

Muscles and Joint Actions of the Push-Up Video Transcript

Welcome to the AFLCA Exercise Theory video series supplementing Chapter 7, basics of anatomy. In this video, I'm going to take you through the muscles and joint actions involved in the push-up exercise through the concentric and eccentric phases.

The push-up is a compound exercise, which means that it involves more than one joint. Specifically it involves the shoulder and the elbow joint.

When determining joint actions and muscles used, it makes sense to consider the concentric phase first. This is because whatever muscles are used for a joint action during the concentric phase of an exercise, are the same muscles used for the opposite action at this same joint during the eccentric phase.

During the concentric phase, muscles generate force to shorten. The body moves UP, against gravity.

During the eccentric phase, muscles generate force to lengthen. The body moves DOWN, with gravity.

First let's look at the **elbow** joint.

During the push-up, the joint action is elbow EXTENSION. The triceps are the muscles responsible for elbow extension. The triceps generate force, shortening, for elbow extension during the concentric phase. Also, the triceps generate force, lengthening, for elbow flexion during the eccentric phase.

Remember! The muscles that work concentrically on a joint are the same muscles working eccentrically on that joint.

Let's move on to the **shoulder**.

During the concentric phase in a very wide stance push-up, the joint action is shoulder HORIZONTAL ADDUCTION. In a very narrow stance push-up, the joint action is shoulder FLEXION. In a stance that is somewhere in between really wide and really narrow, you could say the joint action is a little bit of both shoulder horizontal adduction and shoulder flexion. Regardless, the muscles responsible are pectoralis major and anterior deltoid.

The pectoralis major and anterior deltoid generate force, shortening for shoulder horizontal adduction during the concentric phase. Also, the pectoralis major and anterior deltoid generate force, lengthening, for shoulder horizontal abduction during the eccentric phase.

Why? Because again, the muscles that work concentrically on a joint are the same muscles working eccentrically on that same joint.

Let's watch it again.

During the concentric phase, the triceps power the extension the elbow, and the pectoralis major and anterior deltoid power the horizontal adduction the shoulder.

During the eccentric phase, the triceps control the flexing of the elbow, and the pectoralis major and anterior deltoid control the horizontal abduction of the shoulder.

In general, we know that the push-up is a fantastic compound exercise for the triceps, pectoralis major, and anterior deltoid. This video explains why, in terms of muscles crossing over joints, pulling on bones, and how the body is moving in relation to gravity.

It may be helpful to watch this video a few times, and to think about these concepts as you do your own push-ups.

Thanks for watching!