Out of Kilter - Par 4
by Ian King | Fri, Dec 19, 2003

Out of Kilter IV Stop Shoulder Pain Cold! by Ian King Ian King is out to make you healthy and injury-free. So far in this series he's talked about back pain , knee pain , and postural imbalances. Now he's going to focus on the shoulders, because if they aren't healthy, hey, they aren't gonna get big! The Key to Shoulder Health The goal of this article is to reduce the incidence and sev...

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The Key to Shoulder Health

The goal of this article is to reduce the incidence and severity of shoulder pain. Most shoulder pain begins fairly innocuously, so we ignore it and push on. Before we know it, we have a fully blown challenge that's preventing loading and participation in many exercises. Rehabilitating a shoulder can be very complex. It requires a lot of self-discipline and guidance. Best suggestion, follow the preventative measures listed later in this article so you don't have to go there!

As a long term user of high external loading, even with the best care I can assure you that your joints will show black under an MRI! They take a pounding. After ten to twenty years of heavy lifting, that’s a likely outcome, so don’t make it any worse! Be smart and avoid major shoulder issues!

I have a simple yet highly effective perspective on managing the shoulder joint. As per the Paretto principle, a few bits of knowledge can give you a whole lot of results! These simple concepts and methods are refined and tested in the real world. If you want to avoid the epidemic of shoulder surgeries I'm seeing, you'd be wise to master them!

Here's the secret: the ability to control the upper arm relative to the shoulder joint is the key to avoiding shoulder issues. Yes, that’s it. Sounds so simple you want to dismiss it? Don’t. Bite the bullet and hang in there with me. This point is going to prove very powerful for you if you have a desire to avoid future shoulder issues or remove current shoulder issues.

The challenge faced by the shoulder joint is the tradeoff between range and stability. Compared to most joints, the shoulder joint has extensive range of movement. The downside is, this needs to be controlled. Control and stability of this joint are a matter of conditioning and integrating the efforts of all the soft tissue which impacts the joint. There's a need for interaction or synergy of all the soft tissue involved.

Types of Injuries to the Shoulder

Most shoulder injuries in strength training occur chronically, a series of incidences built upon one another. If there's an apparent "traumatic" event in strength training around the shoulder (which is less common), it's simply a case of that final event being the straw that broke the proverbial camel's back.

This is even true with impact injuries from sport. I believe the incidence and severity of these would be significantly reduced if the athlete were to condition his joints and connective tissues optimally.

Levels of Injury

In this article series I've listed my levels of dysfunction. If you haven't reviewed these, go back to a previous article. My message is simple: the sooner you recognize the issue and address it, the less negative impact it'll have on you and your training.

Typically with shoulders we experience a minor discomfort and ignore it. We hope we can "train through it." How do I know this? I've been guilty of this many times!

Sometimes we get away with this head-in-the-sand technique, but most times we don’t.

The shoulder joint, as a joint with so much range, is relatively complex. It relies on two main areas: the relationship of the humeral head (top of the upper arm) and the glenoid cavity (the semi-circular cavity the upper arm is positioned within), along with the coordination of all tissues such as all the muscles that impact on this joint.

Why are there so many shoulder problems out there? Let's look at the anatomy of the over-incidence of shoulder issues. Here are some reasons why shoulder injuries are so common:

1) The belief that it’s okay to prioritize horizontal pushing through higher sequence and volume in the training program. Simply put, you bench more than you row, and that's a no-no!

2) The belief that it’s okay to prioritize vertical pulling (e.g. chin-ups) more than vertical pushing.

3) The belief that vertical pulling such as chin-ups is an appropriate pulling movement to counter horizontal pushing. (It's not!)

4) The complete absence of stretching around the shoulder in training.

5) The assumption that all you need to do to keep the shoulder joint healthy is to lift heavy.

6) The ineffective use of typical shoulder rehab movements such as external rotations. These are often a case of "too little, too late." When most use external rotations, they do them as an afterthought (last) in terms of sequence, and go so heavy they become a compound movement, never an isolated movement for quality and control.

Examples of Dealing with Shoulder Injuries — Level 1

At this level you aren't going to be cognizant of an injury because any inhibition or pain will be below the level or awareness. Use my standing postural assessment; if you fail in any area, assume that you're being affected at this level, and worse, that at some stage in the future you're going to experience shoulder joint pain at a higher level.

Here’s a ten point test to assess whether you're either suffering from low level inhibition in the shoulder joint or are a candidate for more serious shoulder issues:

1. Stand facing a mirror. Are your shoulders even in height? If not, the problem could be a muscle length imbalance in the lats and upper traps.

2. Still looking in the mirror, are your hands facing you (palms in) or facing backwards (palms back)? If back, you could have excessive internal rotation of the upper arm.

