

## Muscles & Joint Actions: Scapulae Video Transcript

Welcome to the AFLCA Exercise Theory video series supplementing Chapter 7, Basics of Anatomy. [black title slide: Muscles and Joint Actions: Scapulae]

In this video, we're going to cover the muscles and joint actions of the scapula, or shoulder blade. Scapula refers to one shoulder blade. Scapulae is the plural form.

Note that we're not focusing on the shoulder joint itself, the glenohumeral joint where the head of the humerus comes into the glenoid fossa. Just the scapula, the flat bone on the back side of the ribcage. Obviously everything in the shoulder girdle is attached and moves together, but let's keep our discussion to the muscles that move the shoulder blades around.

The scapula is a wide, flat bone on the back side of the ribcage. This bony part here is called the spine of the scapula. You can feel it if you reach over your shoulder with one hand.

Let's start with the joint action **scapular elevation**. From anatomical position, the scapulae rise up, or shrug toward the ears. The agonist (or prime mover) of scapular elevation is the levator scapula. It is located on the back of the neck, attaching to the scapula and cervical vertebrae.

Synergist, or assisting muscle, is the trapezius, specifically the upper fibres.

Now, here's **scapular depression**. The scapulae move back into anatomical position. The agonist or prime mover of scapular depression is the pectoralis minor. The pectoralis minor is deep to the pectoralis major. As you can see, it attaches to the scapula and ribs.

Synergist, or assisting muscle, is again the trapezius, but this time the lower fibres of the trapezius.

That's scapular elevation and depression. Let's move on.

Here's **scapular protraction**. The scapulae broaden, moving away from the spine. The agonist or prime mover of scapular protraction is the **serratus anterior**, which attaches to the inside edge of scapula and ribs.

Scapular protraction is often described as rounding the spine, or even slouching. Perhaps, but there are some important exercises where scapular protraction is strong and essential. For example, a gymnast on rings is holding the scapulae in a depressed and protracted position. Also, during a **plank**, the scapulae are protracted.

Finally, here's **scapular REtraction**. The scapulae move in toward the spine, squeezing together. The agonist or prime mover of scapular retraction is the rhomboids. Synergist, or assisting muscle, is again the trapezius, but this time the middle fibres.

Think about this exercise, a posterior deltoid flye with elastic resistance. The joint action of the shoulder is horizontal abduction, but at the end of the movement, the rhomboids and mid-trapezius muscles contract for scapular retraction. Most exercises for the back of the shoulder also involve scapular retraction.

Those are four movements of the scapulae - elevation, depression, protraction and retraction. Practice them, thinking about the context of muscles crossing joints and pulling on bones. Then, can you think of exercises that use each these joint actions?

Thanks for watching.