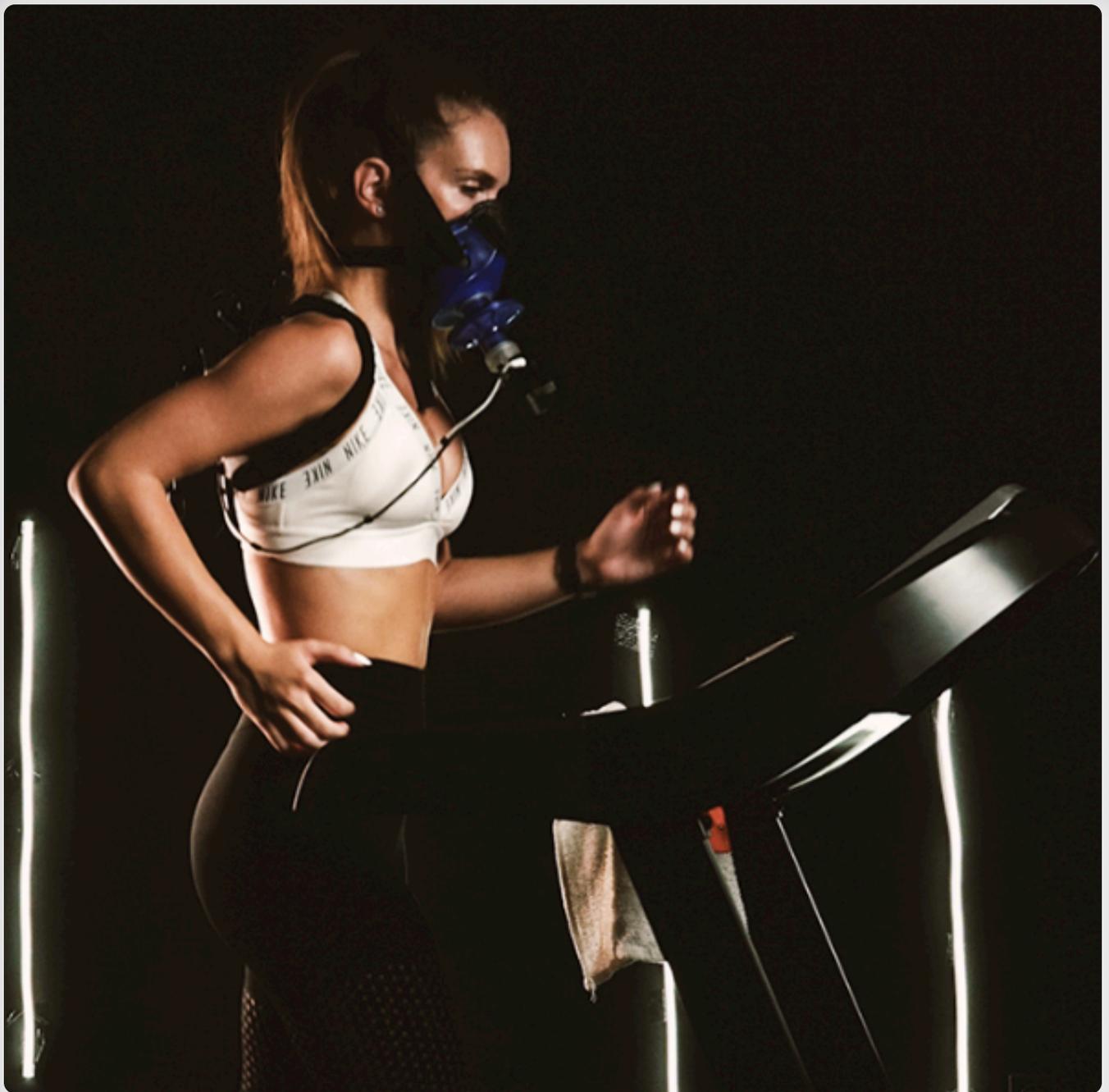


PNOË[®]

