[IMAGE]

Stretching the Limits

By Meghan Vivo

How often do you stretch before exercising? If you don’t warm up and cool down regularly, a serious injury could be right around the corner.

A surprising number of people believe stretching is a waste of time. Even some of the most dedicated athletes are prone to skipping the pre-exercise warm-up and the post-exercise cooldown. The reality is just about every physical activity or sport requires quick bursts of energy, and most also involve running. These movements place more strain on your muscles and joints than you may realize. As you run, your muscles try to accommodate movement uphill, downhill and everything in between.

Most workouts cause your muscles to contract and flex, without the corresponding movements to lengthen and stretch them. Stretching exercises relieve muscle tension, flush lactic acid out of your muscles (lactic acid accumulates during high-intensity exercise, creating that "burning sensation," and can contribute to suboptimal muscle performance), and increase your range of motion for longer strides and better athletic performance. For ideal results and maximum performance, start with a quick warm-up, take five minutes to stretch before your workout, and end with a cooldown.

THE WARM-UP

Woman stretching her legs. - Copyright â Stock Photo / Register Mark Contrary to popular belief, stretching shouldn’t be the first thing you do when you are about to work out or play a sport. In fact, stretching cold muscles can result in pulls and injuries. Your best bet is to start with a five-minute warm-up.

Why: A warm-up prepares your body for a good cardio workout by revving up the blood flow to your heart and lungs. Your muscles contract and demand more oxygen, resulting in an increase in your heart rate, cardiac output and breathing rate. Blood flows faster through your arteries and veins and into the working muscles. Your blood temperature rises in preparation for activity and, as oxygen is released more quickly, the temperature of the muscles also increases. This process allows the muscles to use glucose to burn calories and exert energy for more strenuous exercise.

How: Your warm-up should be a shorter, less intense version of whatever activity you're about to engage in. For example, if you'll be walking briskly, your warm-up should be a five-minute, low-intensity (50 percent to 60 percent of your maximum heart rate) walk.

STRETCHING BASICS

After your warm-up, take a few minutes to stretch your major muscle groups, with a particular focus on the areas you are about to train. For example, a runner may focus on stretching their quadriceps, hip flexors, calves and thighs. Even if you don't exercise regularly, stretching three times a week can provide a variety of benefits.

Why: The American Council on Exercise provides these top 10 reasons people should take time to stretch before and after a workout:

1 To decrease muscle stiffness and increase range of motion, which may slow the degeneration of the joints.

2 To reduce the risk of injury. By increasing your range of motion and flexibility, you may decrease muscle resistance during various physical activities.

3 To reduce post-exercise strain and soreness. A hard workout often has a shortening and tightening effect on the muscles, which can be relieved by stretching.

4 To improve posture. By stretching the upper-body and back muscles, you improve the alignment of your back, reduce discomfort and improve your posture.

5 To reduce the risk of low back pain. By increasing flexibility in the hamstrings, hip flexors and the muscles attached to the pelvis, you can relieve stress on the lumbar spine, which in turn can reduce the risk of low back pain.

6 To allow the muscles to relax. Chronically tense muscles tend to cut off their own circulation, resulting in a lack of oxygen and essential nutrients.

7 To improve physical performance. Stretching promotes flexibility, and a flexible joint requires less energy to move through a wider range of motion, thereby maximizing performance.

8 To prepare the body for the strain of exercise. Stretching loosens the muscles and builds resistance to the impact they are about to undergo.

9 To promote circulation. Your muscles depend on blood flow for nourishment and to flush out waste products. Stretching increases blood supply and improves the circulation of blood throughout the entire body.

10 To help relieve stress. One of the biggest symptoms of stress is tension and tightness in the neck and back, which can be reduced through stretching.

How: Each stretch should last about 30 seconds. Studies of the long-term effects of stretching on range of motion have shown that people who stretch for 30 seconds per muscle each day increase their range of motion significantly more than those who stretch 15 seconds per muscle each day. In general, there is little benefit to stretches that last as long as 60 seconds.

A word of caution: Bouncing while you stretch can cause microtears (small tears that result in scar tissue) in the muscle, which increases the likelihood of pain. Most experts believe stretching should not be a painful experience - if you're in pain, you've pushed too far. Try to stretch a little further with each stretch, but only to the point of mild tension. Your movements and your breathing should be slow, rhythmic and controlled.

THE COOLDOWN

Every workout should end with a brief cooldown and stretching routine. Research indicates that if you only have time to stretch once, you should make time *after* your workout, when your muscles are warm and responsive to stretching.

Why: If you've done your workout right, your heart rate will be at its peak and you'll feel warm and tired. The cooldown lets your heart transition to its normal rate and lets your muscles adjust out of their contracted state, which can help prevent strain and soreness.

How: As with the warm-up, the cooldown should be a low-intensity, five-minute version of the activity you just completed, followed by a series of stretching exercises.

Failing to stretch after physical activity can cause injuries, but stretching with bad form also is a leading cause of injuries. Be sure to do it right. If you have a muscle condition, prior injury, or particular area of

sensitivity or soreness, you should consult with your doctor about creating a specialized stretching routine. If you are an athlete or an avid runner, your doctor can guide you through more vigorous types of stretching, including ballistic, dynamic, active and isometric stretching.

Now that you know the benefits of warming up, cooling down and regular stretching, never again underestimate the importance of the first and last few minutes of your workout. Rather than shocking your system with sudden changes and strains, take a few minutes to let your body adjust to the physical demands you're about to place on it.

BASIC STRETCHING EXERCISES

Woman stretching her legs. - Copyright â Stock Photo / Register Mark **Chest and Shoulders**
Stand with your hands clasped together behind your back and your arms straight. Raise your hands toward the ceiling as far as you can comfortably.

Standing Quadriceps Stretch
In a standing position, hold onto a chair or wall with one arm for balance. With your free hand, grab the top of your right foot and bend your knee, bringing the foot toward the buttocks, with your knee pointing straight at the floor. Switch sides and repeat.

Hip/Glute Stretch
Lie flat on the floor and cross your left foot over your right knee. Clasp your hands behind your right thigh and gently pull the leg in toward you, keeping your upper body relaxed. Switch legs and repeat.

Hamstring Stretch
Lie flat on the floor with your knees bent and feet touching the floor. Raise one leg straight in the air and slowly pull it toward you, clasping the thigh, calf or ankle. Keep the knee slightly bent. Switch legs and repeat.

Inner Thigh
Sitting on the floor, place the soles of your feet together and bring them about two feet away from your body. Gently push your knees toward the floor and slowly bend forward.

Spine Twist
Lie flat on the floor and place your right foot on your left knee. Using your left hand, gently pull your right

knee toward the floor, twisting your spine and keeping your right arm straight out, with your hips and shoulders on the floor. Switch sides and repeat.

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