

PREPARING TO WIN: STRETCHING...SHOULD YOU OR SHOULDN'T YOU?

Stretching...if there is one subject that carries constant controversy, it would have to be the discussion of stretching and whether it is beneficial to an athlete's performance program or not.

To those athletes who have endured a substantial injury and/or surgery will attest to the benefits of stretching and how important it is in reestablishing the optimum range of motion with the muscle(s) and surrounding joints. For other athletes, there is a mindset that stretching actually causes more strain on the muscle and even feels like the muscle shortens during stretching. So how can both be correct?

To explain both sides of this controversy, let's begin by looking at the physiology of how muscles move and the associated reflexes associated with range of motion. There are two types of muscle contractions: isotonic and isometric. An isotonic muscle contraction is a voluntary contraction that causes movement. Under the umbrella of isotonic contractions, there are two types of contractions: concentric (where the muscle shortens as it works) and eccentric (where a muscle exerts force while being lengthened by an outside force). An isometric muscle contraction is a voluntary concentric contraction where there is no joint movement and the length of the muscle is unchanged. Please don't get frustrated with all of these concepts. Instead realize that before you can focus on stretching a muscle, you must first understand how they function so that you can effectively (and without injury) lengthen them for improved range of motion.

Your body is equipped with a stretch reflex known as the Myotatic Stretch Reflex which prevents a muscle from stretching too far and/or too fast, this mechanism protects the surrounding joint from becoming injured. This stretch reflex is mediated through the muscle spindle cells and is constantly evaluating both the speed and length that muscle is going through. When a muscle lengthens either too far or quickly, the spindle cell is stimulated and reflexively causes the muscle to contract, resisting the lengthening and preventing overstretching of the joint. When this happens the muscle will usually stay tight and sore for a couple days to a couple weeks. An additional component to the stretch reflex is a concept known as the GTO (Golgi Tendon Organ). This reflex monitors the amount of stress being placed on the tendon at the attachment. It is the combination of the Myotatic stretch reflex and the Golgi tendon organ that causes the muscle to relax, lengthen and ultimately increase your range of motion.

STRETCH REFLEX

There are numerous debates on the proper way to stretch. When you begin to lengthen a specific muscle, as mentioned above, your body is equipped with the Myotatic Stretch Reflex as a defense mechanism to avoid you stretching the muscle too far and causing damage. This reflex is a combination of muscle tissue and nerves that defensively react to sudden, quick and bouncy movements. If you follow the principles of this mechanism, your body needs to be stretched in a slow manner to avoid the activation of the stretch reflex. When the stretch reflex is invoked, the muscles shorten and pull on the tendons and ligaments of the muscle(s). With this in mind, you

do not want to bounce when you stretch. The momentum created through the bouncing movement overrides the stretch reflex and tears (not lengthens) the muscle(s).

HOW TO STRETCH

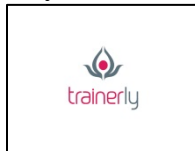
To enhance your range of motion in the shortest period of time, you should follow the warm up protocols provided in a previous article (contact us if you don't have it). Once the tissue is warmed up and you are sweating, slowly isolate (see the link for a complete stretching chart & video demonstration links below) the specific muscle you want to stretch and begin to take the muscle through its normal range of motion until you feel some tension develop within the belly of the muscle and/or the attachments. Your goal is to NOT activate the stretch reflex, simply stop deepening the stretch just shy of feeling the reflex activate (with practice you will "feel" this happen). Once you get to this point, focus on breathing deep through your belly to provide the much needed oxygen and hold until you feel the tension within the muscle relax. Once this occurs, slowly repeat the process until your optimum range of motion is achieved.

PLEASE NOTE: IT CAN TAKE UP TO A YEAR OF CONSISTENT STRETCHING TO REACH AN OPTIMUM RANGE OF MOTION, SO BE CONSISTENT AND PATIENT FOR OPTIMUM RESULTS.

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