

Dumbbells Aren't for Dumbbells

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Weight training with free weights or dumbbells can be tricky. Having an understanding anatomy and biomechanics goes a long way to preventing injuries as well as improving performance. One rule of thumb to follow is if it hurts then something is probably wrong. In the face of, “no pain, no gain”, this can be a difficult concept to embrace. Therefore learning to differentiate between good pain and bad pain is crucial. Often shoulder injuries occur because these joints have many degrees of freedom and are pivotal in most exercises. Having many possible degrees of motion leaves them open to having many possible impairments leading to injury. Fortunately a little knowledge goes a long way.

Shoulder mechanics

If you have shoulder pain, chances are you've developed muscle imbalances that are interfering with normal shoulder mechanics. Typical of weight lifters is to over develop chest, biceps and latissimus dorsi in comparison to other muscles which balance their actions (see Figure 1).

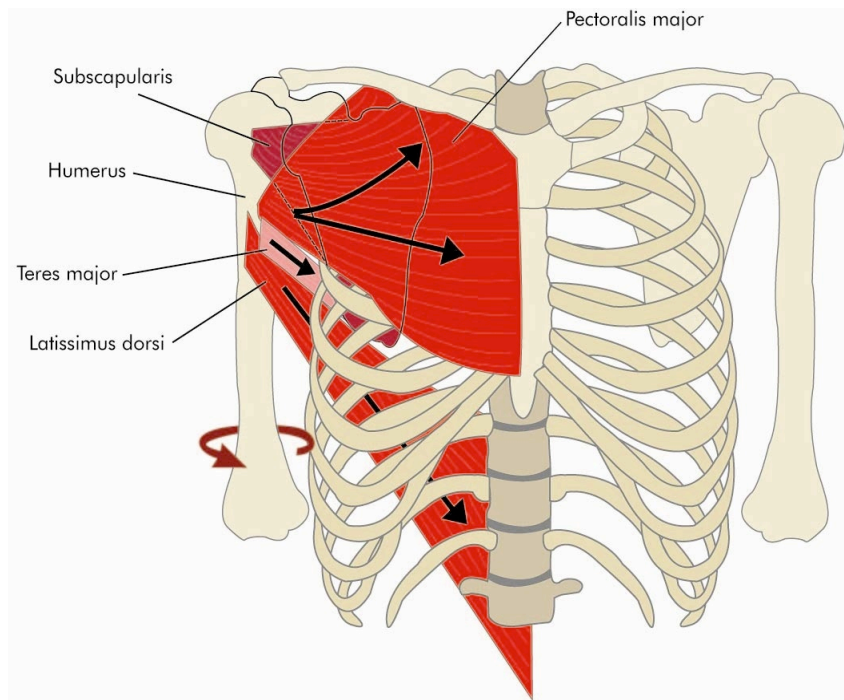


Figure 1. Over development of the internal rotators of the arm establish an environment for rotator cuff impingement and other shoulder-related pain.

These muscles act as internal rotators of the arm and gradually dominate arm movements. Excessive internal rotation of the arm bone (humerus) contributes to pinching or impingement of the rotator cuff muscles (specifically

the supraspinatus) as well as altering their ability to function. Dominance of these muscles can also contribute to the scapulae sliding too far away from the spine at rest and during overhead activities. A case in point is the standard overhead shoulder press. This is a great exercise if you have full range of motion of your scapulae (shoulder blades) and humerus. However if your scapulae are not fully rotating, sliding outward (abducting) or elevating, or if the humerus is rotated inward during arm movements, the neck, back and/or rotator cuff muscles will typically be compromised.

One of the functions of the scapula is to support the arm in overhead activities. If it's not able to travel through its full range of motion then the shoulder joint is basically on its own in a dangerous situation. You can see this in people who arch their back to get the arm up in the air. Typically the scapula has rotated as far as it will go, albeit not far enough, and then the back arches in order to bring the trunk underneath the raised arm for more support. The back will usually extend from its most mobile segment which happens to be its least stable. This can contribute to back pain.

To prevent this, raise your arm overhead with no weights to see if the back arches in order to fully raise the arm. If it does then chances are you have tight shoulder and/or chest musculature preventing normal movement of the shoulder blades. Stretching the muscles attaching to the scapulae and arm bones will be crucial to restoring normal mechanics and thereby prevent injury.

Integrating more awareness of the biomechanics of the shoulder can eliminate aches and pains, improve performance and reduce your risk of strains and tears down the road. Your shoulders, neck and back will love you for it!

Rick Olderman, owner of Z-Line Training, is a licensed sports and orthopedic physical therapist, personal trainer and Pilates instructor. His work experience has spanned private clinics, health clubs and corporate clients. His specialty is treating chronic and recurring injuries with special attention to injury prevention. Rick's unique hands-on clinic topics include Fixing Chronic Back Pain, Fixing Neck & Shoulder Pain, Fixing Hip and Knee Pain and Injuries and Exercise. He also fits individuals with custom foot orthotics to correct biomechanical problems and pain in the feet. Whether people suffer from degenerative disk disease, herniated disks, stenosis, carpal tunnel syndrome, headaches, recurrent shoulder impingement, groin pain or bursitis pain, Rick's distinctive clinics and unique treatment approach teach people how to correct the root causes leading to these tenacious and costly problems.