

WELLNESS UPDATE 2007, #2

PRE-COMPETITION WARM-UPS: IMPORTANCE AND TYPES

Amber Augustine, DPT, Physiotherapy Associates, Aspen Athletic Club, 6103 SE 14th Street, Des Moines, IA - amber.augustine@stryker.com

Many people are aware that before any athletic competition or practice, an effective warm-up needs to be completed. Most people, however, remain unsure of the importance of a warm-up session and the best type of warm-up.

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1. Increasing blood flow to the extremities, which allows the muscle to increase its temperature,
2. Increasing the delivery of both oxygen and important nutrients to the muscles,
3. Preparing your individual muscles for stretching,
4. Preparing the heart for an increase in activity and increasing blood flow to the heart,
5. Increasing the sensitivity of the nerves as well as the speed of the nervous impulses.

The type of warm-up that an athlete or individual completes should be specific to the person's individual capabilities, the level of competition and any other environmental factors, such as temperature. There are three main types of warm-ups that may be completed.

Passive warm-up: Passive warm-up increases body temperature by external means, such as the use of a steam room. This type of warm-up is the least effective and least specific.

General warm-up: In general warm-up, the individual will increase their body temperature by using non-specific body movements. In this warm-up, there would be no difference in the warm-up that a hockey player would complete versus that of a golfer. The warm-up would just include generic motions, stretching exercises, etc. While this type of warm-up is more effective than the passive warm-up, it still provides no specificity to the individual athlete and/or sport to be completed.

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Specific warm-up: Specific warm-up is the most effective type of warmup. In specific warm-ups the individual will increase their body temperature by using specific body parts and specific movements that are found in their sport or activity. This is the best option of warm-up as it provides a rehearsal of the activity or sport to be completed. For example, most sports would include running/sprinting, therefore warming up with a slow jog would be appropriate. As every sport is different and includes different components, the individual warm-up will be different. While a tennis player may warm up with lower intensity serves or swings, a football player might warm up with drills focusing on coming off the line of scrimmage. The most important thing for any coach, team or parent to remember is that the warm-up should try to mimic the moves or specific skills that the sport entails, but be in slower, less intense manner in order for the athlete to achieve the physiological benefits of a warm up that are listed above.

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Another key portion of the warm-up phase is stretching, which can often be confusing as research often changes as to which are the best way to stretch. There are three main types of stretches:

Ballistic stretches: Ballistic stretches use momentum, or bouncing, in order to stretch a muscle. This type of stretching is not useful and can often cause injury because it does not allow the muscle to adjust, and relax in, the stretched position.

Passive stretches: Passive stretching is when a stretch is held for a prolonged period of time (usually 20 to 30 seconds). The body part being stretched is often held in place with another body part or possibly the assistance of a partner. This type of stretching is most beneficial when used for the cool down portion of practice or competition as it will help to reduce muscle fatigue and soreness.

Research indicates that the most effective type of stretching to be completed during warm-up is the dynamic stretching because it has been shown to improve performance, such as power and agility.

Dynamic stretches: Dynamic stretching involves moving parts of the body slowly, while gradually increasing range of motion, speed of movement or both. It is not to be confused with ballistic stretching which involves more jerky movements. Dynamic stretching consists of controlled leg and arm swings/motions that take to person to the limits of their range of motion. Research indicates that the most effective type of stretching to be completed during warm-up is the dynamic stretching because it has been shown to improve performance, such as power and agility. One study concluded that the improved performance after a dynamic program was due to the rehearsal of specific movement patterns, which helped to increase the coordination of the athlete in their given sport.

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No matter if one chooses general or specific warm-up, it has been very well documented by research that warm-up is a key element to be done before all exercise sessions, practices, athletic events, etc. The benefits that follow an appropriate warm-up will leave the athlete both physically and emotionally prepared to perform at the highest level possible.

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Physiotherapy Associates are the sports medicine providers for the Boys' State Basketball Tournament.