3. Are your hands by your side or to the front? If to the front, this could be a muscle imbalance horizontally, with excessive shortening of the anterior or chest muscles.

4. Now stand side-on to the mirror. Can you see any of your upper back? The more you can see, the worse your situation. This could be a muscle imbalance horizontally, with excessive shortening of the anterior muscles.

5. Have someone run his or her hands across your upper back. If he feels his hand catching the medial (inside) vertical borders of your shoulder blades, you're probably still lacking in shoulder blade retraction (squeezing together). Could be a muscle imbalance horizontally and vertically.

6. Lie on the ground on your back with your knees bent and feet flat. Bend your upper and lower arms to 90 degrees as per a shoulder press and lower them to the side. Can you get all of your arms and hands on the floor whilst keeping your back flat on the ground, pain free? If not, there could be trouble here!

7. Lie on the ground on your back with your knees bent and feet flat. Raise your hands up and over the head like a dumbbell pullover, keeping the arms straight and the lower back pressed down on the floor. Can you get all of your arms and hands on the floor above your head, keeping the arms parallel and straight on either side of your head, whilst keeping your back flat on the ground, pain free?

8. Can you do a full range behind the neck shoulder press and lat pulldown (medium, palm-facing forward grip) whilst keeping your elbows directly under your wrists and your wrists bent only enough to hold the bar, pain free?

9. Can you bend your right arm up behind your back and touch the shoulder blade of the other side without any assistance from the other arm, pain free?

10. Stand facing a mirror again. Start with your hands by your side. Raise them slowly up in the frontal plane, palms down, just like a lateral dumbbell raise but very, very slowly. From the start, watch your upper traps and shoulders. Do the upper traps stay at the same length

and does the shoulder stay totally still until your arms are parallel to the ground? If not, look out for trouble!

Examples of Dealing with Shoulder Injuries — Level 2

At this level you're fully aware of the pain, but may ignore or misinterpret it. You may say, "My shoulder is a bit sore" and do nothing. Or perhaps you do the easy things like apply ice or take an anti-inflammatory. Both have a role (although ice is over-used), but these things aren't enough. They are, in many cases, simply masking the symptoms, not addressing the cause.

So what should you do? Again, I use my seven-step model:

1. Identify the cause.

Sometimes it can be hard to identify the cause. The point of pain isn't always the area of cause, but the site of the symptom. You want to treat the cause, not the symptom. If you have no better guide, use the ten-point test above. If you fail in any of these areas, correct this aspect.

It's my perspective that excessive shortening of the anterior horizontal (chest) and inferior vertical (lower lats) are the two main causes of shoulder problems. It's simplistic but accurate.

These conditions cause excessive lengthening of the posterior horizontal muscles (scapula retractors) and superior vertical muscles (in particular the muscles that control shoulder blade elevation). This means these muscles don’t function optimally, and the movement of the humerus isn't guided in the way that's optimal, resulting in varied shoulder damage such as soft tissue impingement, joint wear, etc.

2. Treat the cause.

If you believe your joint pain is a result of impaired function to the muscles that impact the shoulder, your treatment should include the following steps below. Irrespective of whether your shoulder challenge was caused chronically or traumatically, you can and should use the following steps to counter changes that have occurred in the surrounding tissue:

A) Lengthen connective tissue. Use stretching and other techniques to achieve this. Prioritize the muscles impacting the shoulder as to which is the greatest contributor to the challenge and which is the least, and ensure that your sequence and time spent in each stretch reflects this.

Neck stretches: Place one hand by the body, turning the hand so that the palm is facing the ceiling and the hand is pointing outwards. Lower the head the other way and use the hand of the side that the head is leaning to pull the head gently over further, taking the ear to the shoulder. Do the same in reverse on the other side. Repeat the tightest side. There's another

option for those keen to enhance this area, and that's to take the ear towards the outer pec, stretching the broader upper trap area near the spine.

Shoulder stretch: This is an old standby. There are three positions:

• Arm up over the head, other hand pulling backwards on the triceps just above the elbow, stretching the triceps.

• Arm across the front of the chest, other arm pulling it in to the body from that same leverage point on the triceps just above the elbow, stretching the posterior or rear of the shoulder and compressing the acromio-clavicular joint.

• Arm up behind the body, other hand also behind the body pulling it up, stretching the anterior or front of the shoulder.

Forearm stretches: Place one arm straight in front of the body. Use the other hand to assist in creating the stretch. There are three positions I recommend:

• Palm up, pull the hand down, stretching the forearm flexors.

• Palm down, pull the hand up, stretching the forearm extensors.

