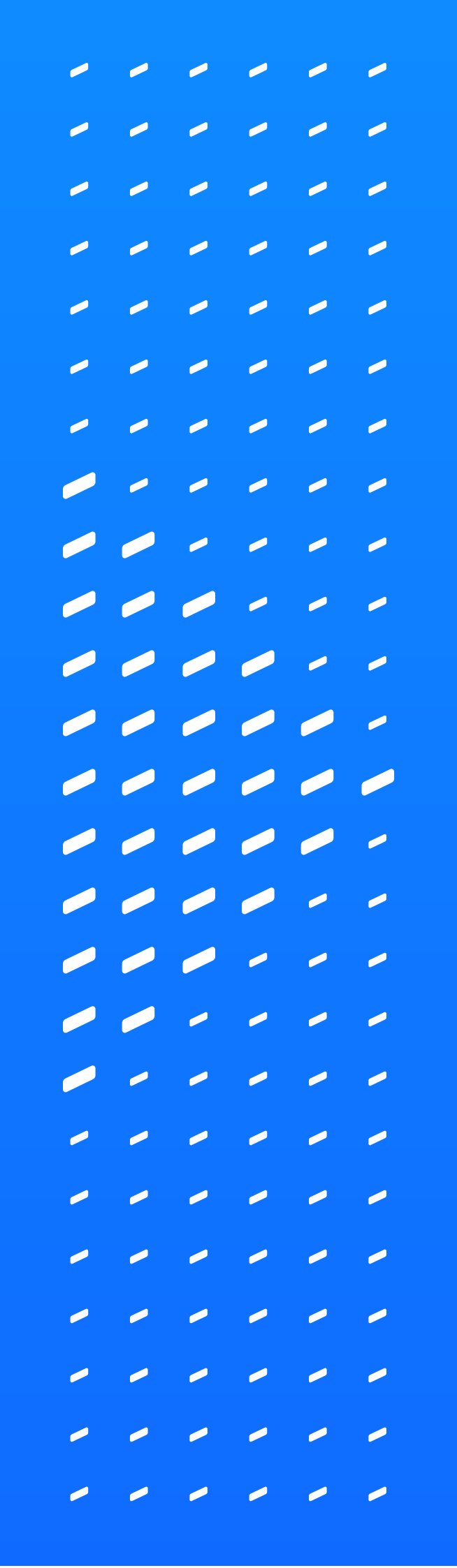


Michael Millers

07/28/2023