FITNESS REPORT

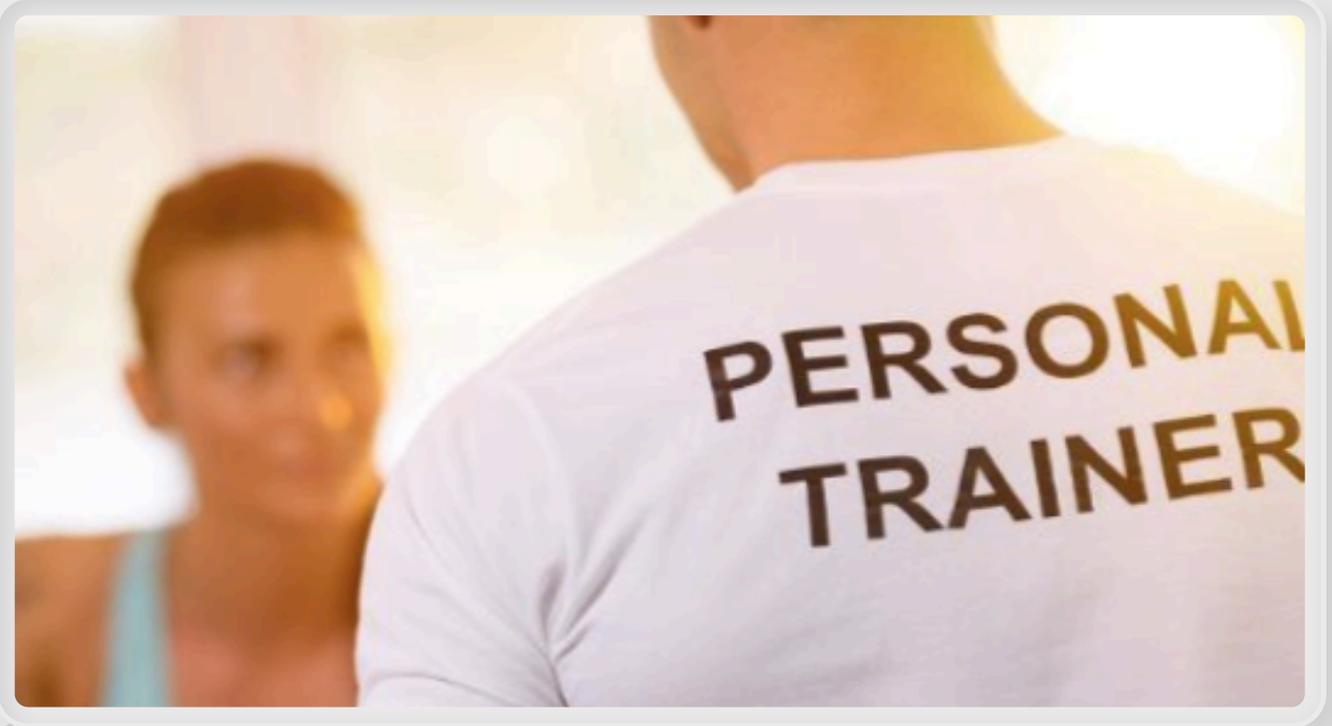


PAUL FABRITZ

06-19-2020

We are what we repeatedly do.

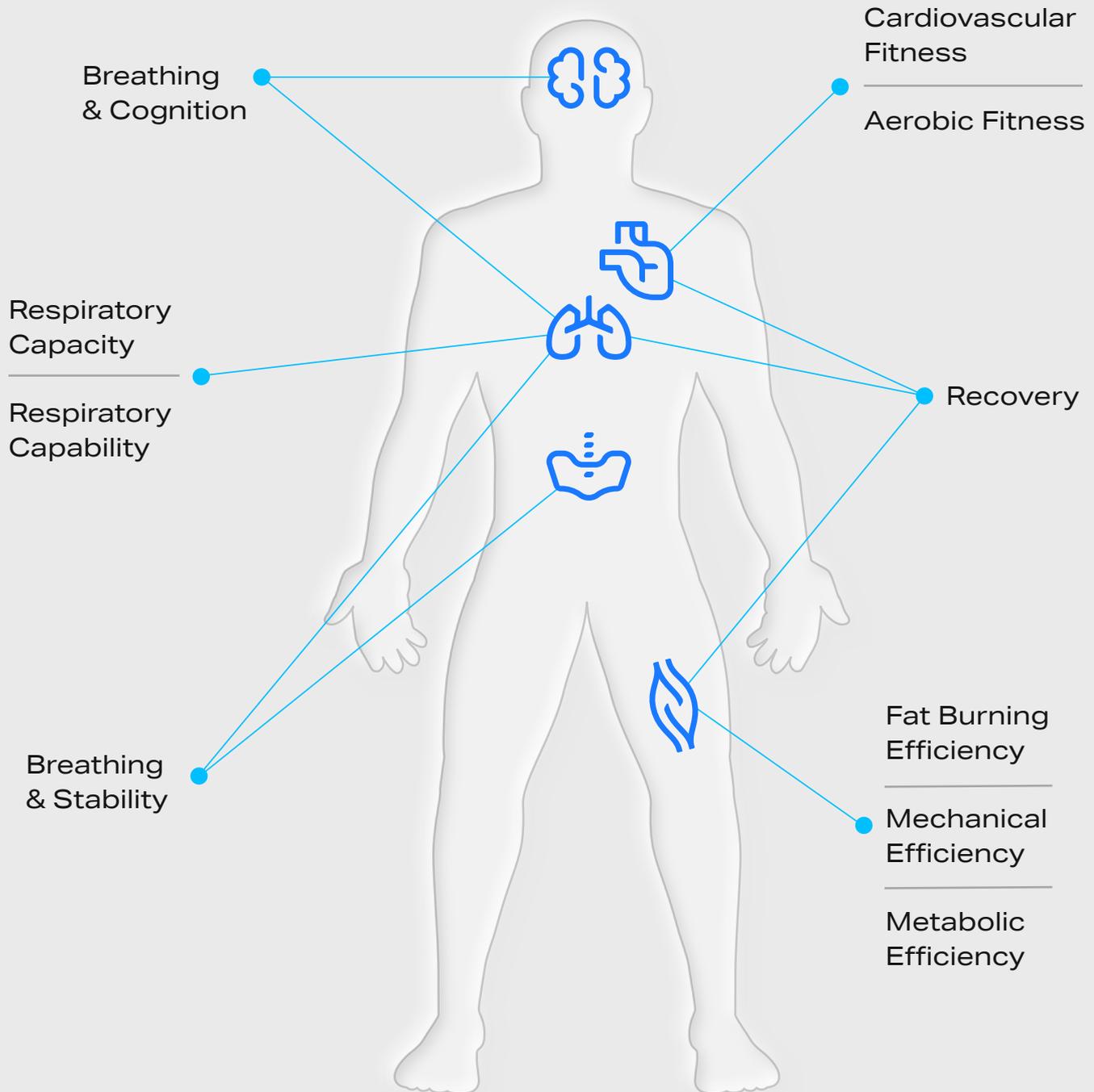
Excellence, then,
is not an act but a habit.



