

The NanoVi™ Device for Athletes

The ultimate innovation for athletes seeking optimal health and performance

Athletes Use NanoVi™ technology for:

- Faster recovery
- Increased cell energy / ATP production
- Less lactic acid build up and cramping
- Lower resting heart rates
- Better heart rate variability



A Paradigm Shift in Repair and Recovery

The NanoVi™ device is a unique and highly effective way for athletes to accelerate recovery and improve energy levels. This entirely new approach helps initiate the body's natural repair and rejuvenation mechanisms. NanoVi™ is drug-free and complies with the World Anti-Doping Code. Why athletes benefit from the NanoVi™ device, how it works, and how it can be used to take a training regime to a whole new level are discussed below.

Why Athletes are at Risk

Athletes metabolize much more oxygen than non-athletes – in some cases more than 100 times the amount of non-athletes. The additional oxygen metabolism is necessary for performance but also has a downside for athletes, as explained by The Oxygen Irony to the right. The related oxidative stress ultimately leads to a decline in performance and regeneration.

Numerous articles have been written about oxygen being both critical to life and extremely destructive at the cellular level.

The body naturally addresses the destruction by:

- preventing damage with antioxidants and
- initiating the repair of damage through cellular signaling events

Many athletes try to avoid damage to the body by taking antioxidants via food and supplements. Unfortunately, the oxidative stress attack is often more widely spread throughout the body than antioxidants can keep up with. Additionally, once the damage is done, antioxidants do nothing to repair it. Fortunately the body's oxidative response includes a second tier, the repair of damage. Signaling molecules trigger the repair of oxidative stress damage. Their specific signal activates proteins, which take care of the damage. Repair and regeneration problems only occur when the body's response cannot keep up with the damage being done. Because athletes are metabolizing so much oxygen, they run the risk of oxidative stress damage simply because their system cannot address the damage fast enough.

Use of Eng3's NanoVi™ Device

NanoVi™ technology is specifically designed to boost the repair side of the ongoing cycle of oxidative damage and repair. Athletes generate additional damage so stronger oxidative response results in noticeable improvements. In short, the NanoVi™ device is used to train harder, stay healthier and, as a result, improve results.

Athletes using the device typically report:

- faster recovery after exertion
- less need for recovery days
- more energy during training and competition
- less muscle soreness and cramping
- more power and endurance
- better concentration and mental clarity
- fewer disruptive illnesses
- better sleep, feeling more calm and less stressed

How NanoVi™ Technology Helps

Eng3's NanoVi™ device is a drug-free solution that works by triggering the body's natural response to oxidative stress. The device produces the precise signal known to initiate repair mechanisms.

This signal is naturally emitted by certain free radicals called reactive oxygen species (ROS). While ROS are generally damaging, they also play a critical role in signaling the body's

The Oxygen Irony*

Oxygen is a relatively small element—number eight on the Periodic Table and for those who remember their high school chemistry that means it has eight protons or positively charged particles. Oxygen is highly reactive and electrically charged. Electrically charged atoms strive to become neutral, to have a particular number of electrons in their outer shells. Each atom of oxygen, with six electrons, needs two more to be complete. That is why it will eagerly combine with any electron-donating atom—hydrogen, for instance—whenever it is given the opportunity.

In the human body, of course, it is given that opportunity on a breath-by-breath basis. Each time a cells burns its oxygen fuel to create energy, it also creates freewheeling oxygen atoms known as oxygen free radicals.

Therein lies the problem. Oxygen is not discriminating about what other molecular structures it might destroy in its quest to become electrically whole. If there are electrons to spare in a protein molecule, or in the fats that make up a cells' membrane, or even in the DNA that is crucial to the functioning of our cells and our bodies, oxygen atoms will grab them and change them. This constant cellular wear and tear due to the ravages of oxygen is so pervasive that it has been given a name: oxidative stress. And like its psychologically based cousin, oxidative stress can wear down a body over time.

Indeed, the biological consequences of this sort of electron scavenging can be found at the root of the normal process of aging. But it also has a part in cancer. Heart disease. Parkinson's disease. Name the condition, and somewhere down the line, oxygen free radicals are likely to play a role.

* Excerpt from Lori Oliwenstein's article "The Oxygen Irony: Oxygen, the life force found in every breath, also is one of the human body's most destructive invaders." USC Health Magazine, 2002.

oxidative response. University testing has confirmed that the NanoVi™ device emits the precise signal known to initiate repair. As a result, this approach is referred to as bio-identical signaling.

A humidified airstream is used to deliver the signal from the device to the user. This is possible because this particular signal transfers across water molecules. Once in the body, it is transferred through the watery environment within and between cells.

