

Are you working the Diagonals?

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When putting together a strengthening program for the shoulders and arms many athletes only work in three planes of movement; the sagittal, horizontal, and frontal. Motion in the sagittal plane occurs perpendicular to the front of the body. Leg press, bicep curls and standard sit ups all occur in the sagittal plane. The horizontal plane exists parallel to the ground relative to the body. Push ups and chest press work the arms in the horizontal plane. The frontal plane motions occur to the side of the body. Jumping jacks take the arms and legs into a frontal plane.

The shoulder joint and the muscles that stabilize it (called the rotator cuff muscles) are not typically used in the frontal, horizontal or sagittal planes alone while performing athletic motions. Most are done with some combination of diagonal movement between the three planes. Therefore it makes sense to strengthen the mobile and relatively unstable shoulder joint in the various directions that a given sport might take the arms.

Imagine the motion of the pitching arm, the low hand on a hockey stick, or a backhand in tennis. Compare these motions with the motion of most shoulder and arm exercises performed in a typical gym workout. Nautilus type machines can be effective for building muscle mass and strength, but this type of strengthening does not offer good translation into the dynamic motions that sports like tennis, baseball, basketball, and hockey require because they are not the same type of motions.

Power, control and stability can be better achieved through 'sport specific training' using combinations of free weights, pulley weights, elastic resistance bands, Swiss and weighted ball exercises. The added benefit of training the shoulder through diagonal planes is that it serves to prevent injuries that are common to these types of sports.

Make sure that your upper body strengthening program includes some combination of diagonal motions to increase stability and power in the shoulder and rotator cuff. If you have questions about specific exercises make sure you consult your athletic trainer or call any of the Southeastern Physical Therapy locations.