

Improve Your Flexibility
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Flexibility, the thorn in every athlete's training program, is the most commonly left out aspect of preparation. We build endurance, intensity and strength workouts into our plan, but often leave out flexibility training; usually because we "run out of time". This effects triathletes even more than runners because increased training leaves less free time, and training different disciplines requires stretching more body parts.

Studies on "flexibility training" or "stretching" have provided mixed conclusions. Some studies prove no benefits to reducing the risk of injury, while others do show benefit. What has been proven is that the longer a muscle is, the larger the force production capacity over a greater range of motion. This is particularly beneficial for endurance athletes.

Another benefit to increasing one's flexibility is economy of effort. For example, our thigh muscles contain opposing muscle groups, the hamstrings, which flex (bend) the knee, and the quadriceps, which extend (straighten) the knee. During our running gait, each muscle group works harder at some points in our cycle than others, depending on whether we want to flex or extend the knee. If we want to extend the knee, the quadriceps muscle group works against any resistance that the hamstrings provide. The tighter the hamstrings, the greater the resistance, so increasing their flexibility will decrease the effort necessary from the quadriceps muscle group.

So let's say that even though it is not New Years, we resolve to increase our flexibility. There is a lot of information out there - that stretching a cold muscle is bad for you, not to bounce when stretching, and so on... What is the best way to stretch?

Whether or not a muscle is "cold" depends on the muscle or muscle group, and the amount of movement or blood flow it has been exposed to prior to beginning your stretch. This is particularly important for you sick-o's who attend master's swim workouts at 5 a.m. or run immediately after getting out of bed before the sun comes up! This has turned into "never stretch before exercise, only after." While stretching after you exercise is more important, especially for time-crunched Americans, stretching before and after will have added benefits.

Stretching is best done on a "warm" muscle; but what is a warm muscle versus a cold muscle? As we start to use a muscle, its oxygen requirements go up, so the body sends more blood flow (containing oxygen) into the muscle. This causes the temperature inside the muscle to go up and it becomes "warmer". When starting to warm up a muscle or group of muscles, start with a comfortable range of motion. Avoid movements towards the end range of motion for the joint those muscles move. For example, a breast stroke warm up prior to freestyle stroking, or running at a slower pace to begin your run (a faster

pace requires increased hip/leg ranges of motion). Once you break into a sweat, you know you are warmed up sufficiently for stretching.

A good approach is to do an 8 to 10 minute "warm-up" (slow jog, breast stroke, easy bike spin), then stretch for a few minutes. Pay particular attention to those muscle groups most stressed by the workout to follow.

Applying a stretch to a muscle group should be done slowly to a COMFORTABLE STRETCH! It should not hurt. I've had many patients say that stretching hurts more than the workout itself, or my favorite, "stretching, that's for limber people!" The stretch should be held for 30 to 60 seconds. Bouncing during a stretch is called ballistic stretching and has been proven to increase flexibility. However, bouncing while stretching is not as safe and may stimulate a reflex loop in the muscle, causing it to become tighter.

Following exercise, an area should be stretched with sustained stretches repeated 3 to 5 times per muscle group.

For problem areas, we recommend stretching one repetition; with a 30 to 60 second hold time, every 60 to 90 minutes throughout the day. This will keep the muscle loose throughout the day instead of letting it tighten up with prolonged sitting or standing while at work. Pay particular attention to the quadriceps group for "runner's knee" and the calves for plantar fasciitis sufferers.

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What about Yoga?

Yoga is a series of poses that create functional flexibility. Functional training is a buzzword throughout the exercise world that describes how certain training regimes help in real life scenarios. Yoga takes you through a series of stretches that not only produce lengthening of the muscles, but also require balance and stability provided by other muscle groups crossing the same joints. This flexibility and concomitant (at the same time) neural integration produces a better functioning joint, which will carry over to activities like running. I recommend at least twice a week as enough stimulus to create gains in flexibility. If you can only attend one class per week, buy a yoga video to do your second session at home. Try to attend a few classes first, so you learn the correct form for each pose. Yoga should be used to supplement the stretches you perform during your weekly exercise routine.

There are many resources available including books, videos and DVDs that show proper stretching techniques for a variety of sports or just general flexibility. The main thing is to budget the time for stretching and forming good habits to maintain your flexibility, which naturally declines with age.