



2020

Understanding Health & Fitness Education Series 3b

Details on Stretching - adapted from NHS

Different types of stretches

Static stretch: stretching a muscle to the point of mild discomfort and holding that position, typically for at least 30 seconds or longer.

Proprioceptive neuromuscular facilitation (PNF): methods vary, but typically PNF involves holding a stretch while contracting and relaxing the muscle.

Dynamic stretch: performing gentle repetitive movements, such as arm swings, where one gradually increases the range of motion of the movement, but always remains within the normal range of motion.

Ballistic or bouncing stretches: involves going into a stretch and performing bouncing or jerking movements to increase range of motion.

Most of the research on stretching has focused on static stretching; there is less evidence on other forms.

THE FIRST THREE ARE ALL CONSIDERED SAFE AND EFFECTIVE WHILE BALLISTIC STRETCHING IS NOT RECOMMENDED.

What happens when we stretch?

Regular stretching is thought to increase flexibility, both by making muscles more supple and by retraining the nervous system to tolerate stretching further. Flexibility from regular stretching gradually disappears once you stop stretching – some say within weeks and others within hours therefore it is typically recommended that you stretch daily or most days of the week. It is unclear what happens from a stretch it could be due to physical changes in the muscles that control those joints, or just a greater tolerance to stretching or a combination of them both.

How much flexibility do I need?

It highly depends on your activity. I tell people that you should try to have a normal and balanced amount of flexibility. In other words your right side should be the same as your left and that you should not try to achieve hypermobility because there is some suggestion that it may lead to instability. In fact Stuart McGill, a leader in back care, and many renowned physical therapist do not recommend a high degree of flexibility to the spine. Their rationale is that joints need a degree of stability, especially the spine. Also there is a difference in sport and job demands. The flexibility demands of a gymnast or a ballet dancer are clearly different to those of a runner. I feel the most important is to have both sides of your body to be the same in terms of flexibility. Second you should try to possess enough flexibility that you have proper posture and movement patterns. Example if you have rounded shoulders then your pectoral muscles including the subscapularis should be stretched. If you have a very tight gastrocnemius group it would be prudent to increase it to where it was normal so that it would not interfere with running or squatting mechanics. This does not mean that the group has to be hyperflexible it should possess a normal amount of motion.

Stretching Controversy

Does stretching decrease strength?

Although static stretching is part of some pre-exercise or sport routines, a study in 2013 indicated that it weakens muscles. That is why many recommend active dynamic warm-up before exercise in place of static stretching, which I highly recommend. The authors of this type of research suggest that to generate power during exercise, the muscles and tendons store and release energy like a spring. Too much flexibility may reduce the muscle's natural spring, which may be detrimental for activities involving running, jumping and sudden changes in direction, such as running, football or basketball. However, too little flexibility may increase the risk of muscle strain injury, as the muscles are unable to lengthen and absorb this energy. Other studies suggest that the impact of static stretching on strength and power are short lived. If worried about performance perform dynamic warm ups before your sport and static stretches not to the extreme after. Again, most sports require a normal degree of range of motion.

[Research suggests that stretching before exercise makes your muscles weaker and slower \(PDF, 516kb\)](#). A lead author on [one of the largest reviews on pre-performance stretching \(PDF, 307kb\)](#), believes the reduction in performance from pre-exercise stretching has been overstated. "It is likely that durations of stretch used in the warm-up routines of most recreational exercisers produce negligible and transient reductions in strength," he says. I agree with his point.

Does stretching before exercising reduce the risk of injury?

The [evidence strongly suggests that pre-exercise stretching does not reduce the risk of injury \(PDF, 516kb\)](#). Professor Rob Herbert, Senior Principal Researcher Fellow with Neuroscience Research Australia, took part in the 3 largest randomized trials on the effects of stretching. They all concluded that stretching had little or no beneficial effect on reduction in injury risk. [The most recent and largest of the three studies](#) found "a hint" of an effect on reducing injuries like ligament tears, muscle tears, strains and sprains. But Prof Herbert cautioned, "If stretching does cut your odds of one of these types of injuries, it's by only a very small amount." That being said it would be prudent to stretch areas to within normal lengths in your body for possible injury prevention but more so for balanced posture and pain reduction.

Does stretching reduce soreness?

There is no evidence that stretching helps to reduce or prevent a type of pain that can show up a day or two after exercising – also called [delayed onset muscle soreness \(DOMS\)](#).

[A 2011 review by Prof Herbert \(509kb\)](#) found that "muscle stretching, whether conducted before, after, or before and after exercise, does not produce clinically important reductions in delayed onset muscle soreness in healthy adults". Stretching does cause a inhibition of pain to an area that may be short lived in some cases. Stretching is often the first and most common modality in physical therapy.

Should I stretch before exercising?

Your decision to stretch or not to stretch should be based on what you want to achieve. To reduce injury, stretching before exercise is not helpful. Time better spent by warming up your muscles with light aerobic movements and gradually increasing their intensity. If your objective is to increase your range of motion or if you are doing a sport/exercise like dance or gymnastics or figure skating then you should stretch. Stretching before exercise will not show a noticeable decrement in most exercisers. I like using it with clients to help them understand their body and if there are possible issues in a range of motion. Sometimes you do not know if a problem exists unless you take a muscle a range of motion.

How should I warm up?

The purpose of warming up is to prepare mentally and physically for your chosen activity. A typical warm up will take at least 10 minutes and involve light aerobic movements and some dynamic stretching that mimics the movements of the activity you're about to perform. This process will raise your heart rate and increase the blood flow to your muscles, thereby warming them up. There is suggestion that a warm up also activates the nerve signals to your muscles, which results in faster reaction times.

Should I stretch after exercising?

The best time to stretch is when the muscles are warm and pliable. This could be during a class or after exercising. Stretching may also help signal if you did too much during exercise.