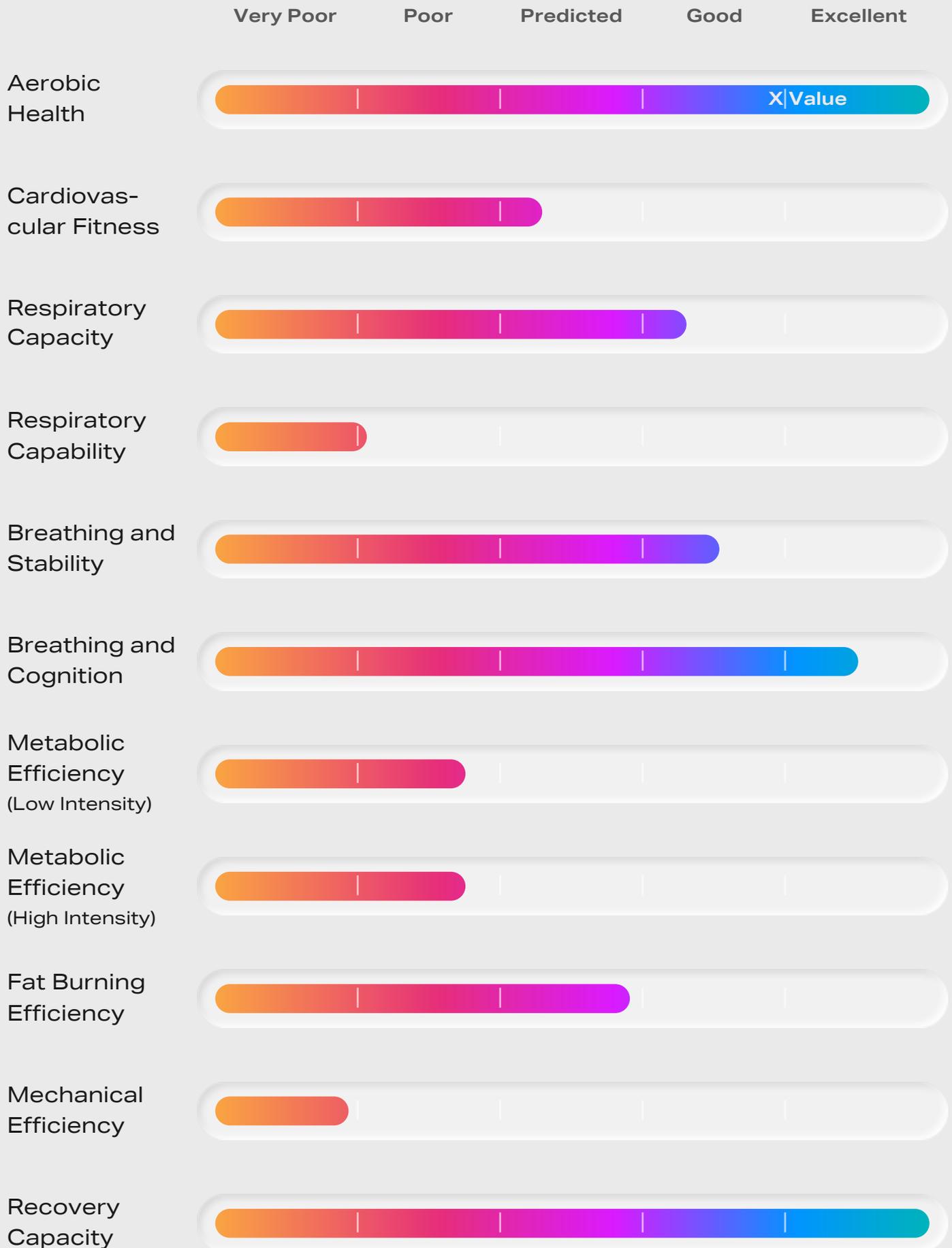
Intro

PFJ

Your trainer, Eric Bana is a certified ACSM endurance and strength coach trainer and a PNOE certified metabolic efficiency expert. He holds a BSc in kinesiology from Rutgers University.



