

To Stretch or Not to Stretch



Athletes commonly perform static stretching as part of a warm-up routine before training or competitions with the belief that it will improve subsequent performance and reduce the risk of injury. However, these beliefs have little scientific support.

In fact, there is research evidence that suggest static stretching can acutely impair performance, thus bringing into question its effectiveness as a component of the warm-up routine.

Does Static Stretching Improve Performance?

In the last decade, a considerable amount of research has been conducted regarding the effects of static stretching. It has been proven that static stretching has detrimental effects on these subsequent actions: jumping, sprinting, reaction time, balance, maximal strength and strength endurance.

The reasons for performance impairment due to static stretching are not yet clear but are believed to be related to muscle damage, reduced muscle-tendon stiffness and/or reduced neural activation of muscles.

Awareness of the potential negative impact of static stretching on performance has led some coaches to eliminate static stretching from their warm-up protocol. Instead, they replace it with dynamic stretching exercises such as butt kicks, arm/leg swings and hurdle mobility drills which have been scientifically proven to improve subsequent performance.

Where Does Static Stretching Come In?

Reviews of scientific research that looked at the relationships between pre-exercise static stretching and injury rates have concluded that static stretching immediately prior to exercise does not reduce the injury risk. Therefore, as opposed to the traditional beliefs, performing static stretching before training or competition appears to have no benefits in terms of improving performance and preventing injuries.

Static stretching however, should not be completely discarded from an overall training/conditioning routine because there is some evidence that static stretching at other times such as post-workout may indeed prevent injuries. Also, static stretching is an effective way of increasing flexibility, which is an important attribute in sports such as gymnastics and swimming that require a great range of motion in the joints.

Take Home Message

Based on the scientific data currently available, performing static stretching before training or competition as part of a warm-up routine is **not recommended** unless it is to reduce injury risk or improve flexibility.

A preferred warm-up protocol would involve general aerobic exercises such as jogging and cycling, dynamic stretching exercises and sport-specific skill practice.

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