



Health Nexus Orthopedics & Wellness

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Dear Athlete.

On behalf of myself and Chris Noss of *Athletes Edge* (<https://www.athletesedge.fitness>), we would like to thank you for the opportunity to provide a glimpse into your cardio-respiratory health and longevity through VO2 Max testing. Health Nexus Orthopedics and Wellness uniquely focuses on Orthopedics from a Whole Human Health perspective, incorporating a holistic approach to musculoskeletal wellbeing and wellness in general. Chris and I share the philosophy of improving healthspan and lifespan, through better metabolic health by incorporating individualized diet recommendations, exercise, movement and cardio-respiratory fitness.

We offer a unique tool in portable breath analysis (indirect calorimetry) in the form of PNO \bar{E} . It is described in their own words below:

What is PNO \bar{E} ?

PNO \bar{E} is a *portable*, clinical-grade metabolic analyzer that performs comprehensive breath-based assessments to measure 23 biomarkers, including VO₂ max, resting metabolic rate (RMR), fat burn efficiency, and biological age. It delivers a 360° snapshot of an individual's physiology by analyzing how oxygen flows through the lungs, heart, and cells.

PNOE measures 23 relevant biomarkers through non-invasive breath analysis, offering a complete picture of cardiovascular, pulmonary, metabolic, and cellular function.



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Here's how they break down:

Pulmonary & Respiratory Function

Breathing Frequency

Tidal Volume

Minute Ventilation

Forced Expired Volume

VE/VCO₂ (Ventilatory Efficiency)

End-tidal CO₂

End-tidal O₂

Fraction of Expired CO₂

Fraction of Expired O₂

Metabolic Function & Energy Utilization

VO₂ Peak (VO₂ max)

VCO₂ (Carbon Dioxide Production)

Respiratory Exchange Ratio (RER)

Caloric Burn

Fat Oxidation

Carbohydrate Oxidation

Mechanical Efficiency

Crossover Point (fat-to-carb switch point)

Cardiovascular & Circulatory Health

Heart Rate

Heart Rate Variability (HRV)

O₂ Pulse

VO₂/BF (Oxygen to Breathing

Frequency Ratio)

Performance & Threshold Markers

Aerobic Threshold

Anaerobic Threshold



About VO2 Max:

VO2 Max is the gold-standard measure of your body's oxygen-processing capacity — and the most powerful predictor of metabolic age and longevity. This diagnostic reveals how efficiently your heart, lungs, and cells convert oxygen into energy, guiding precision health programs for every client.

How We Measure VO2 Max at PNOE

PNOE delivers clinical-grade **breath analysis** through portable breath analysis:

- A short progressive session on a treadmill or bike.
- Real-time capture of oxygen consumption and CO2 production.
- Personalized VO2 Max score, biological age, and key biomarkers for performance and health optimization.

RECOMMENDATIONS FOR TESTING:

1. VO2 Max Testing will be offered to cyclists at our in-person location at **931 SE Ocean Blvd, Suite A. Stuart, FL 34994.**
2. We would ask cyclists to bring their own road or gravel bike to be fitted to a smart trainer.
3. During the VO2 Max Test, the cyclist will be fitted with the PNOE device and then the test will be administered.
4. This usually entails a 15-minute warm-up, 10-minute rest, and then a 12-minute ramp test. The cyclist will spin at a steady cadence while increasing the resistance (wattage), each minute, until they are too exhausted to continue.
5. A two-to-three-minute recovery will follow.
6. We expect the total time for testing to be around 45 minutes of total time for each athlete. Warmups can be done in advance of the test by each athlete, in order to allow for more athletes to be tested.
7. The test provides a breath-by-breath analysis of how much oxygen the body can absorb, and the amount of CO2 expelled while exercising.
8. An AI-facilitated analysis will then be generated, creating a customized report with several of the parameters described above as well as a VO2 Max score which can be referenced to the athlete's age.

Instructions for cyclists:

1. It is recommended that you not to eat a large meal at least 2 - 3 hours prior to the test. They may have a light breakfast of their choice.
2. It is recommended that you do not consume alcohol or nicotine 12 hours prior to the test. Do not consume caffeine 5 hours before the test.



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3. The use of stimulants such as nicotine (smoking), appetite suppressants, and allergy medication can affect your results.
4. **You must avoid vigorous exercise at least 24 hours prior to the test.**
5. Failure to meet these standards may result in an inaccurate result.

Pricing:

Because Chris is providing his expertise and knowledge of the PNOE product, not to mention years of experience coaching and optimizing elite athletes, he will be charging his usual fee of **\$250/athlete** for the test and report generation. It should be noted that because of time constraints, it is likely we won't have all reports immediately available for every athlete. In this circumstance, we will be happy to email these to them. Alternatively, they can create a username on the PNOE app where they can access their data and training recommendations.

Offerings:

I will be managing follow up testing, should the athlete desire it, in my in-person clinic in Stuart Florida. This is usually done after 3 months of instituting an adaptive training protocol. Chris and I work closely to offer the option of creating a remote, virtual training program for the athlete through the TrueCoach training app available on the Apple and Google Play app stores. Additionally, through my HealthNexus Orthopedics and Wellness practice, I can provide virtual Orthopedic and wellness assessments and counselling as well as treatment plans for those athletes who have injuries or are simply interested in injury prevention and metabolic health optimization. Lastly, I also offer various in-person services such as biologic injections ("stem cells") and custom bracing solutions.

In summary, Chris and I really look forward to this opportunity to improve your performance through data and getting you healthier, moving better and living your best life.

Kind Regards,

Lyll Ashberg, MD
Health Nexus Orthopedics and Wellness

Chris Noss, ACSM-CEP/FAFS
Athletes Edge