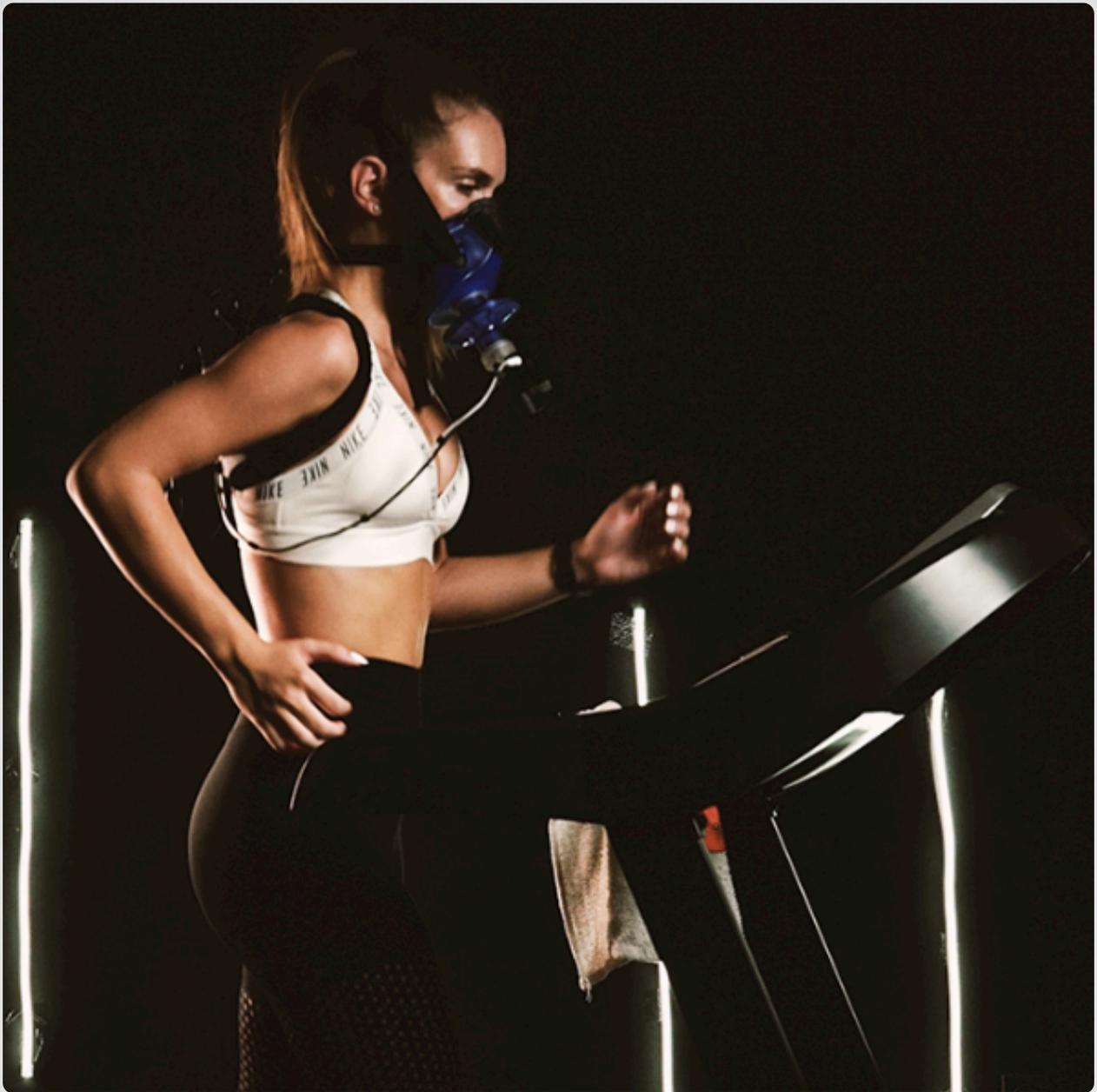




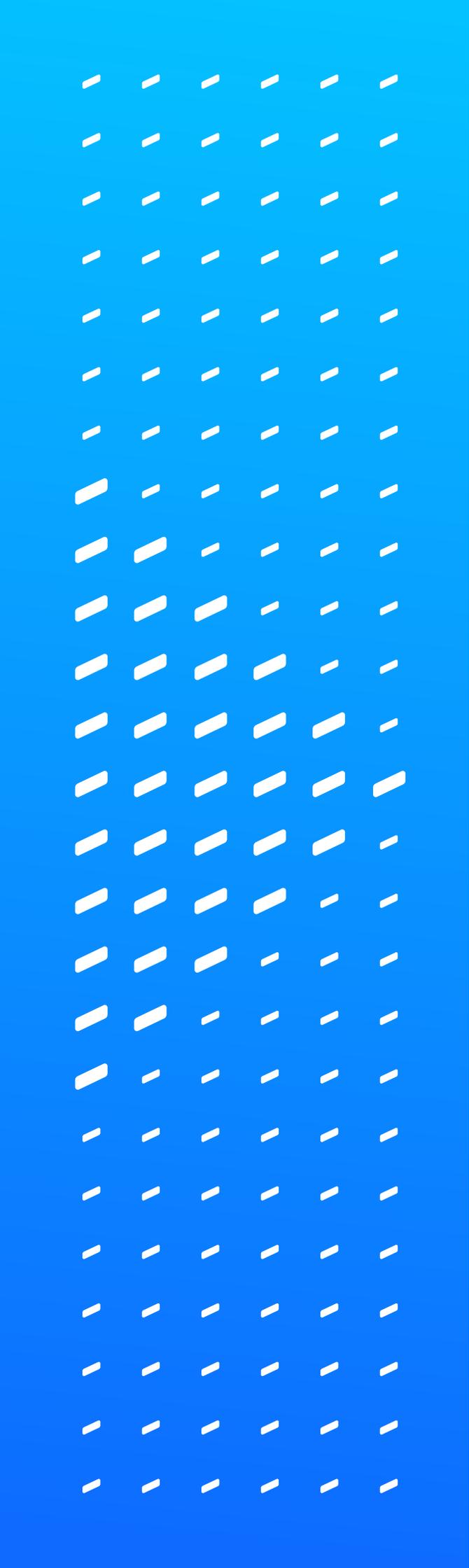
PNOÉ[®]

