

FIGHTING TALK

IMPROVE YOUR COMBAT SKILLS

ALTITUDE TRAINING MASKS: ARE THEY WORTH IT?

BY MARCO MASTROROCCO
PHOTOGRAPHS BY BRIAN ROBERTS



TAUSEEF ASRI

With bigger promotions bringing more money into combat sports, fighters are training harder than ever to reap the benefits. Coaches are embracing sports science like never before to ensure their athletes peak at the right time.

Yet there is little science for them to draw upon. Unlike athletics, for example, where scientific tests have underpinned training for decades, serious research into combat sports is still in its infancy. Consequently, nobody really knows what works and what doesn't. Everything is a work in progress based on its application to other sports, and trial and error.

Conditioning "gurus" and equipment manufacturers are therefore able to make unproven statements about products. Adverts are based on complicated concepts the average man has little chance of questioning.

I recently undertook some research of my own on the effectiveness of training masks. Training masks are designed to allow people to practise hypoxic training—hypoxia being the term for restricted oxygen supply. The lack of oxygen is intended to force the body to work harder. Valves on the mask allow you to choose how difficult it is to breathe, which enables you to



experience training at altitude without having to haul yourself up a mountain.

ALTITUDE TRAINING

Studies have found that people who train at altitude in hypoxic conditions produce more red blood cells. Red blood cells carry oxygen from lungs to muscles. More red blood cells mean

more oxygen can be supplied, which means muscles are capable of working for longer. This potentially provides a major training advantage.

Tests showed that athletes sent to live and train at high altitudes actually got worse due to detraining, caused by a failure to adapt to altitude and sickness, which in turn led to



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decreased training intensity. In some cases the recovery process was affected too, leading to overtraining and loss of muscle mass.

In order to see a benefit, athletes had to be sent to low altitude to train and return to live at high altitude at the end of the day. Experts concluded that, for altitude training to work, athletes needed to live at a height of 2,200 m above sea level for four weeks. The effects of this kind of training would then last for between two to three weeks.

Of course, it's impossible for most people to do this so things like training masks and hyperbaric chambers have been created to simulate these conditions.

THE BENEFITS TO FIGHTING SPORTS

Considering the potential gains in other sports, you would assume altitude training could also benefit combat disciplines. After all, training masks have been created to simulate restricted oxygen conditions, giving muscles the chance to perform at a higher level for



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longer, and strengthen the lungs. Many fighters and coaches have gone out and bought these masks hoping to see these benefits, but do they actually work?

The short answer, in my opinion, is no. Sorry to ruin your dreams of a quick fix, but I'm here to provide information, not make a sale.

My friend, fitness coach Andrea

Malorgio, and I have looked into the claims made by the manufacturers, reading countless studies on the subject of altitude training. We have found that while some manufacturers claim masks can boost performance, studies suggest that only real altitude training can provide a significant performance boost. Even then only a

very select group of super-fit endurance athletes are likely to derive any benefit.

The Bohr effect regulates the release of oxygen to the body. It states that blood releases oxygen only when levels of carbon dioxide in muscles are higher than levels of oxygen. In unhealthy people, the Bohr effect is impaired, meaning less oxygen is available to begin with. Add in reduced oxygen supply and you're facing major health risks.

It has also been argued that the mask makes the lungs stronger. But the mask forces you to work with less oxygen, meaning you won't be able to train for as long or at such a high intensity, reducing the effectiveness of your workout.

For fighting disciplines, even if you were to practise real altitude training, any gains would be entirely offset by the hassle of hauling yourself up a mountain.

In my opinion, the only gains you are likely to see are purely psychological. A mask can allow you to experience situations you may normally only face in a fight, such as tiredness and impaired breathing caused by being in uncomfortable positions. Training in these conditions could lower stress levels before a fight, as you'll be confident in your ability to deal with them.

During my recent workshop on Merseyside, I had some athletes train in a mask. They found the lack of oxygen distressing but believed the stress it caused their lungs would make them stronger. Actually it only made them train slower. This highlighted to me how easily people can be led to believe something will work by reasoning that because it's more difficult, you are working harder.

A study by the Research Institute for Sport and Exercise Sciences at Liverpool's John Moores University summed things up for me. Testing whether intermittent hypoxic training



(basically the use of masks in interval training) provided a boost in aerobic and anaerobic performance, they found no difference between altitude and sea-level training outcomes over a four-week period.

To conclude then, I don't believe masks will provide any physical benefits. Be aware also that masks and altitude training of any kind could be detrimental to your health unless you are already an elite athlete. The only gain you'll see is in confidence through recreating situations you might face in the ring, when oxygen is limited because you are tired or you're in a position where airflow is restricted.

Mimicking these experiences in training will lead you to be more relaxed if they really happen, resulting in better focus and performance. **M&F**

Marco Mastrorocco is a strength & conditioning coach. He is a former pro fighter (WAKO) in the S.A.M Fragale (Pisa, Italy) who won 4 Italian titles and the Bronze medal at the European Championships (2004). He currently runs international seminars for ring sports and conditioning. Director GIFT-Academy (www.giftacademy.com) and Head of Performance for www.ultimateconditioningcoach.com.

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If you have any story ideas or questions for Marco, write to him at marco@weideruk.com.