Overview





Aerobic Health

This metric represents your ability to exercise at high intensities. Aerobic health is one of the best indicators of overall health and best predictors for developing cardiovascular disease. The value of this metric is based on VO_{2peak} – the maximum amount of oxygen you can use per kilogram per minute – achieve during your test.

A sedentary lifestyle, lack of cardiovascular exercise or excessive weight training will lower this score. Cardio and interval training will improve the score of this metric.



Cardiovascular Fitness

This metric represents your cardiovascular systems (heart, blood vessels and blood) ability to deliver oxygen to your muscles and will indicate if this system poses a limitation to your ability to exercise and function. The value of this metric is based upon your VO_{2peak} score in comparison with others the same gender and age, as well as the trendline of your VO_{2pulse} (the amount of oxygen used per beat of the heart (VO_2/HR) as intensity increases).

A low VO_{2peak} in combination with a decline in your VO_{2pulse} during your test will reduce your cardiovascular score.

A sedentary lifestyle and a lack of cardiovascular training or excessive weight training will lower your cardiovascular score whereas low intensity cardio and interval training will improve it.



Respiratory Capacity and Respiratory Capability

This metric represents your respiratory systems (lungs, respiratory muscles, and thoracic and rib mobility) ability to effectively provide oxygen and remove carbon dioxide (CO_2) from your muscles and will indicate if this system poses a limitation to your ability to exercise and function. The value of this metric is based upon two metrics:

1. Respiratory capacity which is measured using two values assessed through spirometry
 - a. **Forced Vital Capacity (FVC)** - the maximum volume of air you can breathe out (after a maximal breath in) and represents the maximum usable volume of air your lungs can hold
 - b. **Forced Expiratory Volume in one second (FEV1)** - the volume of air you can expire in the first one second of the FVC test. Represents your expiratory power which is vital to moving air quickly at high intensities
2. Respiratory capability which is your ability to **USE** your capacity during exercise at all intensities based upon two values measured by the PNO \dot{E} unit throughout your Fitness Test
 - a. **Tidal Volume (VT)** - The volume of air you move per breath
 - b. **Breathing frequency (BF)** - The frequency you breath per minute

An inability to move an appropriate volume of air in and out of your lungs (FVC and FEV1) in comparison to others your age, height, gender and race will result in a lower Respiratory Capacity score. An inability to use your capacity volumes and/or a tendency to breath too quickly will reduce your Respiratory Capability score.

A sedentary lifestyle, history of asthma or exercise induced bronchospasm (EIB) or a lack of cardio or interval training will lower the score of this metric. Limitation specific respiratory training concentrating on volume, power, strength, endurance or coordination in conjunction with cardio and interval training is the most effective way to improve your score.



Breathing and Cognition

This metric represents how your breathing frequencies are affecting the amount of carbon dioxide (CO₂) in your blood/cells. A low level of CO₂ (hypocapnia) due to breathing too quickly (hyperventilation) will lead to vasoconstriction of the vessels in the brain resulting in less oxygen being available to your brain cells thereby affecting your cognition (the ability to think and react rapidly).

This score is based upon two metrics:

1. Your breathing frequency at different intensities during the test
2. The amount of carbon dioxide you exhale during the test

A high breathing frequency (hyperventilation) at one or more intensity level in combination with low CO₂ levels being exhaled during the test will result in a lower score.

More than 10% of people chronically hyperventilate without knowing it and are reducing their cognitive capacity through incorrect breathing. Limitation specific respiratory training is the most effective way of improving this score.



Breathing and Stability

This metric represents how your respiratory volumes are affecting your spinal stability, limb power and posture. Your score is based upon your tidal volumes (V_t) or the volume of air you breathe throughout your test.

Breathing a low volume of air each breath during the test will lead to decreased spinal stability thereby affecting your ability to develop power at your limbs and ability to maintain an upright posture.

A low V_t in relation to your respiratory capacity (FEV₁) will result in a lower score.

A low V_t (along with hyperventilation) is a predictor of musculoskeletal dysfunctions such as lower back pain. Limitation specific respiratory training is the most effective way to improve the score of this metric.



Fat Burning Efficiency

This metric represents your muscle cells ability to utilize oxygen and burn fat as a fuel source. Fat burning efficiency is highly correlated with cellular health. The score of this metric is based on the heart rate at which you attain the crossover point (the point when you start burning more carbohydrates than fat) in relation to your heart rate during the warm up and your maximum heart rate achieved during the test.

A sedentary lifestyle, lack of cardiovascular exercise or respiratory limitations can lower will lower the score of this metric. Low to medium intensity cardio training in Zone 2 and Zone 5 intervals and limitation specific respiratory training can improve improve your score.