Improving oxidative response with bio-identical signaling has additional benefits. Stronger repair of oxidative stress damage allows proteins and enzymes to function better. This supports cellular activities in general.

Some of the ways improvement in cellular activities helps athletes include:

- oxygen metabolism and cell energy production
- better uptake of nutrients
- boosting and sustaining vitality
- improving the general status of health and immunity
- system regulation including heart rate variability, the stress response, and blood glucose stability

Not surprisingly, athletes use the NanoVi™ device to enhance other protocols including, the use of supplements and oxygen therapy.

Complement any Training Regime

Oxygen Protocols Should Include NanoVi™ Technology

Exercise with oxygen therapy (EWOT) and hyperbaric oxygen therapy (HBOT) are used in some athletic training. Both HBOT and EWOT increase the oxygen outside of the cell respiration chain. However, simply supplying additional oxygen to cells does not increase the cells' ability to utilize more oxygen. In fact, as outlined in the Oxygen Irony, adding too much oxygen to the system actually increases the production of free radicals and oxidative stress. This damages cells and proteins, contributes to aging, weakens the system and ultimately hinders performance. Oxygen protocols are the classic double-edged sword.

EWOT: An athlete using EWOT inhales concentrated oxygen while exercising. This is done to increase the cell's energy levels so an athlete can train more intensively. During EWOT (and traditional oxygen therapy treatments) more oxygen is supplied to the lungs so the athlete is breathing more than the 21% level of oxygen we have in the air. Since a normal person utilizes only one quarter of the oxygen they inhale, transporting more oxygen to the cells does not necessarily improve oxygen utilization by the cells. Athletes turn to Eng3's technology to increase oxygen utilization by the cells, and to reduce oxidative stress damage. To protect health and improve results, it makes sense to use the NanoVi™ device as part of any EWOT program.

HBOT: HBOT uses a pressurized chamber to increase the amount of oxygen in the blood. The air pressure inside a hyperbaric chamber is usually two to three times greater than the normal atmospheric pressure. This helps the blood carry more oxygen to organs and stimulates the release of substances, primarily growth factors and stem cells, to promote healing. However, metabolizing far more oxygen than normal produces additional oxidative stress damage. Following hyperbarics with a NanoVi™ session is an ideal solution. Based on more than 1,500 treatments, doctors see better patient outcomes when NanoVi™ is used in conjunction with HBOT. NanoVi™ reduces the damage caused by additional oxidative stress and can be used on an ongoing basis because there is no potential for harm.

NanoVi™: This is a far different approach than either EWOT or HBOT. As noted earlier, NanoVi™ works to improve critical repair processes that are part of the body's oxidative response. Better repair leads to better oxygen utilization. If used in conjunction with EWOT or HBOT, NanoVi™ helps mitigate the oxidative stress damage done by excessive oxygen intake.

The device complements any oxygen protocol and supports athletes who put a lot of demand on their bodies. Whether used in conjunction with EWOT, HBOT or on its own, NanoVi™ is a key component of healthy training and better oxygenation in athletes. It is the most advanced way to increase oxygen utilization. Not only are athletes fueling their cells for better performance; they are taking good care of their health.

Make Supplementation More Effective

Putting nutrients into the body by no means ensures that they are absorbed and used. Elaborate supplementation will do little to enhance performance or protect the system if the nutrients are not properly metabolized. NanoVi™ technology is used to improve cellular activities including the utilization of nutrients, making supplementation more effective.

Antioxidants are widely used to help neutralize free radicals and prevent oxidative stress damage. However, antioxidants cannot repair damage so they address only part of the problem.

Athletes use the NanoVi™ device to help repair damage, picking up where antioxidants leave off.

In fact, NanoVi™ helps prevent antioxidants from doing their job too well. We have known for more than a decade that taking too many antioxidants inhibits repair. But the results of a new study suggest that certain antioxidants (vitamins C and E) can also interfere with muscle development.

"Our results show that vitamin C and E supplements blunted the endurance training-induced increase of mitochondrial proteins, which are needed to improve muscular endurance."

Dr. Gøran Paulsen, Norwegian School of Sport Sciences, 2014

The problem arises because overdoing antioxidants not only neutralizes free radicals but also the signal they emit to initiate repair. The NanoVi™ device produces this bio-identical signal. By augmenting the signaling for repair, the NanoVi™ device helps protect athletes from the danger of overdoing antioxidants.

NanoVi™ Easily Integrated with Training Regimes

It is easy to incorporate the NanoVi™ device in a training regime. It can be done while an athlete is using stationary equipment, when sitting or lying still, or while sleeping. During rigorous training, the more time on the device the better. Using this technology for an hour before and an hour after strenuous workouts has worked well for a number of elite athletes. It allows them to train harder, stay healthier and optimize their physical and mental ability. Of course, recreational athletes could use the device less, ideally at least 20 minutes three times a week on the NanoVi Pro™.