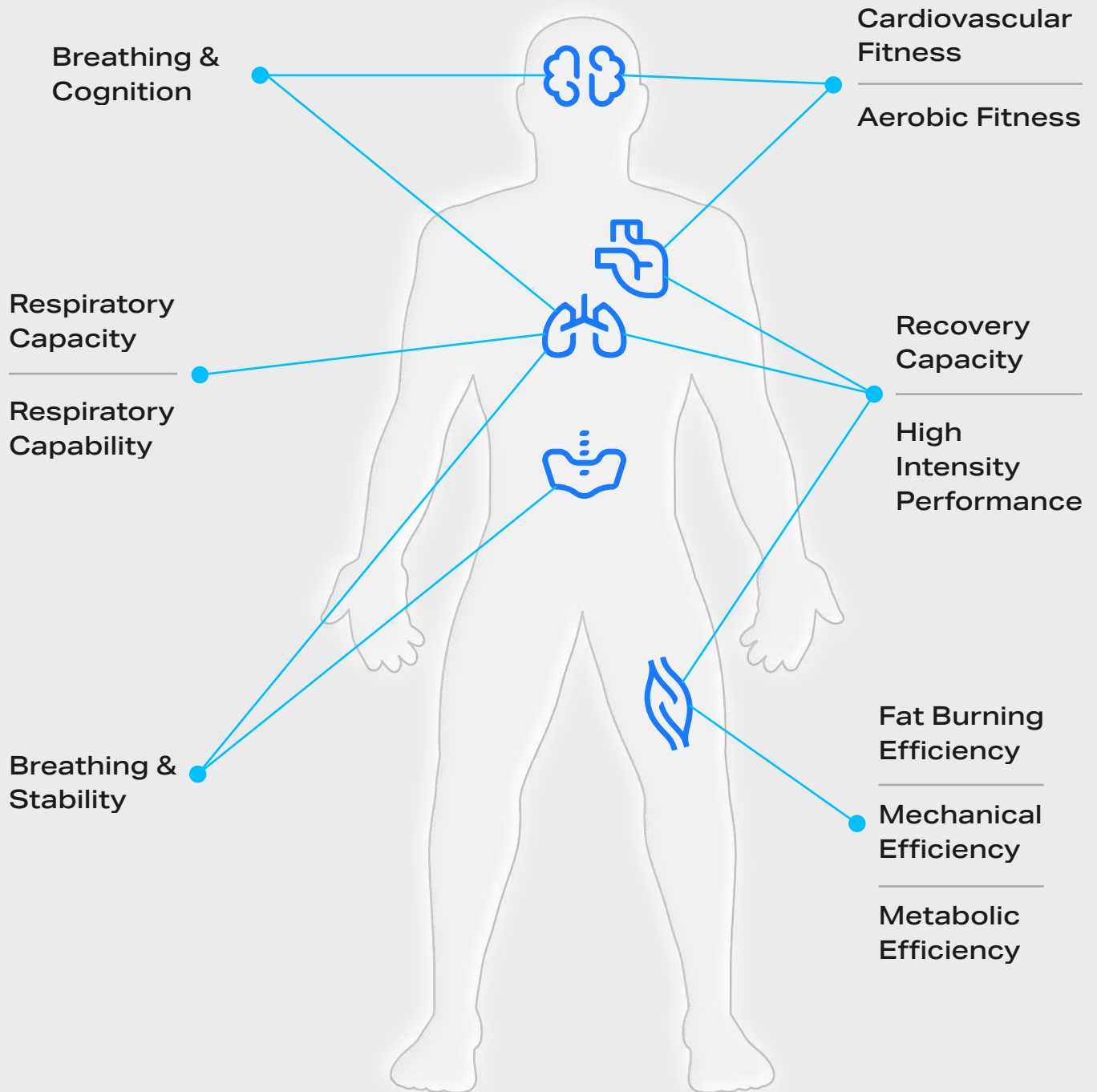
We are what we repeatedly do.

