

# Cooling down

- how to optimise the restitution phase



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*Every form of training should end with a restitution phase. Unfortunately, this is very often a neglected part of training – especially when training alone. That is not how it ought to be!*

## Cooling down - why?

You should always end your training with very low intensity exercises. The phrase “cooling down” is used often, but in fact it would be more correct to express it as “restitution activity”, as they help keeping the muscle temperature.

The goal is to help you recuperate better from a hard training, so you are ready for the next training session.

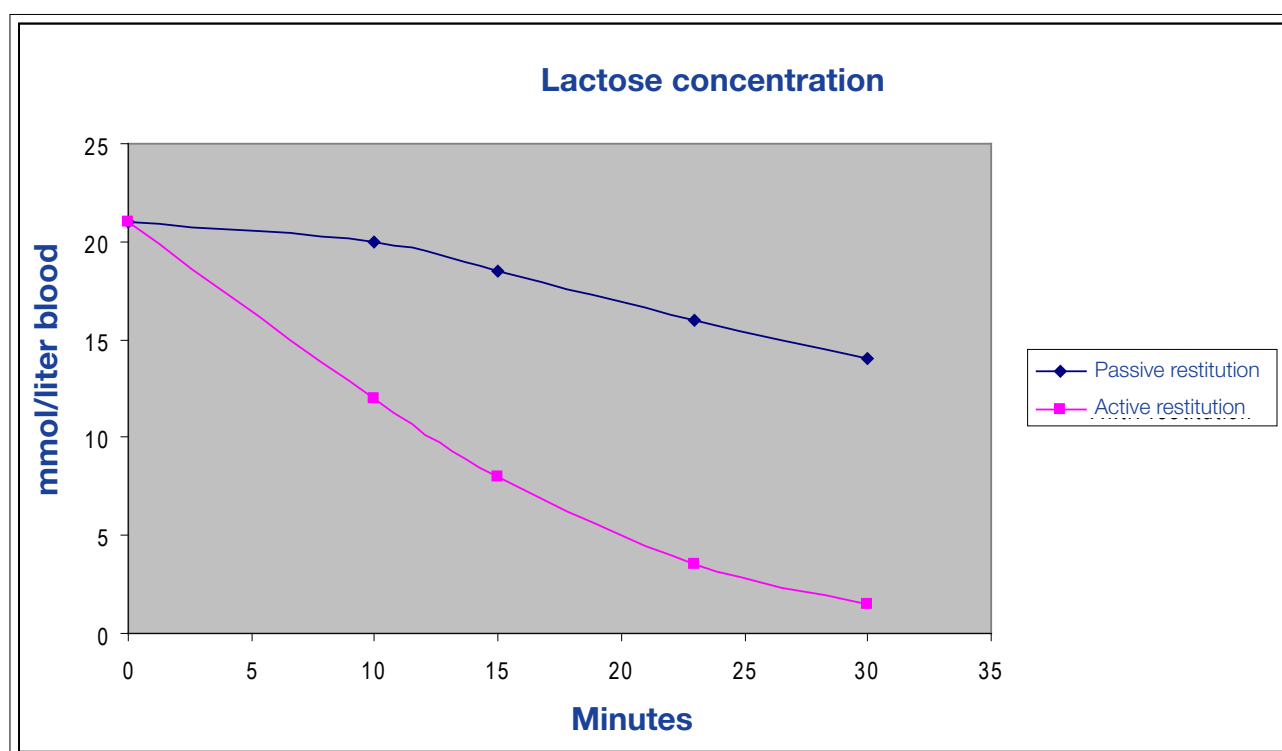
When you are training extensively, lactic acid is produced, which piles up in the muscles. There can also be small injuries in the muscle fibres, which can lead to soreness in the muscles the following days.

A lot of research shows has shown that restitution activities diminish soreness. This is probably because the blood flow in the muscles removes the waste products. Lactic acid, for example, is much better removed from the muscles when cooling down after exercise instead of doing nothing after exercise. A restitution activity can for example be a jog for 10 minutes or cycling at a low intensity (under 60% of the maximum intensity).

## Remember stretch exercises

The muscles are considerably shortened after training, so it is important to use some time on stretching them. If you do not stretch, the muscles will stay shortened, which leads to a reduced mobility.

If the mobility is reduced, the performance ability will be diminished in those situations where the muscles are in their extreme positions. The risk of injuries increases as well.



Lactic acid content in the blood after hard exercise followed by active restitution (jogging) and passive restitution. The lactic acid is removed much faster with active restitution, where the concentration is back to basic level 30 minutes after ending the hard training. (Michalsik & Bangsbo, 2002: 143)



**Maxim Recovery Bar** – this bar contains 15 g of protein per bar and 24 g of carbs. To refill your reserves it is important to use carbohydrates after exercise.

When you combine your carbohydrate intake with proteins, the uptake in your muscles will be accelerated.

## This is what science says

It is not scientifically proven that stretching reduces soreness. However, stretching does effect the receptors in muscles, nerves and ligaments, which thus can block chronic pain impulses to the central nervous system. Slow and calm stretching also results in relaxation of the muscles and nerves, which for example is meaningful for local injuries. Muscle soreness caused by unaccustomed eccentric exercise cannot be prevented by stretching.

## How to cool down

You should always end your training with light activity, which involves the same muscles that you have used during your training session. In addition, you should do stretching exercises for the muscles that you used most so they get the same length as they had before training. Hold the stretch position at least 30 seconds, as opposed to those stretching exercises you did when warming up (5-15 seconds).

Stretching can be done in several manners, but there are some general rules that you should follow. The stretching should take place in a peaceful environment with a suitable temperature and you should have plenty of time. And the muscles **HAVE TO BE** warm. It is important that you focus on relaxing, and that you use slow motions. These rules should be followed to tone down the tension on the muscles.

## REMEMBER, cooling down

- should be done after all training sessions
- should contain physical activity
- at a low intensity
- should contain stretching exercises
- should be done in comfortable circumstances

### References

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## PHYSIOLOGICAL EFFECTS OF COOLING DOWN

1. Reduced muscle soreness
2. Faster return to physical performance level