

## Why hypoxic-training?

Altitude training improves physical performance on four levels:

1) the body needs enough oxygen during your exercise and will provide more red blood cells. These red blood cells are responsible for the oxygen transport in your body. By increasing the hemoglobin concentration, there will be more oxygen transport.

2) the capillaries network grows. Capillaries are small blood vessels (capillaries) around the muscles where the blood is circulating. The larger the network, the easier the blood is transported into the muscles and the more oxygen the muscle cells will get.

3) changes are happening within the muscle cells. A mitochondrion is a small energy factory in muscle cells where ATP (energy) is produced. Hypoxic training promotes and facilitates the efficiency of their function; the easier ATP can be made, the faster the muscles get their energy and the less tired we'll become.

4) in addition to these changes, the whole body will deal more efficiently with the (lower) available oxygen. It improves the aerobic as anaerobic system in your body.

More and more athletes realize that altitude training has a positive impact on their sports performance in terms of strength, speed, endurance and recovery.

A good fitness program (based on a lactate test) in combination with a hypoxic training, can give an impressive boost. You can even combine this with sleeping in a hypoxic tent. By doing so, you can improve your fitness and get an aerobic level performance that is hardly accessible without this high altitude training.

Several studies have shown that with hypoxic training and sleeping on altitude, the maximal oxygen uptake (VO<sub>2</sub> max) and the aerobic tipping point, can improve by up to 10%.



## Hypoxic-training and acclimatization for mountaineers

Every year many people go on expedition to climb a high mountain. Some of these expeditions cost pretty much money such as Mount Everest. Many mountaineers must spend weeks in base camps to acclimatize and get used to the heights. But even spending much time on acclimatization in basecamp, with a good physical and mental condition, you still have the risk getting altitude sickness. Studies show that 80% of the people above 4000 meters will experience some form of altitude sickness. The best is to test your sensitivity for high altitude. In case you are sensible to the altitude, the more benefited you will have with a high altitude training program, months before your departure towards your mountain.

The risks of altitude sickness can be greatly reduced and controlled by the help of hypoxic training and pre-acclimatization period at home. You will need less acclimatization trips upon the mountain and your body will be better prepared than without.

Generally It will give you more changes for a successful expedition and less risk getting sick.

Personally, our experience in climbing 8000meter peaks has shown positive results: the benefit during 8000+ expeditions and we are aware of the possibilities that it brings.

If you are not capable to hire or buy this devices , than you can train this principle in the mountains if you live nearby. In case none of these things are available, then we can only recommend to spend more time in mountains before you start your expedition...

Have fun !



Stef Maginelle

7900m – departure from C4 Lhotse – without use supplemental oxygen and self-supported expedition ( no Sherpa guide/porters )