Metabolic Efficiency (Low Intensity)

This metric represents the number of calories you burn during exercise at lower intensities and whether you are burning more or less calories than the average person of the same age, gender, and weight. This metric does not represent your resting metabolic rate (RMR). PNOE can provide you with your RMR through a separate testing protocol.

The value of this metric is based on the calories burned recorded during the initial stages of the protocol. Caloric restriction, chronic dieting, decreased skeletal muscle mass and respiratory limitations are among the most common factors that reduce the value of this metric. Resistance training, changes to nutrition and limitation specific respiratory training can improve the score of this metric.



Metabolic Efficiency (High Intensity)

This metric represents how well you use oxygen at higher intensities. The value of this metric is based upon how well you use oxygen (VO₂) per beat of heart (VO₂/HR or VO₂pulse) and per breath (VO₂/BF). A reduced score indicates areas of inefficiency at higher intensities. You can improve your score through interval training at the intensities in which you demonstrate inefficiency.



Mechanical Efficiency

This metric represents the relationship between the work you produce (output) vs. the calories you consume (input) or the efficiency ratio with which a person's body is transforming energy from nutrients (kcal/min) into work (watts).



Recovery Capacity

This metric represents your ability to recover from high intensity exercise. Your recovery score is based upon two variables:

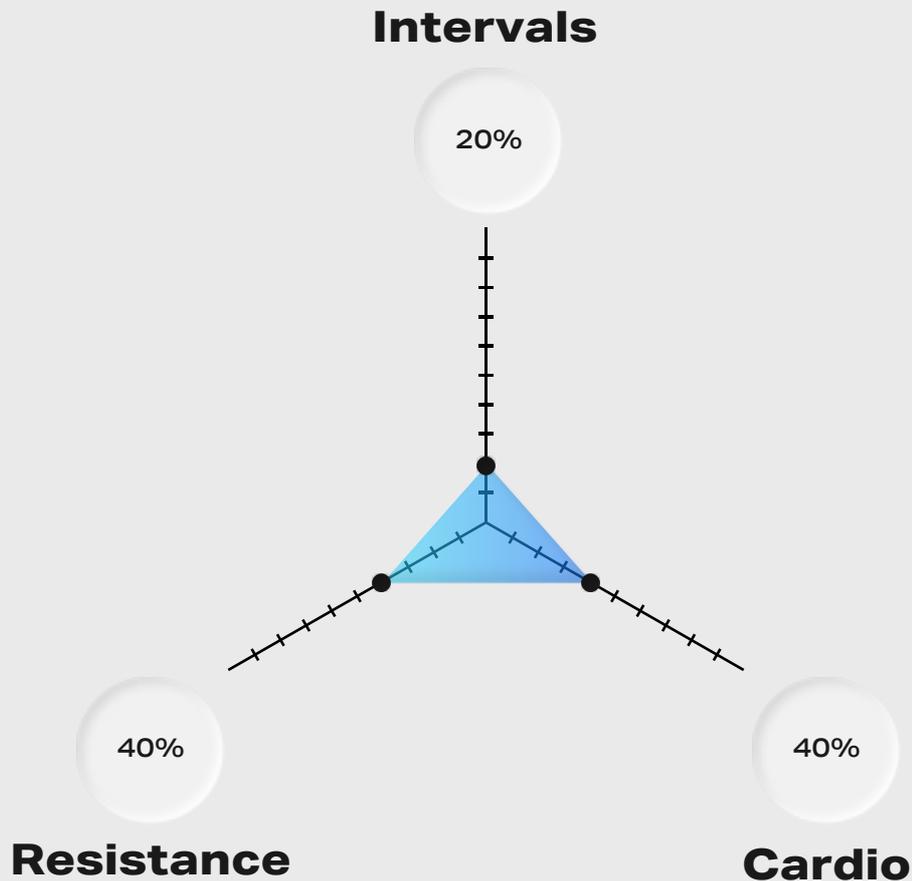
1. Cardiovascular recovery
 - a. The percentage your heartrate (HR) drops in the first one minute of the inactive recovery phase of the exercise protocol in relation to your base HR (your average HR during warm up phase) and maximum HR (your highest HR during the test phase).
2. Metabolic Recovery
 - a. The percentage your VCO₂ – the amount of CO₂ you are breathing out - drops in the first two minutes of the inactive recovery phase of the exercise protocol in relation to your base VCO₂ (your average VCO₂ during warm up phase) and maximum VCO₂ (your highest VCO₂ during the test phase).

Your ability to recovery is directly related to your level of cardiorespiratory and metabolic fitness. A small decrease in HR in the first one minute and VCO₂ in the first two minutes will result in a low recovery score.

Cardio, interval training and respiratory training (if required) will improve this score.



i The workout recommendation mentioned below is based on your fitness goal of Conditioning and your scores from the PNOE test.



