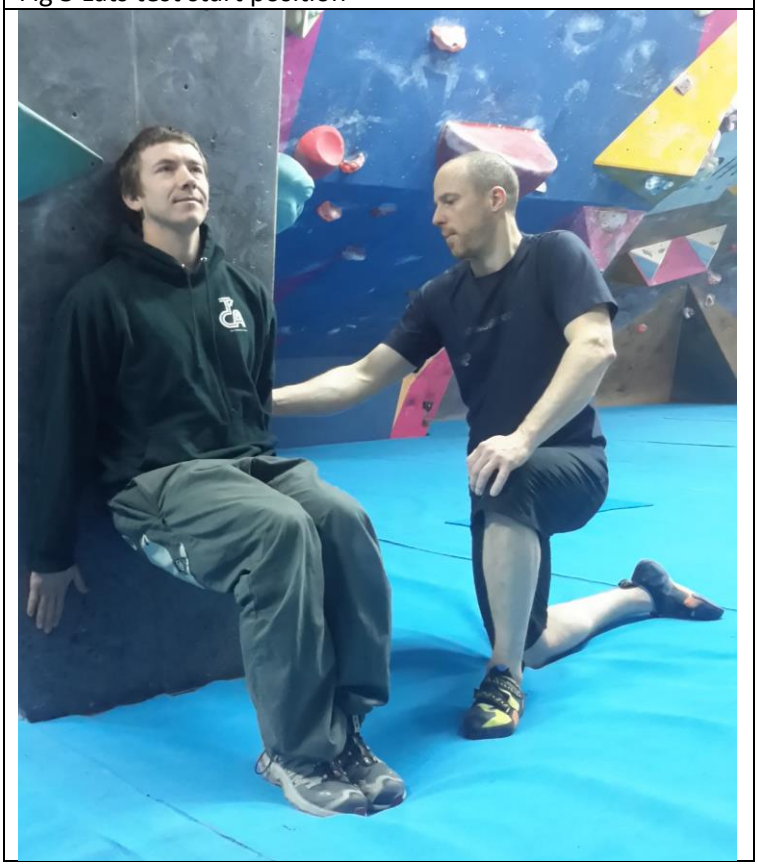
Also a severe pain on the top of the shoulder might be a sub-acromial spur – discussed at length two issues ago so won't be expanded upon here. This might also be bursitis or a damaged AC joint (acromioclavicular) from an impact – often fairly minor.

Pain on the back of the shoulder could be a rotator cuff tear (a collection of tendons providing stability and strength) particularly if this is worse when lifting the arm above the head.

Is the pain in your armpit, especially when climbing? If so you might have pulled your latissimus dorsi muscle – not one I see often but very painful and often mistook as an impingement by non-climbing physios.

Does your shoulder click excessively (when compared with the other) or clunk? Have you impacted it in the past? It might be that you have a chronic dislocation and unstable shoulder. You need to strengthen your stabilising muscles.

Fig 3 Lats test start position



Simple tests

These tests are useful for finding out if you have any on-going issues which could be contributing to your shoulder problem. Even if you don't have a shoulder problem try the tests.