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



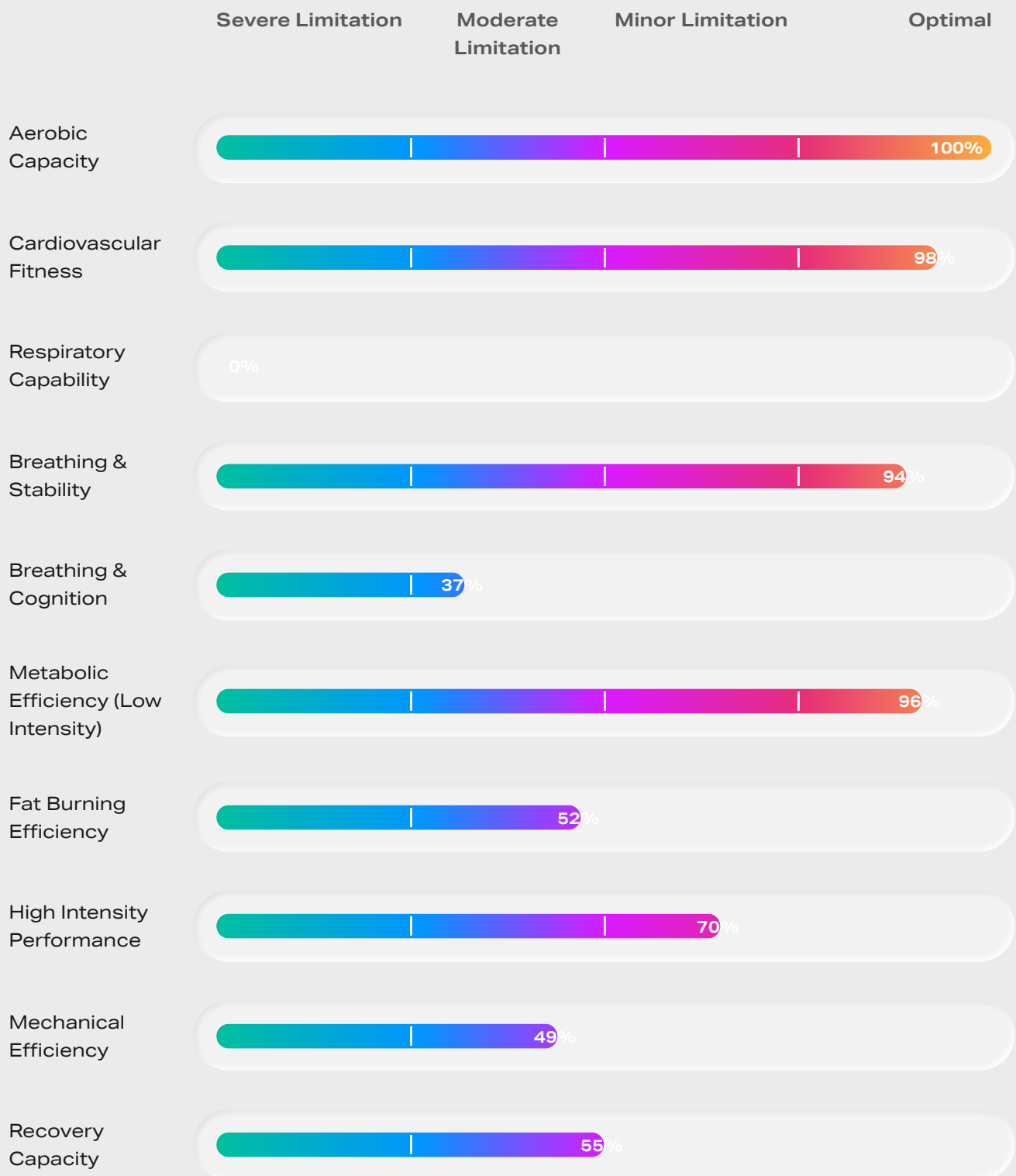
Intro

PFJ



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Aerobic Capacity

This metric represents your ability to exercise at high intensities. Aerobic Capacity is one of the best indicators of overall wellness and best predictors for developing cardiovascular disease. The value of this metric is based on VO₂peak – the maximum amount of oxygen you can use per kilogram per minute – achieved 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 VO₂peak score in comparison with others the same gender and age, as well as the trendline of your VO₂pulse (the amount of oxygen used per beat of the heart (VO₂/HR) as intensity increases).

A low VO₂peak in combination with a decline in your VO₂pulse 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 PNOE 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)

An inability to use your capacity and a high breathing frequency at any intensity throughout the test 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 one of the most effective ways 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 exercises concentrating on coordinating breathing volumes and breathing frequencies is the best method 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 (VT) 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 VT in relation to your respiratory capacity (FEV₁) will result in a lower score. A low VT (along with hyperventilation) is a predictor of musculoskeletal dysfunctions such as lower back pain. Limitation specific respiratory training exercises concentrating on volume is one of the most effective ways 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 performance. 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 (Low Intensity)

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, height 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 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 re-feeding cycles will improve the score of this metric.



High Intensity Performance

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 use (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).