FITNESS REPORT



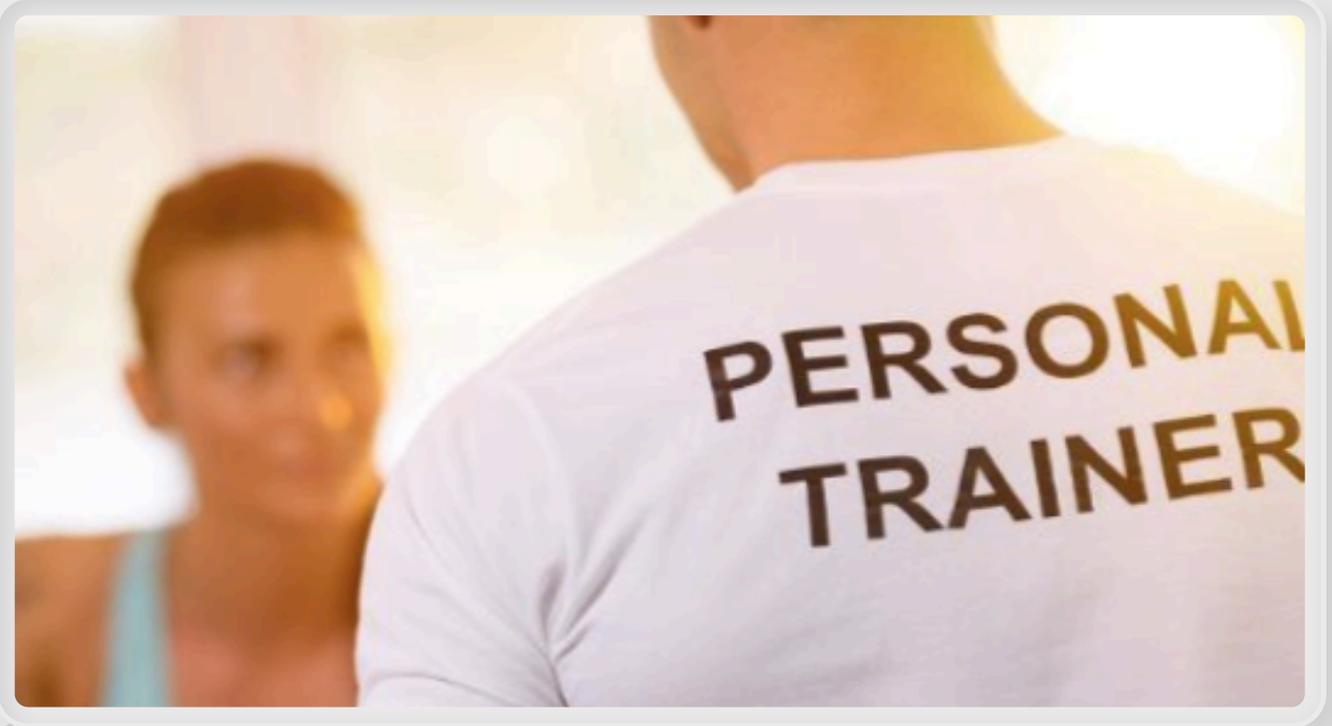
Gold Standard Metabolic Test

06-19-2020