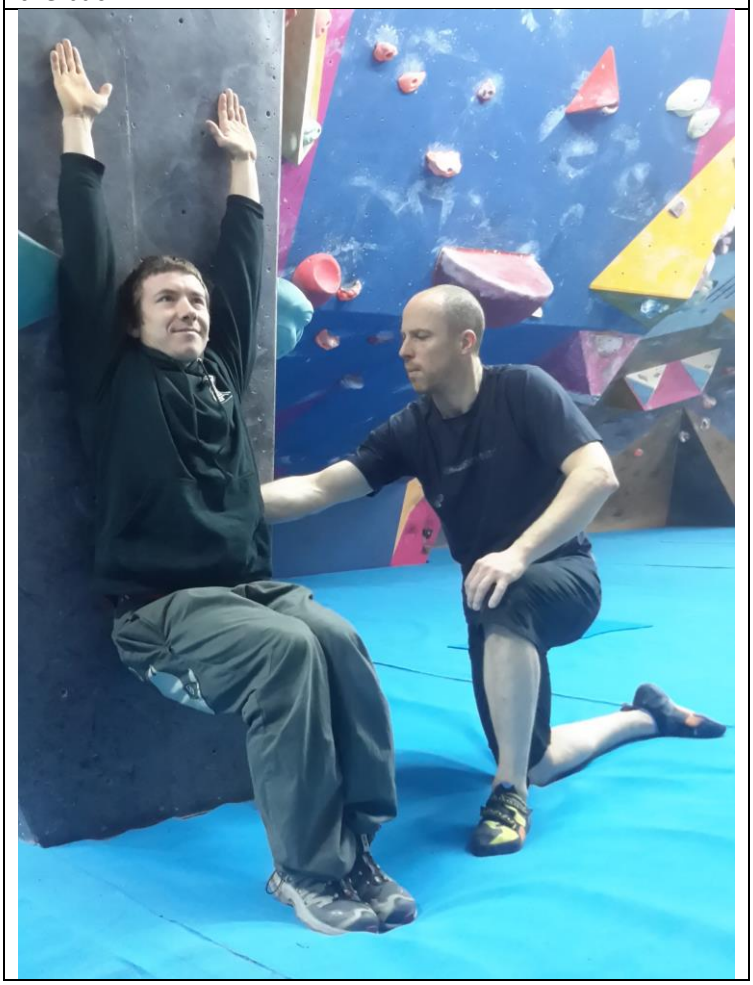
- Empty Can Test. This tests the integrity of a muscle called the supraspinatus which can be damaged by impingement. Many climbers have a chronic pain and weakness here. Hold your arm as though emptying a can of drink in-front of you. Get someone to push down on your wrist while you resist. Positive if painful (Fig 1).
- Neural test. This will highlight any pressure on the nerves in your neck, shoulder and arm. This can be from overtraining i.e. tight muscles or from injury causing inflammation. Put your hand upside down against a wall with a straight arm. Turn away from the arm and tip your head away. If this causes a pain to shoot down your arm then you may have a nerve/neck problem (Fig 2).
- Lats tightness test – put your back against the wall with hips and knees at 90 degrees. There should be a slight gap between the wall and the small of your back – measure this with someone else's hand (Fig 3). Now lift your arms against the wall above you (Fig 3) – does this

gap get bigger? If so this is your latissimus pulling your hips forwards (Fig 4) due to tightness – learn to stretch this out.

Secondary problems

It is especially important to consider nerve pain – the shoulder (and arm) is controlled by and responds with the nerves emanating from the neck. Indeed, many of the muscles that control your shoulder are attached to the neck i.e. the trapezius – moves the head and neck and *depresses* the scapula; and the levator scapulae – moves the head and neck and *lifts* the scapula. Should these become tight they can press on the nerves in the *brachial plexus,* a bundle of nerves in the shoulder (see Thoracic Outlet Syndrome above). Are you experiencing pins and needles, numbness or tingling? If it is just in the hand it might be Carpal Tunnel Syndrome but if it is down the arm then it could be more serious. Do you wake at night with a dead arm? Have you unexplained weakness or muscle atrophy?

Fig 4 Lats test finish position. Arm slips more easily behind the back



A neck assessment is well beyond the scope of these articles but get it checked out and consider recent trauma – you might have recently (and easily) acquired whiplash.

Remember

Shoulder problems in climbers come with the territory as well as the season and they are particularly abused when ice climbing – dead hanging, impact, cold, repetitive movements. Serious problems can cause some climbers very little concern whereas conversely a little problem can be utterly disabling to others. It is one of the key areas that can develop into further problems so do not be tempted to ignore it.

Next issue – the knees.

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