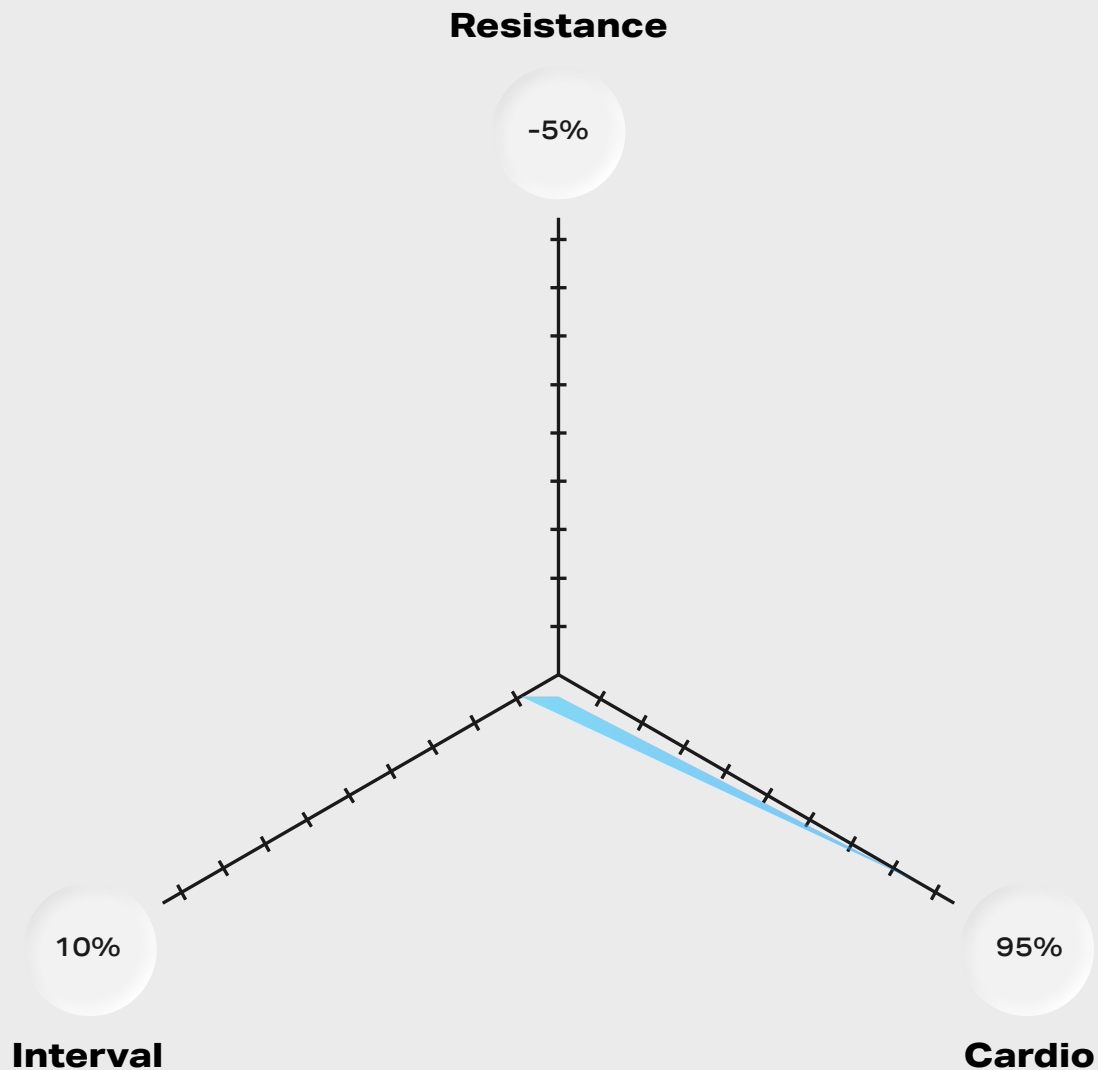
2. Metabolic recovery

- 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 recover is directly related to your level of cardiorespiratory and metabolic fitness. A nominal 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 Increase Muscle Mass/Strength 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.

Building muscle mass requires proper strength training and fueling. On the other hand, low to medium intensity cardio training will allow you to maintain a high fat-burning capacity while preserving the muscle mass you build during your strength training days. Keep in mind that rest is as important as the work you put in at the gym. The majority of failed muscle building attempts are due to incorrect nutrition or insufficient rest.

Strength training should include weight-lifting and a variety of repetitions. Doing 3-5 repetitions at 80-90% of your 1 Rep MAX will help you build strength, whereas 8-12 repetitions at 50-60% of your 1 Rep MAX will help you increase muscle mass. In general you should avoid using weights in exercises with high number of repetitions and high movement velocity since they do not support muscle growth and usually lead to injuries.

Zone	HR Range	Wattage Range	Speed Range	RPE	Benefits	Training Type
Zone 5	175 - 183 BPM	-	15 - 16 KM/H	10/10 Feels impossible to continue, completely out of breath, unable to talk	Improves VO2peak, aerobic capacity and muscle metabolism	Short high intensity intervals
Zone 4	158 - 175 BPM	-	11 - 15 KM/H	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	128 - 158 BPM	-	7 - 11 KM/H	6-7/10 On the verge of becoming uncomfortable, short of breath, can speak a sentence	Improves VO2 and cardiorespiratory fitness through increases in cardiac strength and improvements in O2 dependent storage and lactate shuttle	Long medium intensity intervals/tempo
Zone 2	120 - 128 BPM	-	7 - 7 KM/H	4-5/10 Feels 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 - 120 BPM	-	7 - 7 KM/H	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	07/28/2023	12/29/2020
Fat-Max	at BPM	126	117
Ventilatory Threshold 1 (VT1)	at BPM	127	118
Ventilatory Threshold 2 (VT2)	at BPM	172	173
VO2 Peak	ml / min / kg	62	73

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.

