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Static Stretching: Is it Beneficial to Use Pre-Workout?

For many years runners have used a warm-up routine that involves static stretching, but it is becoming increasingly popular amongst some members of the running community to stop using this form of stretching. Static stretching is best described as moving a limb into a tolerated, stretched position and maintaining that position for a period of time usually somewhere between 15-60 seconds. Studies have been done that are contradicting the ideas of many believers in static stretching as well as introducing new findings that have negative effects upon athletic performance. These effects are wide ranging with short, quick, explosive movements such as those seen in football, weightlifting and sprint track events being hindered as well as endurance performances like distance running and cycling suffering negative effects due to static stretching. Many elite athletes are gravitating away from a warm-up routine that involves static stretching and this is beginning to trickle down into the prep and recreational athlete as well. There are more productive ways to prepare the body for strenuous athletic activity, and endurance athletes especially should look to use them instead of traditional static stretching. Static stretching should not occur before a runner works out because it does not decrease the chance for injury, has negative effects upon running economy, and decreases muscle power.

Proponents of static stretching have a number of reasons to argue for keeping it in their pre-workout routine. They argue that if a runner were to switch from static to dynamic stretching, that he or she could quickly and easily become injured. This is true if a runner were to switch rapidly from static to dynamic. The change in any exercise routine should be gradual to avoid injury. Believers in static stretching also argue that being more flexible is in a runner’s best interest. Being more flexible can help a person become less susceptible to injury, but this needs to be done post workout not before you run. No one wants to be seriously inflexible because “limited flexibility has been show to decrease functional ability and predispose a person to injury” (Carrand, Gallagher, and Vardiman). Many runners will also argue that stretching makes them feel better before they run, and this psychological benefit is important. People would do stretches thinking that if they had good range of motion they would feel good and not get injured (“Should you stretch”). Just because something feels good doesn’t mean it is good. This logic would have humans putting many harmful substances into their bodies just because the immediate effect “feels good”. The effects of static stretching that will occur in the middle to the end of the workout or race need to be considered and not what you feel as the stretch is taking place. Those runners who refuse to remove static stretching from their routine need to be open to when in the routine it takes place. Static stretching can be good when used after workout just not before. There are too many negative effects when it is used before running.

The number one argument used by proponents of static stretching is that it will help prevent injuries in runners. This has been proven to be false. The rate at which injuries occur in runners is the same for runners who use static stretching and those who do not. A test was done by USA Track & Field that involved 1400 runners from age 13 to 65. Many runners were hesitant to participate in the study because of their affinity for static stretching. “It took researchers more than two years to coax enough runners to join and complete the study” because they were so committed to static stretching (Reynolds). They were divided into two groups: those that used static stretching before each workout and those who did not use static stretching before the workout. All other aspects of the warm-up routine were the same for both groups. The volunteers in the experiment followed a workout regimen for a 3 month period. During that time an equal number of injuries occurred in both groups. Static stretching had proved to be a wash in terms of protecting against injury; it neither prevented nor induced injury when compared to not stretching before running (“Phys Ed”). Even though a runner may feel more flexible and therefore think they will be less susceptible to injury, those thoughts are flawed because injuries are occurring at the same rate regardless of whether you static stretch before running or not. There is an alternative to static stretching that can be used in the warm-up process. Many elite athletes have moved to a dynamic stretching routine. Dynamic stretching involves exercises that increase the joints range of motion via constant movement. Injuries can still occur when using dynamic stretching during warm-up, but it should be used instead of static stretching because there are many negative effects upon a runner when static stretching is used.

Static stretching has been show to decrease athletic performance due to a decrease in muscle power. Research has shown that when this type of stretching is used it lessens jumpers’ heights and sprinters’ speeds. When you statically stretch a muscle, especially when they last 30 seconds or longer, muscles become substantially less strong. A study done at the University of Zagreb in Croatia “determined that muscle power decreases by about 2 percent after stretching” (“Reasons”). This may seem like a small number to debate, but think about all the athletic competitions that come down to the hundredth of a second or the quarter of an inch. If static stretching might cost you those winning increments it makes sense not to use it. Explosive muscular performance also drops off when it is used. Lifting weights, vertical jumping, coming out of starting blocks, and a tennis racket or bat swing are all affected negatively when static stretching occurs beforehand. Another study was done by the University of Zagreb with weightlifters performing squats both with and without static stretching. The results were a decrease of “8.3% percent less weight after the static stretching” (“Reasons”). Both studies show that when you loosen the muscles and the tendons that accompany them you make them less able to store energy and they are less able to spring. The concept is similar to a rubber band that has been stretched repeatedly. Whether you are running sprints or distance, a runner should use dynamic stretching instead of static stretching during their warm-up so that there is no decrease in muscle power which would in turn decrease performance.

The most significant reason for runners who train and race distance events to not use static stretching is that it will reduce the efficiency of your muscles. They will not be able to run as far, and they will spend more energy doing it than is required. “When runners stretched, their average running distance was 3.4 percent less than when they ran without stretching” (“Stretching”). Even though less distance was covered by the athletes that used stretching, the energy expenditure was increased compared to the group who did not use it. Research has shown that when endurance runners use static stretching they are decreasing the amount of energy that muscles have stored, and being able to fully utilize stored energy is one of the keys to success for a distance runner.

It will be difficult for runners who have used static stretching for a long time to break away from it because they have thought for so long that it is beneficial to them. Modern research is showing that not to be true. Using static stretching as part of your pre-workout or race routine is less efficient, reduces your muscular power, and will not help you when it comes to runner related injuries. A dynamic warm-up approach is the better option. It adequately prepares the body for vigorous running activity without any of the negative effects that static stretching provides.

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