

The Case for Stretching

Despite conflicting evidence on its benefits, we think neglecting to stretch is a bad idea! The trouble is, because many of us dislike it, we don't spend enough time or effort on stretching and then it doesn't work – reinforcing our belief that it's a waste of time. However, doing it properly may result in a very different experience. To understand why, you need to know a little about what stretching does, what happens when you stretch? When you first take, say, your calf muscle, into a stretch, muscle “spindles” located among the muscle fibers detect a change in the muscle's length and report back to the spinal cord. The nervous system sends a message to the nerves governing these fibers to tell the muscle to contract, in order to take it out of the stretched position. This is known as the “stretch reflex.”

However, if the stretch is maintained for more than a few seconds, another, more sophisticated receptor, located where the muscle attaches to the tendon and called a Golgi tendon organ, comes into play. This receptor can detect not only changes in the length of the muscle but also in the amount of tension it holds. So, hold that stretch and the Golgi tendon organ, noting that the muscle fibers are contracting and lengthening, triggers a reflex relaxation of the muscle (via a process called autogenic inhibition) to protect the muscle from damage. This is why easing into a stretch slowly and then holding it allows the muscle to relax and lengthen. Over time, stretching can increase the length of the muscle, or at least maintain it at – or restore it to – its optimal functioning length. But why does this matter? Well, skating, as you probably realize, involves repeated contractions of specific muscles over a long period of time. This can leave the muscle fibers shorter in length than normal, and misaligned (like hair that needs combing). Stretching is the process we use to restore muscles to their resting length and realign these fibers. Without it, we risk them shortening permanently (by a process called adaptive shortening) and, in doing so, altering the function of the joints they are connected to. For example, if the hip flexors (which work very hard in skating) tighten and shorten, they pull the front of the pelvis down and throw the lower back out of alignment, which can have all sorts of knock-on effects.

What's more, flexibility naturally declines as we age if we don't maintain it – and changes take place in muscle fibers and connective tissue. Collagen fibers within the connective tissue thicken and, without regular stretching, get stiffer. Soft tissue becomes more dehydrated, decreasing joint lubrication and causing creakiness. One study concluded that stiffness and lack of flexibility were more a result of lack of use than of age per se, while another – on ageing athletes – found that stride length declined primarily as a result of decreased range of motion at the hips and knees. Range of motion at the knees during skating decreased by 33 percent and at the hips by 38 percent between the ages of 35 and 90. So, while we can't categorically say that stretching will reduce injury risk or improve performance, it will help to restore muscles to their resting length after the continual contraction involved in skating, help to maintain range of motion in the joints and prevent tightness and imbalances between muscle groups.

Six more reasons to stretch

- A flexible joint uses less energy to work through its full range of motion, so good flexibility will enable you to skate more efficiently.
- Increased supply of blood and nutrients to joint structures helps keep them healthy and mobile.
- Stretching improves neuromuscular coordination (the nerve impulses that travel from the body to the brain and back).
- Muscular balance, body awareness and posture are enhanced.
- Stretching helps to flush out metabolic waste products post-workout.
- It gives you time out to relax and reflect on your session.

When to do it

When – and how often – should you stretch? Ideally every day, suggests research in the *Clinical Journal of Sports Medicine*, which found increases in both muscle force and power in subjects who stretched daily for several weeks. The benefits ranged from 2 to 5 percent improvement, which, they estimated, could make the difference to an elite athlete between winning a gold and not making the podium at all –small, but worthwhile, gains. Another study showed that skating speed improved as a result of regular stretching when it was not performed immediately prior to exercise. Even more important than the possibility of shaving a few seconds off your time is the possible reduction in injury risk. While it is now widely believed that there is no evidence that stretching reduces injury risk, this refers to stretching pre-workout, as part of a warm-up, not as a separate regular practice. Three studies have found a significant decrease in injury risk as a result of regular stretching – or, to put it more accurately, as a result of good flexibility.