



Stretching: General Information

(a) Stretching What?

We Do Not Stretch Joints

Stretching increases the range of motion of joints. But I want to make something absolutely clear. Stretching is *not* designed to stretch joints. In fact unless there are adhesions in the joint it is not common for the joints themselves to limit the range of motion. If you doubt that, try these simple tests. Place yourself in the following body positions (Figures 1 to 3 below).

Figure 1



Figure 2



Figure 3



In Figure 1 of the deep lunge above, the angle between the thighs is 180° . The joint is not stopping the formation of the angle. There is no limitation to joint range. But if you try to do a full split you won't be able to attain the angle of 180° between the thighs, because *something* is limiting the full expression of the length of the hamstring. It is just *not* the joint.

Similarly, in Figures 2 & 3 above, showing the foot resting on the back of a chair, the leg can clearly maintain a right angle with the trunk of the body. But if you try to do a side split you won't be able to because something is limiting the full expression of the length of the adductors. Again, it is *not* the joint.

We Do Not Stretch Muscles

In fact there is very little lengthening of the muscles as a result of stretching exercises. Referring again to Figures 1 to 3 on the previous page it is pretty clear that there is nothing wrong with the length of the muscle in relation to the joint.

So What is Changing?

In fact two nerve receptors which stimulate muscle reflexes are being reprogrammed; specifically the *Golgi Tendon Organ* (which tells a muscle to relax) and the *Muscle Spindle* (which tells a muscle to contract). As you continue to practice, your body learns that a longer muscle length in the “stretched” position is not dangerous at all. In fact it is quite safe.

However because the terms “stretch” and “muscle lengthening” are commonly used we will stick with the convention.

(b) When to Stretch and How to Do It

Warm-Up Stretches

Warm-up stretches are part of the warm-up process, and prepare the muscles for an injury free workout.

Method

Take the position of the stretch and relax into it. No serious muscle contraction is involved. *Relaxation* is the key. Hold each stretch for approximately 30 seconds, gradually relaxing over the period of the stretch.

Muscle Lengthening Stretches

Long term reduction to the risk of an injury which may occur due to an unforeseen event *outside* of the training environment is best achieved by maximising improvements in muscle length. And muscles respond better to stretch training that has a purpose of lengthening them when they are *warm*. These stretches are therefore to be performed *after* the strength training section of a workout. The idea is to *work* the muscle in the *stretched* position.

Method

This method works best if stretches are performed two to three times per week.

1. Take the position of the stretch and relax into it.
 - a. No serious muscle contraction is involved at this stage.
 - b. Wait for however long it takes for the muscle to have *completely* relaxed in this stretched position.
2. Once at maximum stretch, contract against the stretch at about 50% strength and hold for 5 seconds.
3. Relax once more. A greater degree of stretch will be achieved.
4. Repeat steps 2 and 3 about 5 to 6 times. Each contraction followed by relaxation will allow greater stretch, but after 5 to 6 repeats the maximum stretch attainable using this contract-relax technique will have been achieved.
5. Now is the time to work the muscle *hard*, so it *strengthens* in the *lengthened* position. Contract against the stretch at *maximum force* and hold for *at least* 30 seconds. Hold for as long as possible. This retrains the muscle spindle reflex to accept that it is natural and safe for the muscle to be in this lengthened position.
6. Finally, relax and go as deeply into the stretch as possible.