S-T-R-E-T-C-H-I-N-G the Truth

By Dr. Jason Abshire, D.C.

Ever thought of skipping out of an exercise class without stretching. How about going for a run and then neglecting to cool down and stretch out? Well, you may want to rethink that strategy.

Muscle injuries are commonly a result of a lack of flexibility. There are two basic types of muscle injuries, overuse/repetitive and strains. The overuse/repetitive condition develops gradually as a result of performing an action many times. While performing the action, the muscles are continuously contracting in the same manner over and over again. This will allow the muscles, over a period of time, to stay shortened. Your body will eventually develop scar tissue adhesions, which keep the muscle short, in an effort to "stabilize" the area. The area then becomes stiff and achy, and in certain instances can compress nerves causing a pain to radiate somewhere in the body. If stretching were to be performed on a daily basis the area would not shorten and the adhesions would not form.

The more obvious muscle injury is the strain. This occurs when a muscle is stretched very rapidly past the point of normal flexibility due to trauma. When this occurs, this is tearing of the muscle tissue. This is commonly called a "pulled muscle". Immediately after the injury the body starts the healing process which involves laying down scar tissue to stabilize the area. This scar tissue will form an adhesion or knot, and this can happen two ways. One way is for the person to immobilize the area and then the scar tissue will develop in a haphazard way forming something that resembles a bird's nest. The other option is for the person to immediately implement stretching of the area in an effort to allow the healing to form in the plane of the muscle fibers. A note of warning: if the muscle strain is severe, stretching can cause the injury to worsen. Seeing a qualified physician is always the best advice.

Stretching is the easiest and most effective way to prevent muscle injuries! Stretching before an activity or exercise is safe and beneficial, but stretching after the activity is the key. The two most common types of stretching exercises are the ballistic stretch and the static stretch. The ballistic stretch consists of multiple bouncing movements. When bouncing, the muscles involved sense a susceptibility to tear, and in reponse contract instead of relax. Therefore, ballistic stretching is not recommended. The static stretch is where the true benefits are arrived. This is a stretch that is held for 30 seconds allowing the muscle to relax and elongate.

Why 30 seconds? There are receptors in the belly or contractible part of muscles called muscle spindles. These sensors detect pressure in the muscle fibers as stress is applied. If the stress or stretch, in this case, is only held briefly the muscle spindle will cause the muscle to contract in order to prevent it from tearing in half. But, there is a way to inhibit this reflex. Golgi tendon organs are sensors found in the tendons (tendons attach the muscle to the bone). When stress and/or a stretch is held for longer than a few seconds, the pressure transfers from the muscle belly to the tendon. The golgi apparatus senses this and overrides the muscle spindle reflex, causing the muscle to relax.

When to stretch has some basic principles to follow. For the average walker and runner that is exercising for the aerobic benefit, or any activity that does not involve sudden or quick movements, then the muscles will warm-up as the activity is started. For these instances, if the person can only choose either before or after, then after is always the better choice. On the other hand, for those who are involved in competitive activities that involve maximal and/or quick and sudden movements it is necessary to have a proper 10-minute warm-up followed by stretching prior to the activity. Immediately after the activity, stretching should be performed.

In summary, the best way to prevent injuries is to stay well stretched throughout the day. Take special care to stretch using the static stretch method after all activities. A few minutes of stretching can make all the difference. So don't forget to s-t-r-e-t-c-h!!!!