We are what we repeatedly do.

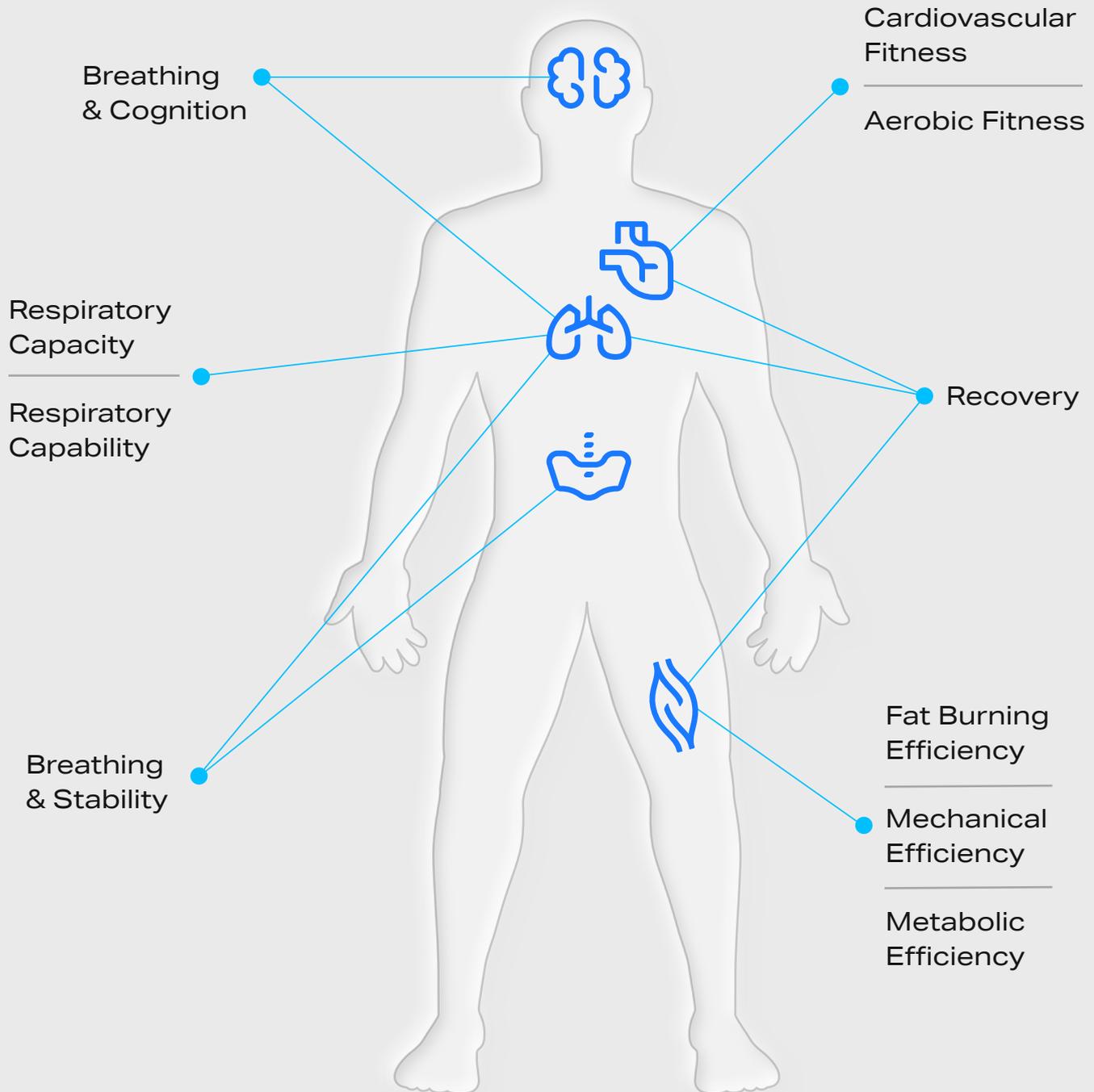
Excellence, then,
is not an act but a habit.



