The Perfect Pull-up

By

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To: XXXXXXXXX

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In order to accomplish the perfect pull-up into your routine, you should first know how the muscles in your body will work to achieve the desired result you are looking for. The primary muscles are the Latissimus dorsi, it is a large and broad muscle in the back that is used in moving your shoulder. The Biceps brachii is the flexor muscle that is located in front of the upper arm that flexes the forearm. The secondary muscles are the Trapezius, it's a large muscle that runs through the neck, shoulders and upper back. Brachioradialis, it is located in the upper forearm. Deltoid, it is the thick triangular muscle that covers the shoulder joint. Teres Major, this is a broad muscle that lies behind the Latissimus dorsi. Rhomboid, are located in the upper back that help with movement of the shoulder blade. Rectus Abdominis, this is a large, long, flat muscle that runs along both sides of the abdomen. Obliques, these muscles are located on either side of the torso. Pectoralis Major, a thick muscle located at the chest. Triceps Brachii, a large muscle located on the back of the upper arm. Each skeletal muscle has muscle tissue, connective tissue, blood vessels and nerves. (1)

There are three layers of connective tissue that are associated with each muscle. An epimysium, a perimysium and an endomysium. The entire muscle is covered with a layer of collagen fibers called epimysium. It is connected to the deep fascia, a dense connective tissue layer. The connective tissue fibers of the perimsium divide the skeletal muscle into compartments, each containing a bundle of muscle fibers called a fascicle. The fascicles has branches of blood vessels and nerves. Within each fascicle has delicate connective tissue of the endomysium, that surrounds the muscle fibers and loosely interconnects adjacent muscle fibers. This elastic connective tissue contains capillary networks that supply blood to the muscle fiber, Myosatellite cells that repair damaged muscle tissue and nerve fibers that control the muscle. At the end of each muscle is a bundle of collagen fibers that come together to form a tendon. (2)

When you work a muscle, contraction happens. This is where the wonderful process called the sliding filament theory comes in. When the skeletal muscle fiber contracts the H and I bands get

smaller, the zones of overlap get bigger, and Z lines move closer together and the width of the A band remains constant. The contraction weakens with the disappearance of the I bands, at which point the Z lines are in contact with the ends of the thick filaments. During a contraction, sliding occurs in every sarcomere among the myofibril. This results in the myofibril to shorten, which shortens the muscle fiber. (2) Contraction occurs only when skeletal muscle fibers are activated by neurons. A neuron can activate a muscle fiber through stimulation of its sarcolemma. Which brings us to excitation-contraction coupling that releases calcium ions from the cisternae of the sarcoplasmic reticulum. The calcium ions then trigger interactions between thick and thin filaments, resulting in muscle fiber contraction and the consumption of energy in the form of ATP. These filament interactions produce active tension. (2) In order for a muscle to contract, they need energy. That energy comes from adenosine triphosphate (ATP), a high energy molecule found in every cell in the body, ATP is the only energy source that muscles can use to power their activity. Thick filaments need ATP in order to detach their heads from thin myofilaments. They use their energy from the ATP to complete their next power stroke.

Muscle fibers store only a limited supply of ATP (4-6 seconds worth). ATP must be supplied continuously in order for muscles to continue to work. The most abundant energy source for ATP is glycogen-a starch form of the simple sugar glucose made up of thousands of glucose units. In the human body, the liver stores glucose by converting it to glycogen. When the body needs energy, the liver is stimulated to change glycogen back to glucose and secrete it into the bloodstream for use by the cells. (3)

In the cells, glucose combines with oxygen to yield or produce carbon dioxide, water, heat, and ATP. This process of energy production that uses oxygen in the reaction is called aerobic metabolism. Carbon dioxide, water, and heat are all waste products of this chemical reaction. Carbon dioxide moves from the cells into the blood to be carried to the lungs, where it is exhaled. The water becomes a necessary part of a cell's internal fluid. The heat contributes to normal body temperature. If too much heat is

generated, such as during vigorous physical activities, the excess heat is carried away and removed from the body through the process of sweating. (3)

Now that you have a basic concept of muscle fibers and energy down, we can now explore what type of pull-up would be best for your work out. Keep in mind that pull-ups are one of the hardest exercises that you will do. Let's get started.

1. Assisted Pull-up

   The bar is 4 feet from the ground for people who couldn't do a pull-up. You sit on the floor, extend your arms to the bar and pull your chin over the bar leaving their feet on the floor. This method reduces the weight being pulled up by 40 to 50 percent. It's tougher than it sounds, but it can be your first step to doing a real pull-up. You can also do this with a pull-up/dip bar machine using the dip bars as your assisted pull-up bars. (4)

2. Lat Pull downs

   This exercise is basically the same as a pull-up except it is done with a machine that you can find in most weight rooms. Simply sit under a hanging bar attached to a stack of weights and pull the bar just below your chin. It is best to choose a weight that is roughly 40 to 50 percent of your body weight. Do as many repetitions as you can for a least three sets. (4)

3. Negative Pull-ups

   This is the last step in accomplishing your first pull-up, or doubling your present maximum. It is also the way to build your endurance for the flexed arm hang. Hold yourself in the flexed arm hang position for 10 seconds, then you must fight gravity and slowly lower yourself down to the count of five seconds. (4)

4. Pull-up

   Grab a bar with a grip slightly wider than shoulder width, with your hands facing away from you. Hang all the way down. Pull yourself up until your chin is above the bar. Slight pause.

Lower yourself all the way back down. Go up, and really concentrate on isolating your back and biceps. Don't swing.

Once you can do a single pull up, work on doing them in sets. Do one pull-up, then wait a minute or two and do another one. Wait a few more minutes and do another one. A few days later, try to do two in a row, and do a few sets of two. You need to start somewhere, but as soon as you can do one, you can find a way to do two. After that, find a way to do three, and so on. This Pull-up works out the back, biceps, shoulders and chest. (5)

5. Chin up and Neutral-Grip Pull-up

Same concept as a pull-up, but when you grab the bar, your hands are facing toward you. These pull-ups put more emphasis on the biceps. (5)

I have now shown you five different ways to do a pull-up. Just remember to do your pull-up routine only three days a week. Good luck with your quest to become a healthier you.

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