Results Confirm Benefits

DNA double strand breaks (DSBs) are a highly reliable indicator of cellular damage. DSB damage was tested at the IMSB Olympic training center in Vienna. Prof. Hans Holdhaus, director of IMSB and renowned anti-doping expert, oversaw the testing. The results were exceptional. Improvement ranged between 13% and 34%. On average, athletes had 25% less DNA DSBs when a 20-minute NanoVi™ session was incorporated in their training regime.

A variety of less complex tests can be used to confirm an influence of NanoVi™, some showing a difference after a single 20-minute session. Tests can be used to show improvements in cellular function, including:

- Heart Rate Variability (HRV)
- Markers for Oxidative Stress
- Metabolic Resting Rate (MRR)
- Volume of O2 exhaled unused
- Enzymatic reactions and other specific tests

For athletes, HRV is an important indicator of underlying health and the level of stress on the system. HRV measures consistently show improvement with use of the NanoVi™ device.

Markers for oxidative stress dropped by an average of 14% when study participants were tested before and after a 20-minute NanoVi Pro™ session.

Aside from tests verifying improvements, performance athletes tell us they use the device before, during, or after training because it gives them more energy, faster recovery from workouts, faster muscle regeneration, and the ability to train longer and harder with less time between workouts. Over time athletes notice a stronger immune system so they have fewer illnesses and infections.

What Trainers and Athletes Say



My results with the NanoVi™ device are extremely positive. As a strength coach I have been working with heart rate variability analysis for about 10 years, trying to improve recovery and performance of my athletes in various sports (track, football, basketball, volleyball, weight lifting, boxing, martial arts, cycling, rugby and other sports).

The autonomic balance is a key factor to promote the improvement of performance, recovery and overall health. Regarding endurance sports like cycling, it is important to monitor the balance between sympathetic and parasympathetic nervous system to avoid:

- overtraining syndrome
- muscular overstrain

I have been studying the NanoVi™ device and how it affects HRV for several months. It is clear that using NanoVi™ device between training sessions and immediately after can improve parasympathetic activation thus enhancing recovery. It is especially important in endurance sports to monitor autonomic nervous system balance to avoid parasympathetic dominance overtraining (adrenal fatigue).

After evaluating NanoVi™, my recommendation for an endurance athlete is to use multiple sessions of NanoVi™ on daily basis during competition and one to two sessions daily during preparation phases.

Antonio R, strength trainer for elite athletes, sports performance consultant, writer for Athletics Weekly Magazine



Francisco P, cycling studio owner and USA Cycling certified coach

This device is definitely helping my body. The first thing I noticed is that my legs recover faster and I feel far less soreness in my quads. My personal experience is better rest, I am sleeping better, waking up earlier, feeling good and have more energy. Guys on my team notice faster recovery, better sleep, and less stress during competition.



In four months of using the NanoVi Pro™, my cycling has improved dramatically, and I am now faced with mandatory upgrade to Cat2 with over 55 points accumulated in these first months of 2014.

What are most observable are the improvements in breathing, energy utilization, relaxed state of mind, ability to recover and decrease my heart rate quickly.

I notice a dramatic awareness of "wellness", which I define as a conjugate of thinking more clearly, eating better, not cramping, never sore or lactated, improved and restful sleeping, and ability to ride through all levels of intensity during races. I get stronger as races progress, instead of fatiguing closer to finishes.

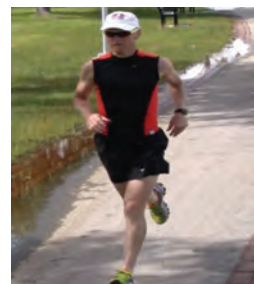
With the NanoVi Pro™ I now have the unbelievable desire to just keep riding because it is so much more effortless both during and after a ride.

Rick B, Masters Category-2 cyclist



Judi M, Retired Olympian

When I skied in the Olympics I was seventeen. Now I am in my mid sixties and have been active my whole life. The NanoVi Pro™ makes a huge difference in my recovery times and lets me keep doing all the sports I love. Not many people push as hard as I do so I am really thankful to have Eng3's device to help me bounce back from the wear and tear of my active lifestyle.



Ken C, Masters Ironman triathlete

Of all the things I have tried over the years NanoVi™ is one that works. It is pretty remarkable. Recovery is probably the biggest thing I have noticed. After a 20 kilometer run I expect to be sore and stiff the next day but instead I am ready to go. It is amazing, so unusual. With the NanoVi Pro™ my endurance has also increased remarkably, the result is great, I wouldn't be without it.

Learn more about how a NanoVi™ device could be beneficial to you:

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