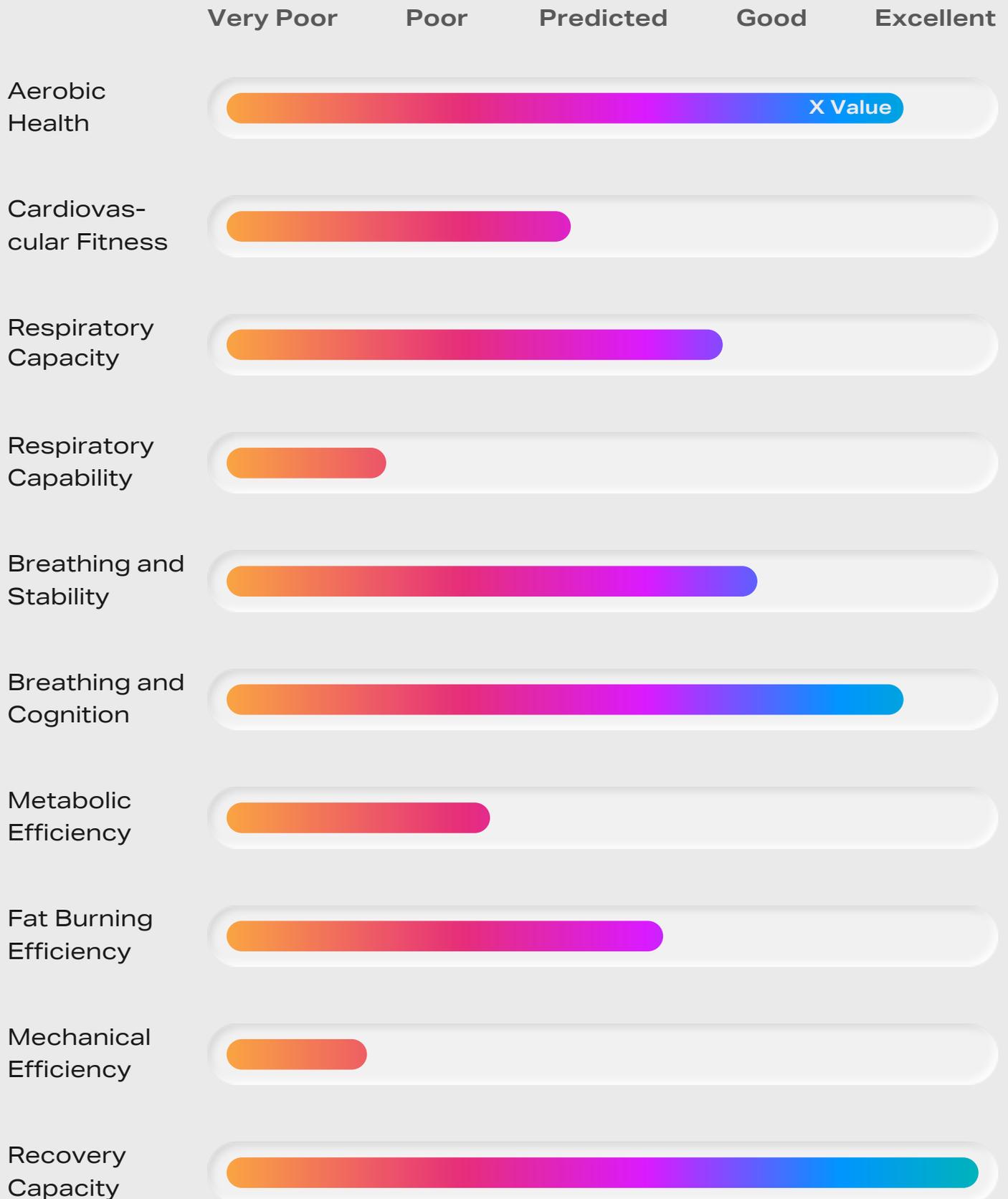
Intro

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_2 pulse (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_2 Pulse 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 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 three metrics:

1. Respiratory capacity which is measured using two values assessed through spirometry
 - a. The maximum volume of air you can breathe in (FVC)
 - b. The maximum volume you can breathe out in one second (FEV1)
2. Respiratory capability which is your ability to USE your capacity during exercise based upon two values measured by the PNO \dot{E} unit throughout your Fitness Test
 - a. The volume of air you move per breath (Tidal Volume or VT)
 - b. The frequency you breath per minute (Breathing frequency or BF)
3. Your trendline of the amount of oxygen your body uses per breath (VO_2/BF) as intensity increases.

An inability to move 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, a tendency to breath too quickly and a decline in your VO_2/BF trendline during the exercise 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 breathing exercises concentrating on frequency and volume 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 breathing exercises concentrating on



