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Should you stretch first or strengthen first

In previous articles I have pointed out that evidence is lacking that stretching exercises prevent injuries. My belief is stretching exercises play a valuable role when applied correctly, particularly in terms of rehabilitating injuries. Stretching exercises should be reserved for muscles which are short and tight, and stretching exercise should be avoided if a muscle is long and lax.

Frequently, when evaluating individuals with injuries such as tendonitis or tendinopathy short, tight muscles are identified, signifying that the muscle should be treated with stretching exercises. However if there is a short tight muscle it is quite likely there is an adjacent muscle which is too long and lax. Typically a muscle which is too long when it's strength is tested when the muscle is in its shortest position it will be weak. The term "stretch weakness" is often used to describe a muscle which is too long.

The situation is one in which one muscle is short and needs stretching. An adjacent muscle is too long and needs strengthening exercise. Either of the muscles the long one or the short one can be the injured muscle and the source of the pain. The question arises in what sequence should the rehabilitation exercises occur, that is, should the tight muscle be stretched first and then work on strengthening the long weak muscle, or should the first thing be to work on the stretched weak muscle with strengthening exercises, and then stretch the short muscle? Of course a third option is to design exercise to work on both issues simultaneously.

Unfortunately, the question of which is the best sequence for stretching and strengthening exercises has not been addressed with scientific studies, so we are left with opinion. My opinion is if one muscle is too long and relatively weak this is the muscle which needs attention first. Strengthen the relatively long muscle first. Otherwise the short muscle becomes longer and we are left with greater flexibility and very little stability. In my mind having a weakness is a greater problem than having tightness. Perhaps the development of a sort tight muscle is a positive compensation for a relatively stretched weak muscle.

For example a common belief is pain on the front of the knee can occur if the thigh muscle is weak and the opposing hamstring muscle (muscles on the back of the thigh) is too short. So rather than emphasize stretching the hamstring muscle I would recommend strengthening exercise for the weak thigh muscle first or working on strengthening exercise for the thigh at the same time as stretching exercise for the hamstring. There are a variety of ways to perform hamstring stretching exercises, such as, standing toe touch,

or lying on the back and using a belt or cord to pull the straight leg up stretching the hamstring. A better way would be to strengthen the thigh muscles and stretching the hamstrings simultaneously. While sitting with the spine erect than actively straighten the knee. The process of making the knee extend or straighten while keeping the low back erect will stretch the hamstring while calling on the thigh muscle to contract thereby leading to strengthening the thigh muscle.

Pain on the outside or lateral aspect of the knee is commonly called IT (illiotibial band) band syndrome. With this condition the IT band will be short and tight. Closer examination will find adjacent deep buttock muscles such as the posterior gluteus medius muscle or the medial hamstrings are found to be too long stretched and relatively weak. Again it makes more sense to begin by strengthening the long weak muscles (posterior gluteus medius muscle or medial hamstring muscles) before starting aggressive stretching exercises for the short IT band.

The specific exercises to strengthen the muscles which are too long and weak can be the same exercise used to stretch the short muscles. The position to length or stretch the IT band is to lay prone, bending the knee, grabbing the foot with the opposite hand and pulling the foot towards the opposite buttock. This position should elicit a stretching/pulling sensation on the side and front of the thigh. When this is done by pulling the foot with the opposite hand is basically a passive stretching exercise. If this exercise is done by actively flexing the knee and moving the foot towards the opposite buttock it requires strong contraction of the medial hamstrings and posterior gluteus medius muscles which are likely too long and weak. A strong contraction of the medial hamstring becomes a strengthening exercise for the hamstrings and posterior gluteus medius muscle while stretching the short IT band at the same time.

Much of the information available on the internet and in the literature regarding exercises used to treat injuries recommends stretching exercises. As you read information about exercises to treat injuries look first for information about strengthening exercises before beginning stretching exercise. If a health care professional recommends stretching exercises to treat an injury ask which muscles are short and which muscles need to be strengthened?