Ventilatory Threshold 2 (VT2)

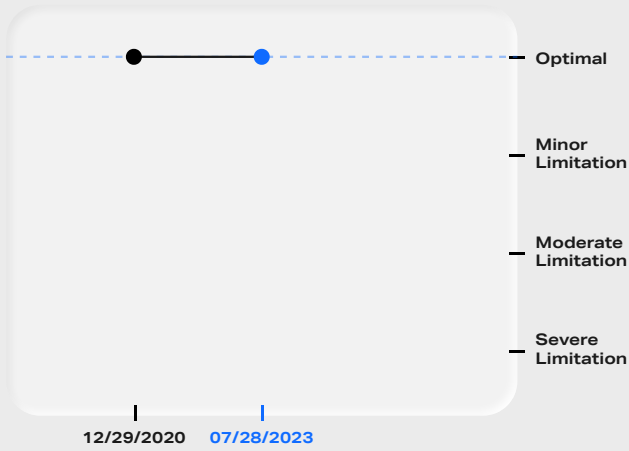
The exercise intensity at which the body transitions into Zone 5 where anaerobic metabolism becomes a large part of the body's energy generation.

VO2 Peak

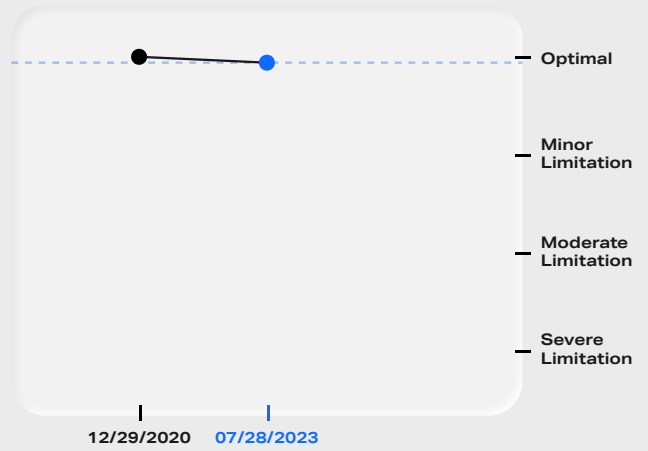
The maximum oxygen consumption in milliliters per kilogram per minute (ml/kg/min) of body weight achieved during the test.

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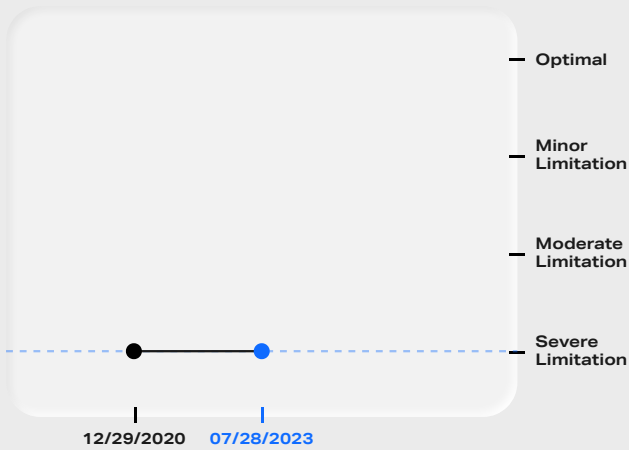
Aerobic Capacity