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 breathing exercises concentrating on volume 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 maximum and starting heart rate during the test.

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



Metabolic Efficiency

This metric represents the number of calories you burn during exercise 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 and excessive cardio training are among the most common factors that reduce the value of this metric. Strength training in combination with refeeding cycles will improve the score of this metric.



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 (e.g. fats and carbohydrates) into work.



Recovery Capacity

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

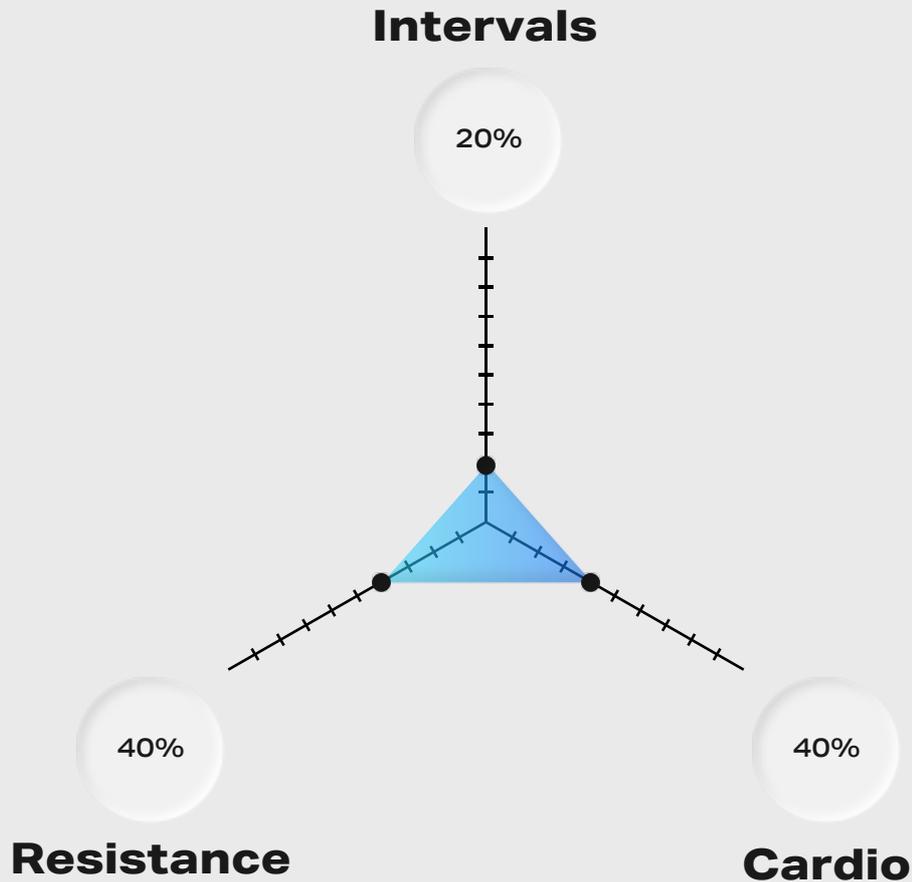
1. Cardiovascular recovery
 - a. The percentage your heartrate (HR) drops in the first one minute of the inactive recovery phase of the exercise protocol in relation to your base HR (your average HR during warm up phase) and maximum HR (your highest HR during the test phase).
2. Complete recovery
 - 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.



DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
Cardio	Cardio	Resistance	Intervals	Cardio	Resistance	Rest

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	Purpose	HR Range	Wattage Range	Speed Range	RPE	Benefits
Zone 5	Short high intensity intervals	168-176 BPM	235-280W		10/10 Feels impossible to continue, completely out of breath, unable to talk	Improves anaerobic capacity and muscle metabolism
Zone 4	Medium high intensity intervals	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
Zone 3	Long medium intensity intervals/ tempo	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
Zone 2	Low intensity cardio training	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
Zone 1	Recovery	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

	Units	06-19-2020	08-19-2020	11-19-2020
VO2 Peak	ml / min / kg	43	46	49
Anaerobic Threshold	at bpm	147	154	164
Ventilatory Threshold	at bpm	90	96	104
Fat-Max	at bpm	94	99	106

VO2 Peak

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

Anaerobic Threshold

The exercise intensity at which the body transitions into Zone 5 where anaerobic metabolism becomes a large part of the body's energy generation

Mechanical Efficiency

The efficiency ratio with which a person's body is transforming energy from nutrients (e.g. fats and carbohydrates) into work.

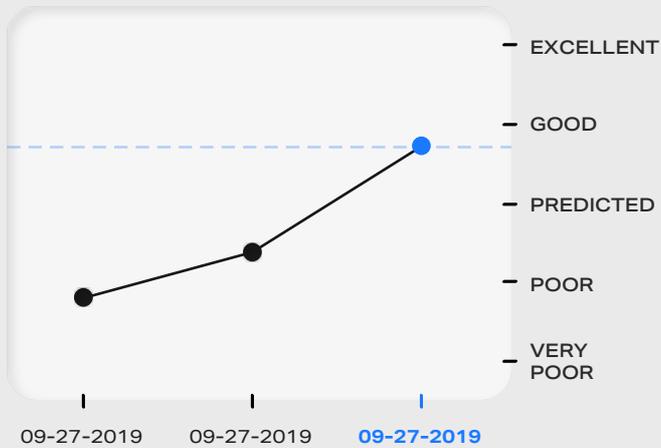
Ventilatory Threshold

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

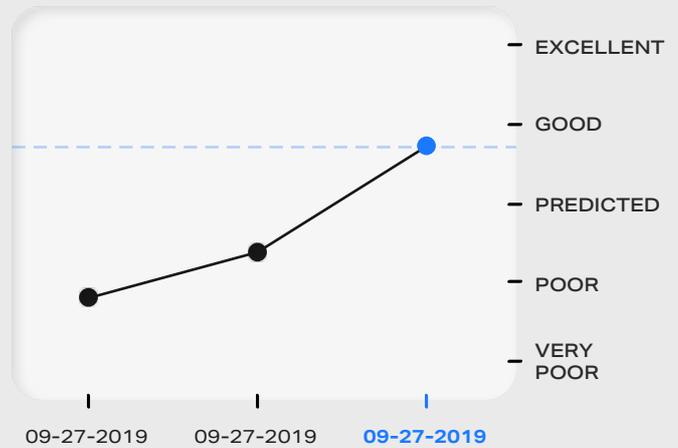
Tidal Volume

The volume of air exchanged with the environment every breathing cycle (litres/breath)