• Palm of one hand faces down, then rotates outwards and then upwards. The palm of the other hand then contacts with the back of this hand, pulling the fingers further around and up, stretching the forearm rotators.

Chest stretch: Stand close to a vertical frame or door frame and have one hand up on it. There are four positions:

• Elbow bent to 90 degrees, upper arm parallel to the ground, lower arm in contact with vertical frame, rotate the body away. This should provide a very isolated chest stretch.

• Now move a bit further away from the frame and extend the arm until the elbow is just bent, hand and/or wrist in contact with frame, palm facing forward, rotate body away. This will still be a strong chest stretch, but now will also be felt in the biceps.

• Now move a little further from the wall again and straighten the arm out completely, hand/wrist still in contact with palm facing forward, rotate away. This will increase the stretch in the biceps/forearm.

• Keeping the arm straight, rotate the forearm, taking the palm down and then facing to the rear, rotate away. This will take the stretch into the forearm extensors.

Lat stretch: There are two here:

• Stand under a horizontal frame such as a chin bar, but make sure your feet can still touch the ground. Hold the bar above you with one arm at a time, lowering your body down and pushing the pelvis in the opposite direction to get a stretch on the lats.

• Stand in front of a vertical frame and lean forward, grasping it with one hand. The upper body is basically parallel to the ground now. Rotate the hips away from the stretch side to get a stretch down the lats and upper back.

B) Lower tone of tissue tone so that it’s optimal. This will involve stretching, massage and other modalities including heat.

C) Stabilize the joint. The key stabilizers of the shoulder include:

• The muscles that pull the shoulder blades together (including the upper and lower trapezius, the lats and the rhomboids), making sure the humerus isn't too far forward in its socket.

• The muscles that pull the shoulder blades down (including the lower traps), making sure the humerus isn't too high in the socket and that the shoulder stays still until the arm is raised above parallel to the ground in a vertical pushing movement.

• The internal rotators of the upper arm (including the "rotator cuff" group of muscles), making sure the upper arm isn't too internally rotated or pulled forward in all its movements.

• In all movements in the gym, apply the mantra of shoulder health: "back and down." This refers to keeping the shoulder blades back and down.

You can perform specific drills to selectively recruit and train these muscles, then progress to drills that aren't as isolated and more dynamic to retrain the integration of these muscles into daily human movement. However, if you have a shoulder injury, don't assume that gross strength training movements will adequately recruit and retrain the motor patterns of these stabilizers.

Encouragingly, more therapists and strength coaches are being taught shoulder rehab concepts in their training. This is fortunate, because the "innovation" of the 1990’s, the old "one external rotation drill done for one set last in the workout with as much weight as you can displace" was as valuable as pissing in the wind!

3. Treat the symptom area.

If there was any impingement in the shoulder joint, there are going to be some "angry," aggravated tissues. I'd recommend you consider applying or at least researching the application of the four methods I outlined in the previous article.

Never lose sight that the best way to heal the body is to help the body heal itself. The rate of healing in the shoulder joint will be optimized when the length-tension-stability of the shoulder joint is optimized.

4. Avoid any activity or loading that reproduces the pain.

This is real tough, because most upper body movements are going to include the shoulder! Bench and shoulder variations are the first ones affected, but even pulling movements (more so vertically) can reproduce joint pain. Even sleeping too long on one side can stir up or prevent healing of a shoulder issue. There are even recreational activities such as surfing that can aggravate a shoulder condition!

My wisdom is this: the first lost is the best loss. So if it means missing out on your favorite exercises or muscle groups for a few days, do so. Bite the bullet early because if you're forced to do it later, it's usually a longer period of abstinence you'll be experiencing! Being conservative earlier usually means a more aggressive and advanced return. Being aggressive early in rehab usually means a more protracted and painful rehab experience.

5. Return the joint position to a healthy state.

This includes negating any negatives developed during the injured period, including joint surface damage. Supplements such as glucosamine, fish oil, and high doses of anti-oxidants have a major role to play here. You need to determine the optimal length, tension, stability, and joint position/relationship for each of your "at risk" joints.

6. Progressively return to the range, exercise and/or loading you want to be exposed to in order to achieve your goals.

Now it’s time to strengthen the movement again and the key word is *progressive*! After all, lack of appropriate progression in loading parameters is one of the greatest contributors to chronic injuries!

Now, this doesn’t mean you get to go back to any exercise, full range, any loading, all at once. There may be a progression in which these variables are reintroduced. You'll find your program should change every few weeks. Many small changes result (in time) to a lot of bigger changes. Be prepared to recognize when you've erred. Stop, back track, and regroup. Don’t try to outsmart shoulder pain!

7. Understand that an error in decision that results in reproduction of the pain is a setback, like dancing two steps forward and one step back!

