

## HOW TO STRETCH

**Start with a warm up...**Stretching is not warming up! It is, however, a very important part of warming up. Warming up is quite literally the process of "warming up", or raising your core body temperature by about one or two degrees Celsius. A proper warm up is divided into three phases: general warm-up, stretching and sport-specific activity

It is very important that you perform the general warm-up before you stretch to loosen stiff muscles. It can also actually improve performance. But it is not a good idea to attempt to stretch before your muscles are warm as it could result in injury.

It is important to note that active stretches and isometric stretches should not be part of your warm-up because they are often counterproductive. The goals of the warm-up are an increased awareness, improved coordination, improved elasticity and contractibility of muscles, and a greater efficiency of the respiratory and cardiovascular systems. Active stretches and isometric stretches do not help achieve these goals because they are likely to cause the stretched muscles to be too tired to properly perform the athletic activity for which you are preparing your body.

On the other hand, stretching is not a legitimate means of cooling down. It is only part of the process. After you have completed your workout, the best way to reduce muscle fatigue and soreness is to perform a light warm-down. This warm-down is similar to the second half of your warm-up but in reverse order.

**Risky Stretches...** The following stretches are considered risky due to the fact that they have a very high risk of injury for the athlete that performs them. This does not mean that these stretches should never be performed. However, great care should be used when attempting any of these stretches. Unless you are an advanced athlete, you can probably find alternative stretching exercises to perform.

### **Yoga plough**

In this exercise, you lie down on your back and then try to sweep your legs up and over, trying to touch your knees to your ears. This position places excessive stress on the lower back, and on the discs of the spine. Not to mention the fact that it compresses the lungs and heart, and makes it very difficult to breathe. This particular exercise also stretches a region that is frequently flexed as a result of improper posture.

### **Traditional backbend**

In this exercise, your back is maximally arched with the soles of your feet and the palms of your hands both flat on the floor, and your neck tilted back. This position compresses the spinal discs and pinches nerve fibers in your back.

### **Traditional hurdler's stretch**

This exercise has you sit on the ground with one leg straight in front of you, and with the other leg bent behind you, as you lean back and stretch the quadriceps of the flexed leg. The reason this stretch is harmful is that it stretches the medial ligaments of the knee and crushes the meniscus. It can also result in slipping of the knee cap from being twisted and compressed.

### **Straight-legged toe touches**

In this stretch, your legs are straight and your back is bent over while you attempt to touch your toes or the floor. If you do not have the ability to support much of your weight with your hands when performing this exercise, your knees are likely to hyperextend. This position can also place a great deal of pressure on the vertebrae of the lower lumbar.

**Duration, counting and repetition...**One thing many people seem to disagree about is how long to hold a passive stretch in its position. Various sources seem to suggest that they should be held for as little as 10 seconds to as long as a full minute or even several minutes

Some controversy surrounds how long a stretch should be held. Some researchers say 30-60 seconds; more recent research on the hamstrings indicates that 15 seconds may be sufficient. Whether the 15 seconds that may be sufficient for the hamstrings is also sufficient for other muscle groups is unclear.

A good common ground seems to be about 20 seconds. Children, and people whose bones are still growing, do not need to hold a passive stretch this long. Holding the stretch for about 7-10 seconds should be sufficient for this younger group of people.

A number of people like to count themselves while they stretch. While counting during a stretch is not, by itself, particularly important ... what is important is the setting of a definite goal for each stretching exercise performed. Counting during a stretch helps many people achieve this goal.

Many sources also suggest that passive stretches should be performed in sets of 2-5 repetitions with a 15-30 second rest in between each stretch.

**Breathing during stretching...** Proper breathing control is important for a successful stretch. Proper breathing helps to relax the body, increases blood flow throughout the body, and helps to mechanically remove lactic acid and other by-products of exercise.

You should be taking slow, relaxed breaths when you stretch, trying to exhale as the muscle is stretching. Some even recommend increasing the intensity of the stretch only while exhaling.

The proper way to breathe is to inhale slowly through the nose, expanding the abdomen; hold the breath a moment; then exhale slowly through the mouth.

As you breathe in, the diaphragm presses downward on the internal organs and their associated blood vessels, squeezing the blood out of them. As you exhale, the abdomen, its organs and muscles, and their blood vessels flood with new blood. This rhythmic contraction and expansion of the abdominal blood vessels is partially responsible for the circulation of blood in the body. Also, the rhythmic pumping action helps to remove waste products from the muscles in the torso. This pumping action is referred to as the respiratory pump. The respiratory pump is important during stretching because increased blood flow to the stretched muscles improves their elasticity, and increases the rate at which lactic acid is purged from them.