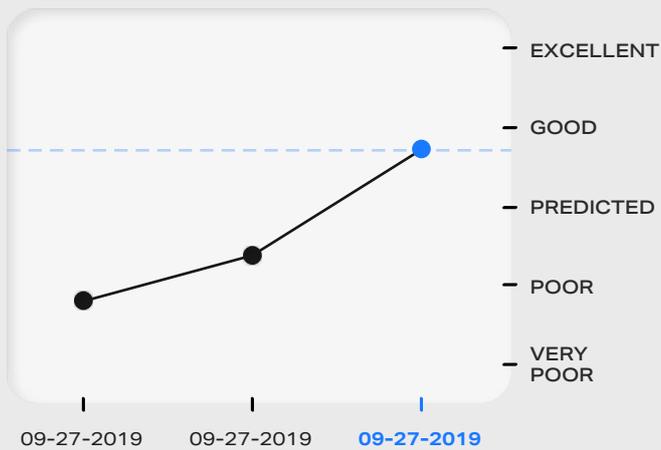
Aerobic Health



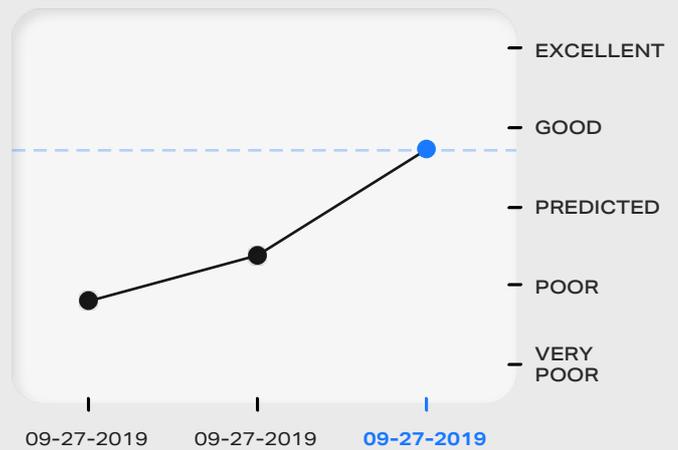
Cardiovascular Fitness



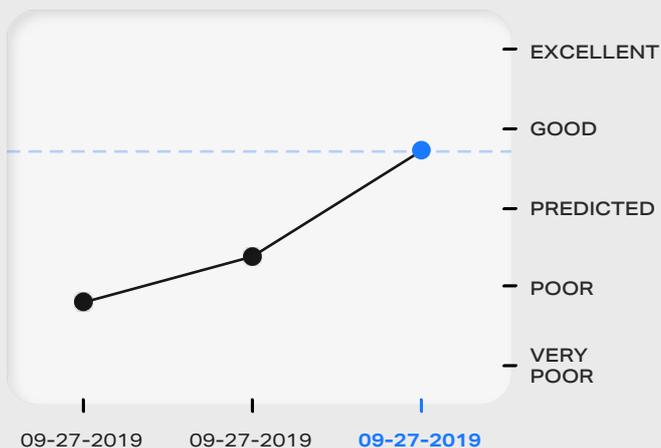
Respiratory Capacity



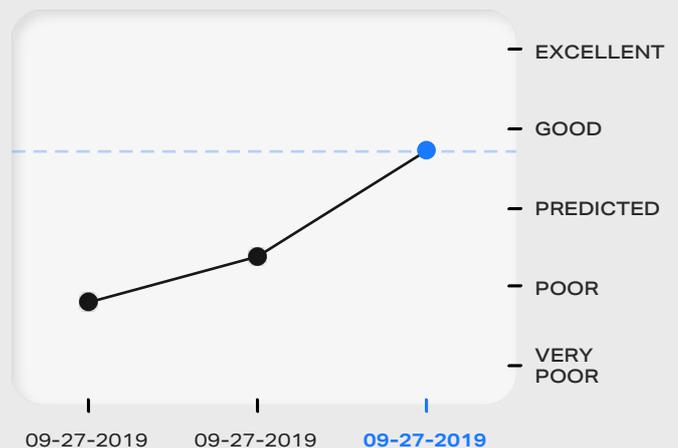
Respiratory Capability



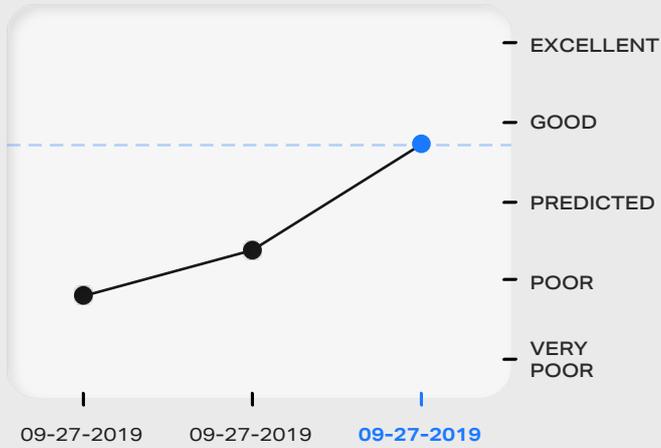
Breathing & Stability



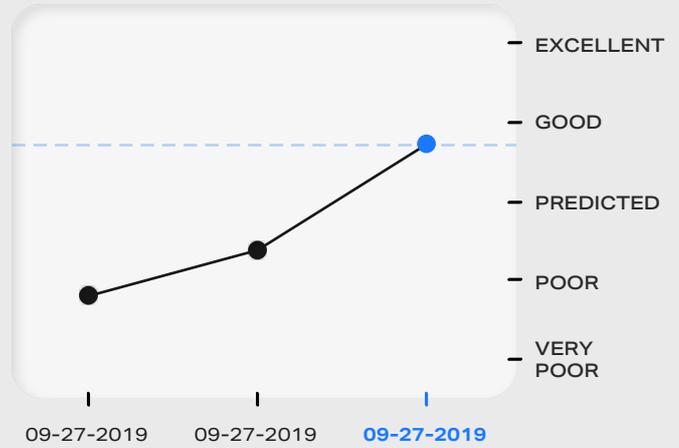