For me, the goal of a rehab program is primarily to avoid reproducing the pain. If I achieve this goal, I've assisted the body's natural healing process. Don’t under-estimate the seriousness of this step!

Examples of Dealing With Shoulder Injuries — Level 3 and Above!

If you've gotten this far, you either have an impact injury from contact sport, or you've really mismanaged what started out as a relatively innocent shoulder niggle—or a combination of the two! Most of these situations should never have happened, but it’s too late to talk "if only’s" now! In the rare event you do serious damage in a single event in the gym, let's go

over what you can do.

1. Stop the lift or whatever you're doing.

2. Don't lift any more. Have your arm placed in a sling or carry it with the other arm as if it were in a sling. Even though this may seem melodramatic, it’s better to err on the side of caution.

3. Make arrangements for an appropriately qualified person to assess the condition.

4. Under their guidance, I expect you'd commence a course of anti-inflammatories or similar.

5. Be prepared to do everything one-handed, which means there are many things you'll need assistance with for a period of time.

6. From there progressively return to using this arm, but only as pain allows. In other words, don’t do anything that causes reproduction of the pain!

7. Continue to work with the services of appropriately trained physical therapists and medical professionals.

Remember, you only have two shoulders and if you want to be lifting for a few more decades, you'll need to treat them with respect! Shoulder surgery or being unable to train aren't options I recommend!

Prevention of Shoulder Injury

As always, this is my favorite part: prevention! Below are my top ten keys to preventing shoulder injury:

1. Maintain optimal length in the muscles around the shoulder. Don’t get sucked into the BS that "stretching makes you weak"! The propagators of this can say to you in a decade they were a bit off track, but that’s not going to help you undo a decade or more of no stretching!

2. Stretching can achieve varied degrees of tension reduction in different muscles, but in the ideal world needs to be complemented with massage and similar techniques. The chest is an example of a muscle that really needs massage to achieve optimal tension.

3. Maintain optimal stability in the scapula rotators, depressor and external rotators. Boring drills, but so necessary! I teach upper body control drills to be conducted regularly to ensure the ability to stabilize the shoulder joint.

4. Balance your upper body training between pulling and pushing exercises. For every pushing exercise, have an equal and opposite in pulling exercise. Alternate the sequencing of them, too. Don’t always lead with horizontal pushing (chest) exercises. Dominating in horizontal pushing exercise could well be the number one contributor to shoulder issues through strength training!

5. Be progressive in loading. Understand also that you need phases of sub-maximal loading to teach recruitment, alternated with more loaded phases.

6. Review your posture, seated, standing, and when you lift! For example, when bench pressing pull back the shoulder blades and keep them back. When deadlifting, take advantage of this opportunity to strengthen your upper back in a posturally square or correct manner. These are just a few tips in the area of posture.

7. Consume joint regenerating nutrients. Make sure your diet and supplements include glucosamine, omega-3's, and high dose anti-oxidants minimally.

8. Warm the joint up before each upper body workout. Raise the upper body and shoulder joint temperature before each upper body workout by performing joint rotations prior to stretching—and wear a second layer of upper body clothing! Follow that by stretching to ensure that when you load, you have optimal joint relationships and that the optimal tension gained from stretching enhances function (burn me at the stake now or later?!)

9. Wear double layer clothing on the upper body before and during the warm-up. Even consider putting it back on in the rest periods. This will increase the joint temperature and maintain it higher during periods of rest/lower level activity during the training session proper. My understanding of the relationship between joint temperature and joint lubrication is they are correlated. Makes sense to me to keep the joint temperature high.

10. Always include the deadlift in your program. The deadlift may well be the secret and often missing link to avoiding shoulder issues. Well-performed deadlifts are so valuable. I feel anyone benching heavy and not deadlifting is fighting a losing battle to reduce the incidence of shoulder injuries.

Keep doing the above ten things even after the pain goes away! It's so common to see a person cease his injury prevention/management techniques as soon as he thinks all is okay. Don't drop your guard! Keep some or all of these going all the time!

Conclusion

Most people participating in strength training are actually doing more harm than good, mainly because of the flaws in their program design. Strength training program design universally is still at a stage of development where I believe that most programs are fundamentally flawed.

Now this isn't one of those 1980 to 1990 ads in an iron mag where the header states that no one but this "handpicked to go to Russia" author knows what he's doing. I seek to gain nothing but share my perceptions, with the intent to help out as many of those training with weights get more than they lose from their training. After all, the slogan of my company is teaching the world how to train! (Check out my new website, www.coachking.com, in which we take this concept to a new level!)

Now take action to ensure that you can bench press, row, shoulder press, and chin-up without

pain for years and years to come!