Due to the respiratory limitation(s) identified in your Fitness Report, we recommend that you add respiratory training to your weekly training schedule. The type/intensity/frequency/duration of the respiratory training will be specific to your limitation(s) and provided by your trainer

Making sure your body is burning a high enough number of calories on a daily basis is the single most important factor in weight loss. The majority of individuals who go on diets will fail even after the adoption of a healthy lifestyle because their metabolism will slow down making it harder to burn calories. Therefore, the focus of the program will be to ensure your metabolism is in "high" enough levels and will continue to do so even as you begin to cut calories. As the program evolves focus will shift towards cellular health and your ability to burn more fat in high exercise intensities.

The focus of your training should be on improving your mechanical efficiency through strength training while maintaining your cardio-respiratory fitness through HIIT training. After we achieve this we can focus on your fat burning efficiency through cardio training.

Training Zones

Zone	HR Range	Wattage Range	Speed Range	RPE	Benefits	Training Type
Zone 5	168-176 BPM	235-280W		10/10 Feels impossible to continue, completely out of breath, unable to talk	Improves anaerobic capacity, VO2max and muscle metabolism (increases in mitochondrial density and capillarization)	Short high intensity intervals
Zone 4	154-168 BPM	185-235W		8-9/10 Difficult to maintain exercise intensity, hard to speak more than a single word	Improves anaerobic capacity through improvements in buffering capacity	Medium high intensity intervals
Zone 3	137-154 BPM	140-185W		6-7/10 On the verge of becoming uncomfortable, short of breath, can speak a sentence	Improves VO2 and cardiorespiratory health through increases in cardiac strength and improvements in O2 dependent storage and lactate shuttle	Long medium intensity intervals/ tempo
Zone 2	125-137 BPM	100-140W		4-5/10 Feel like you can exercise for long periods of time, able to talk and hold short conversations	Improves aerobic capacity and muscle metabolism through increased mitochondrial density and capillarization	Low intensity cardio training
Zone 1	110-125 BPM	65-100W		2-3/10 Feels like you can maintain this intensity for hours, easy to breath and carry on a conversation	Improves fat burning and increases oxygen delivery to the muscles without significant utilization leading to recovery	Recovery

	Units	06-19-2020	08-19-2020	11-19-2020
Fat-Max	at bpm	94	99	106
Ventilatory Threshold 1 (VT1)	at bpm	90	96	104
Ventilatory Threshold 2 (VT2 or anaerobic threshold)	at bpm	147	154	164
VO2 Peak	ml / min / kg	43	46	49

Fat Max

The exercise intensity where a person burns the most amount of fat and the least amount of carbohydrate.

Ventilatory Threshold 1 (VT1)

The exercise intensity at which physical activity starts to be considered a workout.

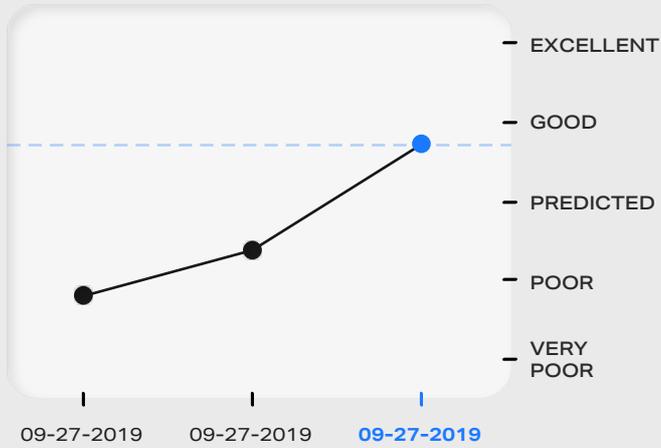
VO2 Peak

The maximum oxygen consumption in milliliters per kilogram per minute (ml/kg/min) achieved during the test

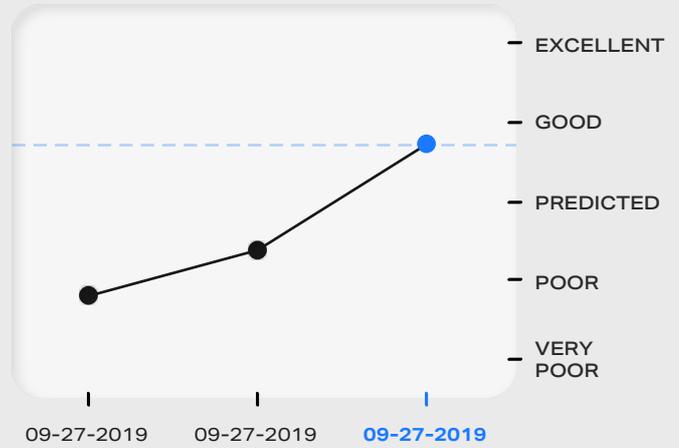
Ventilatory Threshold 2 (VT2)

The exercise intensity at which the body transitions where anaerobic metabolism becomes a large part of the body's energy generation

