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The main job of the muscles between the chest and upper back is to keep the upper arm bone stable so that other muscles can work well and move it freely. One key thing they do is help lift the top part of the shoulder blade upwards, which lets the other muscles do their job more easily. If these muscles are weak, the opposite can happen: instead of moving the arm up, the shoulder blade moves down, making a bad space for the tendons to rub against and causing problems like impingement syndromes. This issue gets worse when people lift things that require them to stretch their arms way up or if they do repetitive lifting movements. The muscles around the upper back are tricky to test because of how they move with the bones, which can make it hard to get an accurate diagnosis. To make sure the tests are reliable, doctors use special tools like electromyography and MRI scans. When testing the muscles in this area, it's best not to have patients lie on their backs because it lets other muscles take over and makes it harder to tell what's really going on. Instead, they should be tested while sitting or in a position that lets the doctors see exactly how the shoulder blades are moving. By looking at how the scapulae move when the person is resting and when they're actively moving their arms, doctors can figure out if there's any weakness or imbalance in these muscles. The normal way for the scapula to sit is with its edge close to the chest wall and its border parallel to the spine. If it's not like that, it could mean there's a problem with one of the surrounding muscles or even something more serious going on with the spine. The most common sign of trouble in this area is when the scapula "wings out" because the muscle underneath it isn't strong enough. This can also happen if other nearby muscles are too tight or weak. The way all these joints work together is called scapulohumeral rhythm, and it helps us move our arms up and down by letting them all move in a specific order. To do something as simple as lifting your arm all the way up, you need to have this rhythm happening smoothly between the shoulder blades, the upper arm bone, the acromioclavicular joint, and the sternoclavicular joint. To keep track of how well these parts are moving together, doctors look at the ratio of how much each part moves compared to the others. For example, when someone is trying to lift their arm all the way up (which is 180 degrees), they should be able to move it in a certain pattern so that it looks like one fluid motion. If this rhythm isn't happening correctly, it could mean there's something wrong with how these joints are moving together. Is there a specific ratio of glenohumeral to scapular movements in shoulder forward flexion and abduction? Yes, within the total arc of 180°, there are 120° of glenohumeral abduction and 60° of scapular rotation. These movements occur simultaneously throughout the range. To assess scapular mobility, passively raise your arm above your head to determine its flexibility. The scapula starts rotating at around 30°, with significant individual variation. Scapular rotation continues until reaching about −20° to −30° from full flexion. When checking for glenohumeral motion, ensure the scapula remains in its rest position at ranges less than 30° of forward flexion. If the scapula moves significantly as the glenohumeral joint moves through 0 to 60°, there is limited glenohumeral motion. Above 30° and up to around 150° or 160° in both active and passive motion, the scapula moves in concert with the humerus. The serratus should always be tested during shoulder flexion to minimize synergy with the trapezius. If the patient's scapular position at rest is normal, ask them to raise their arm above their head in the sagittal plane. If they can lift it well above 90° (indicating glenohumeral muscles are at least Grade 3), observe the direction and amount of scapular motion that occurs. Normally, the scapula rotates forward with controlled movement by the serratus, and erratic or "uncoordinated" motion may indicate weak serratus. The normal range of scapular motion is about the breadth of two fingers (Figure 5-7). If the patient can raise their arm with simultaneous rhythmical scapular upward rotation, proceed with the test sequence for Grades 5 and 4. The scapular region is a complex area that encompasses several muscles responsible for its movement. The trapezius muscle plays a significant role in scapular depression and adduction, with the middle and lower fibers originating from the T1-T5 vertebrae and spinous processes. Another key player is the latissimus dorsi, which originates from the spines of the 6 lower thoracic vertebrae and the thoracolumbar fascia. On the other hand, the scapular adduction and downward rotation are primarily facilitated by the rhomboid muscles. The rhomboid major muscle originates from the T2-T5 vertebrae and spinous processes, while the rhomboid minor muscle originates from the C7-T1 vertebrae and ligamentum nuchae. However, there is ongoing debate in the clinical community regarding the reliability of tests for these muscles, particularly the rhomboids. Some studies suggest that these muscles are frequently underrated due to grading issues, which can lead to confusion when separating their functions from other scapular or shoulder muscles.

Manual muscle testing scapular abduction. Manual muscle testing shoulder horizontal abduction. How to measure shoulder abduction. How to test shoulder abduction. How is the deltoid muscle tested. What muscles control shoulder abduction. Which muscle causes shoulder abduction.