Breathing & Cognition



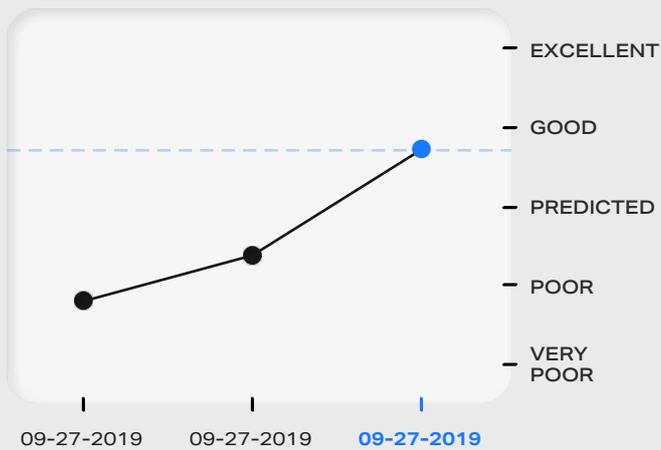
Metabolic Efficiency



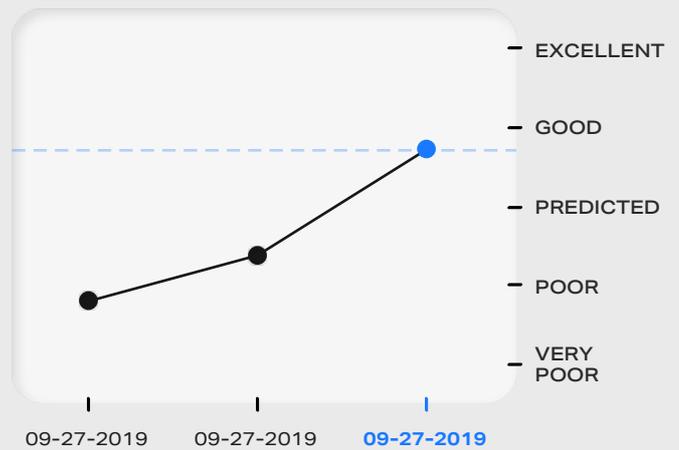
Fat Burning Efficiency



Mechanical Efficiency



Recovery Capacity



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

Your next assessment
should be scheduled on:

AUGUST 2021

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