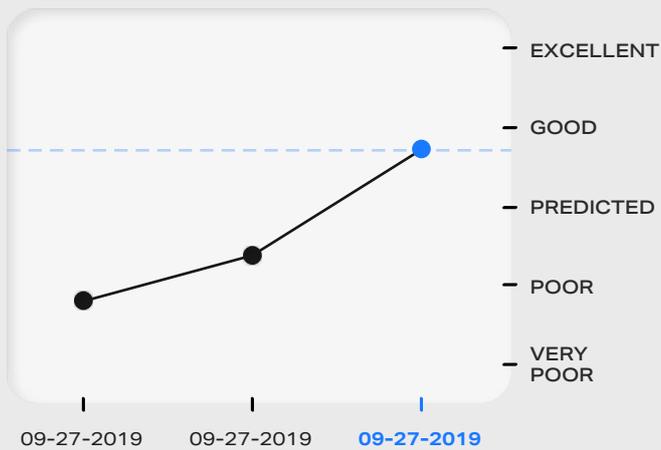
Aerobic Health



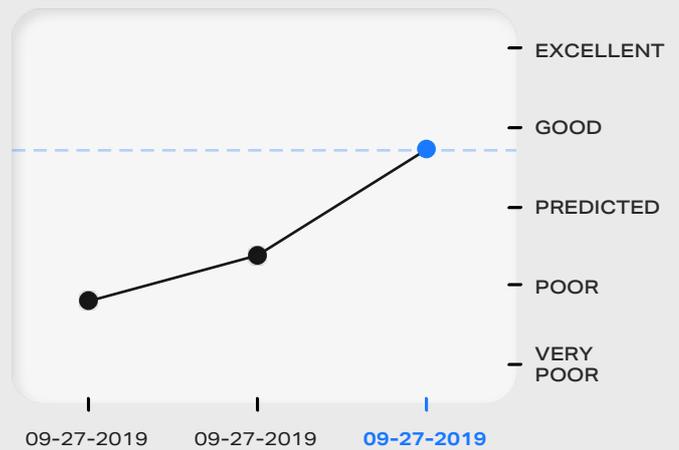
Cardiovascular Fitness



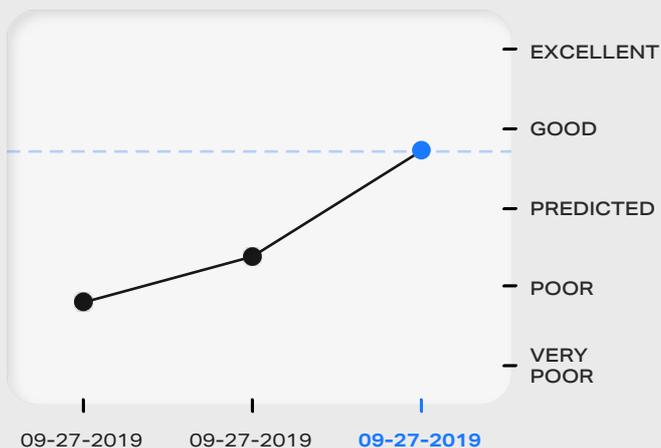
Respiratory Capacity



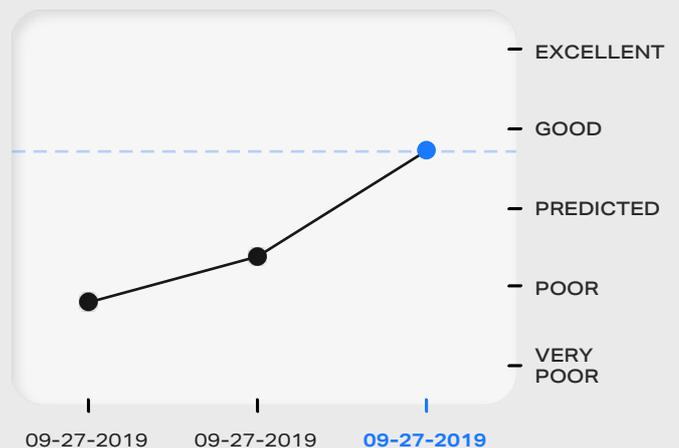
Respiratory Capability



Breathing & Stability

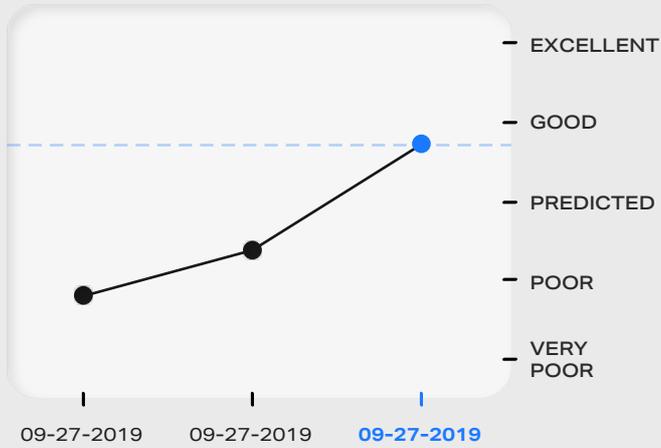


Breathing & Cognition



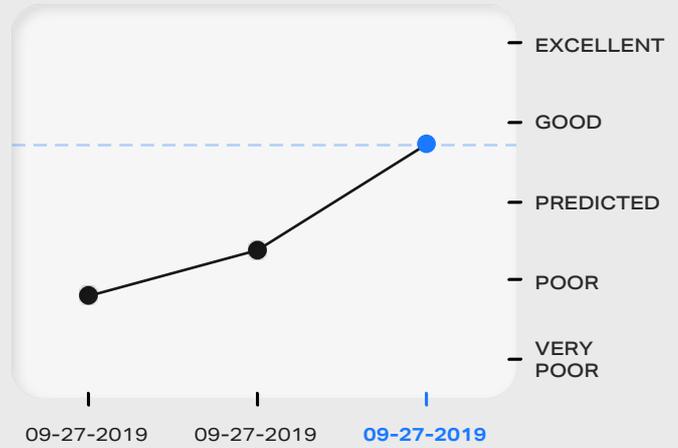
Metabolic Efficiency

(Low Intensity)

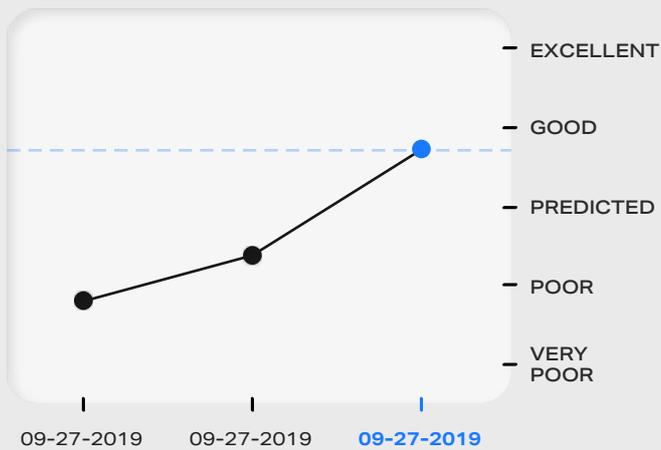


Metabolic Efficiency

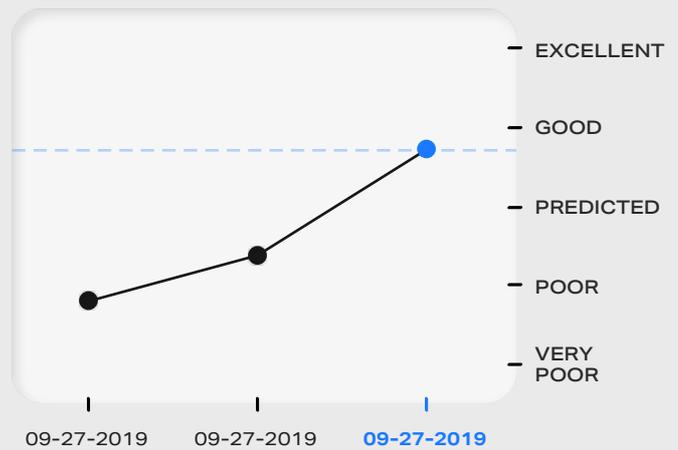
(High Intensity)



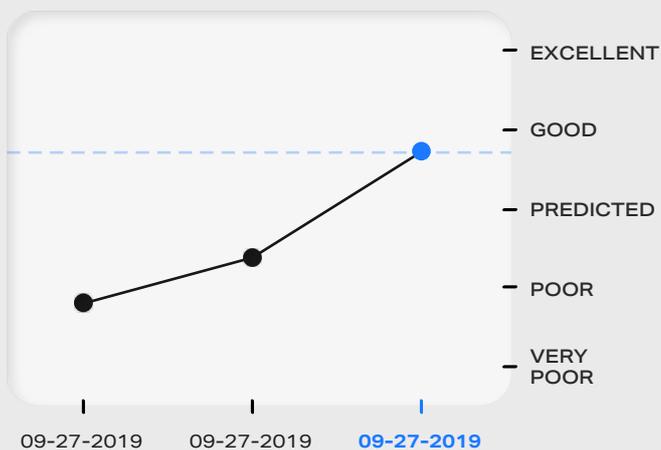
Fat Burning Efficiency



Mechanical Efficiency



Recovery Capacity



Thanks for joining the
PNOË community.
We are here for you
whenever you need us.

Your next assessment
should be scheduled on:

AUGUST-SEPTEMBER 2021

The Assessment is intended for information purposes only and is not intended to be a substitute for professional medical advice, diagnosis or treatment. Consult your physician before engaging in an exercise program and/or changing your diet as a result of the information provided by this Assessment. Participating in any workout regimen may result in an increased risk of physical injury based on the type, frequency, intensity and duration of the workout regime.

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