

## Why Warm Up before working out?

<http://www.fitnesspros.com/articles/warmingup.html>

1. Proper warm-up helps prevent injuries. You need to sweat a little, but don't get fatigued by the warm-up.
2. Increases the removal of lactic acid accumulated during previous workouts.
3. Increases the efficiency of contracting muscles. Some light stretching is good to get limbered up.
4. Research suggests neuromuscular coordination is enhanced by warming up.
5. Improves coordination of individual exercises. (doing a warm-up set of an exercise before hitting the heavy weights)
6. Increases heart rate and speeds blood circulation.
7. Increases oxygen reserves to the muscles.

## The Importance of a Proper Warm-Up

[http://www.sparkpeople.com/community/ask\\_the\\_experts.asp?q=10](http://www.sparkpeople.com/community/ask_the_experts.asp?q=10)

A warm up is the act of preparing for an athletic event or workout by exercising or practicing for a short time beforehand. Warming up helps reduce your risk of injury and the aches and pains that come with exercise. The physiological reason to warm up is to assist your circulatory system in pumping oxygen-rich blood to your working muscles. The idea is to increase circulation throughout the body in a gradual manner. A proper warm up safely prepares the body for the increased demands of exercise. Cold muscles do not absorb shock or impact as well, and are more susceptible to injury.

A warm-up helps you prepare both mentally and physically for exercise and reduces the chance of injury. During a warm-up, any injury or illness you have can often be recognized, and further injury prevented. Other benefits of a proper warm up include:

- Increased movement of blood through your tissues, making the muscles more pliable.
- Increased delivery of oxygen and nutrients to your muscles. This prevents you from getting out of breath early or too easily.
- Prepares your muscles for stretching
- Prepares your heart for an increase in activity, preventing a rapid increase in blood pressure
- Prepares you mentally for the upcoming exercise
- Primes your nerve-to-muscle pathways to be ready for exercise
- Improved coordination and reaction times

## The Warm Up - More important than you thought

<http://sportsmedicine.about.com/cs/injuryprevention/a/aa071003a.htm>

Most athletes perform some type of regular warm up and cool down during training and racing. A proper warm up can increase the blood flow to the working muscle which results in decreased muscle stiffness, less risk of injury and improved performance. Additional benefits of warming up include physiological and psychological preparation.

## Benefits of a Proper Warm Up:

- Increased Muscle Temperature - The temperature increases within muscles that are used during a warm up routine. A warmed muscle both contracts more forcefully and relaxes more quickly. In this way both speed and strength can be enhanced. Also, the probability of overstretching a muscle and causing injury is far less.
- Increased Body Temperature - This improves muscle elasticity, also reducing the risk of strains and pulls.
- Blood Vessels Dilate - This reduces the resistance to blood flow and lower stress on the heart.
- Improve Efficient Cooling - By activating the heat-dissipation mechanisms in the body (efficient sweating) an athlete can cool efficiently and help prevent overheating early in the event or race.
- Increased Blood Temperature - The temperature of blood increases as it travels through the muscles, and as blood temperature rises, the amount of oxygen it can hold becomes reduced. This means a slightly greater volume of oxygen is made available to the working muscles, enhancing endurance and performance.
- Improved Range of Motion - The range of motion around a joint is increased.
- Hormonal Changes - Your body increases its production of various hormones responsible for regulating energy production. During warm up this balance of hormones makes more carbohydrates and fatty acids available for energy production.
- Mental Preparation - The warm up is also a good time to mentally prepare for an event by clearing the mind, increasing focus, reviewing skills and strategy. Positive imagery can also relax the athlete and build concentration.