



SciFeature: CVAC and the Future of Athletic Conditioning

by SciFighting News Desk - Aug 28, 2013 at 12:05 pm

As the leading authority on combat science, we here at SciFighting strive to shed light on all the latest technology that will impact the sport of mixed martial arts and the health of its athletes. It's with this ambition in mind that we bring you our latest SciFeature.

For decades, athletes have sought to mimic high altitude conditions during training in order to enhance their cardiovascular abilities. While devices like the Training Mask have made the bold claim of being able to increase lung capacity and oxygen efficiency, many such products have been met with incredulity due to the fact that they are incapable of replicating all the conditions that accompany true elevation. Instead, the user experiences additional resistance when taking a deep breath and restriction to the flow of oxygen. Luckily, clunky workout appliances are now a thing of the past.

Located in an unassuming office building in Newport Beach, California, Ascent CVAC is providing professional athletes and health-oriented individuals alike the opportunity to obtain all the health and fitness benefits associated with rigorous elevation training in just two hours a week, broken down into six twenty-minute sessions. Did I mention that you never have to break a sweat?

By encapsulating the user in a pressure-controlled chamber, CVAC pods (short for *cyclic variations in adaptive conditioning*) are able to rapidly adjust the level of air pressure being exerted in order to place a strain on the human body. A typical 20-minute session consists of hundreds of precipitous changes in

pressure as you climb all the way up to 22,500 feet before crashing back down to sea level. The process forces the body to adjust to these changes, in turn triggering a number of changes in the body all the way down to the cellular level. Proponents suggest regular use can lead to increased production of red blood cells, improved stamina, and reduction of inflammation and recovery times.

Such claims need to be substantiated, and Men's Journal was able to establish some legitimacy in an interview with University of California San Diego endocrinologist Dr. Karen Herbst. She stated that "The standard high-altitude tents that some athletes sleep in as a training aid simulate only one aspect of living at higher altitude: the reduced amount of oxygen the body absorbs. The CVAC, on the other hand, subjects the body to actual air-pressure changes, rhythmically squeezing and relaxing the whole human package – blood, organs, the works – the way an empty plastic water bottle with its cap screwed on collapses in on itself when the simulated altitude goes up and the pressure drops, and plumps back out on the descent when the pressure rises back to normal."

As a minor scientific correction to Dr. Karen Herbst's statement to Men's Journal the exact opposite happens with the changes in external air pressure relative to the plastic bottle. As the pressure around the sealed plastic water bottle increases the bottle becomes slightly more malleable while the opposite occurs as the pressure decreases. The principle of diffusion (the need for particles to occupy equidistant space from each other within a confined area) would result in the bottle becoming more rigid at high altitudes, expanding due to the pressure variance of the air in the bottle vs the air outside of the bottle. Simple physics but easily confused when one casually discusses the matter.

Professional mixed martial artists have caught on. Ascent CVAC boasts a number of current and former UFC fighters among its clientele, including Ian McCall, Fabricio Werdum, and Jake Ellenberger. They claim it helps them with an extra "boost" toward the end of hard rounds of sparring, and reduces the pain and swelling associated with frequent training. McCall has been one of the most outspoken proponents, discussing the treatment at length on the Joe Rogan Experience podcast.

We recently had the opportunity to meet with the President and CEO of Ascent CVAC, Heather Hiniker, and her wonderful staff to try the pods out for ourselves, and discuss the benefits they have observed personally and in their clients. We will be releasing a series of featured articles over the next several weeks as we explore this technology and its possible impact on mixed martial arts more closely.

Read the article at: <http://www.scifighting.com/2013/08/28/12012/scifeature-cvac-future-athletic-conditioning/>



SciFighting, LLC.

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Hey SciFighters,

Those of you who know me, know I am not one to take endorsements lightly. However since our article on CVAC I have been actively using the tech to improve my conditioning. I can say it is impressive and as a technically knowledgeable person there is a good deal of scientific logic that makes it worth consideration.

[. . .]

CVAC is targeted at professional athletes however there are many benefits for those who also have generalized neuropathy. We will be writing more about CVAC as we dissect the science behind it, however Ascent has turned me into a true believer.

Sincerely,

Luca Rajabi, President of SciFighting

PS: This is a personal endorsement, we have not been compensated in any way to write this message.

Read the post at: <https://www.facebook.com/scifighting/posts/440302186090290>