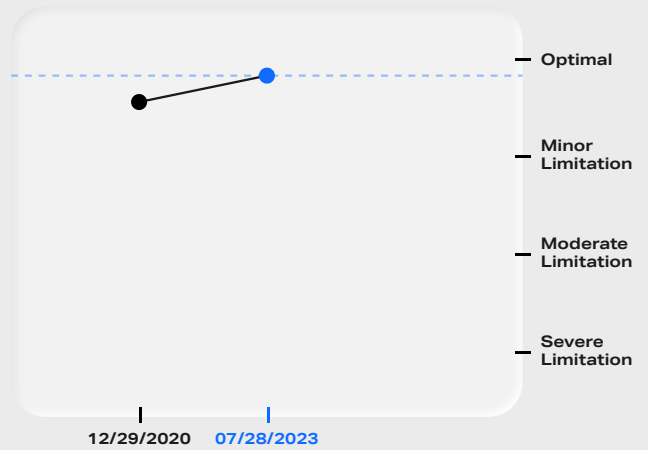
Cardiovascular Fitness



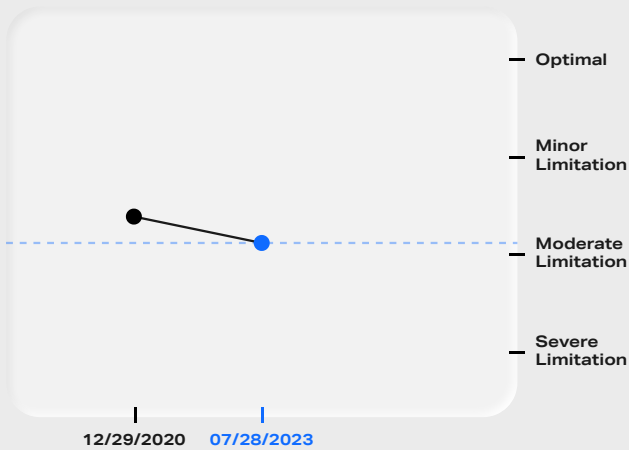
Respiratory Capability



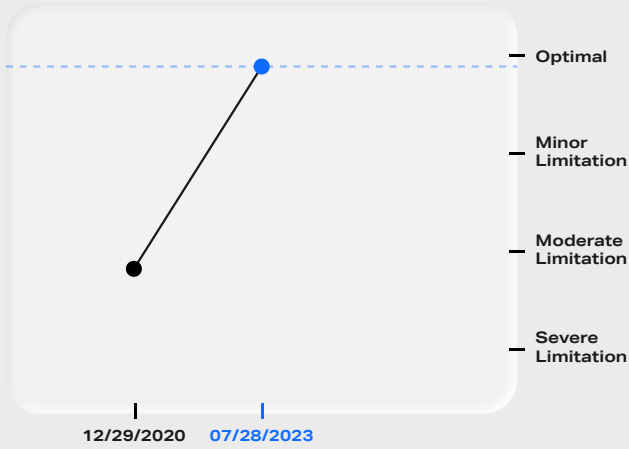
Breathing & Stability



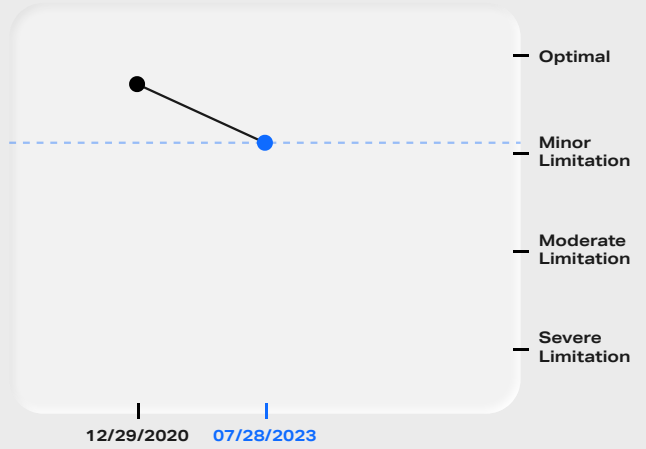
Breathing & Cognition



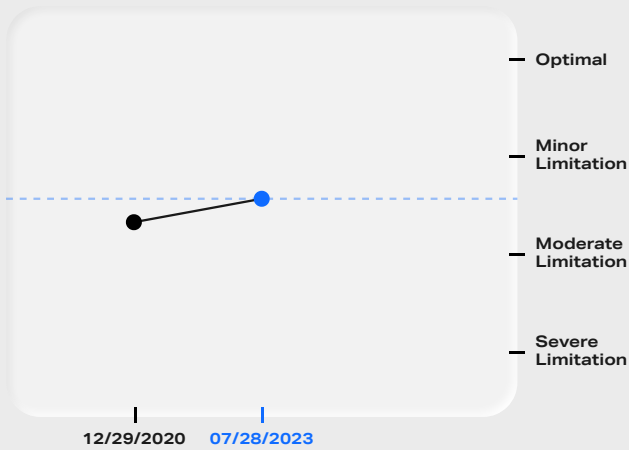
Metabolic Efficiency (Low Intensity)



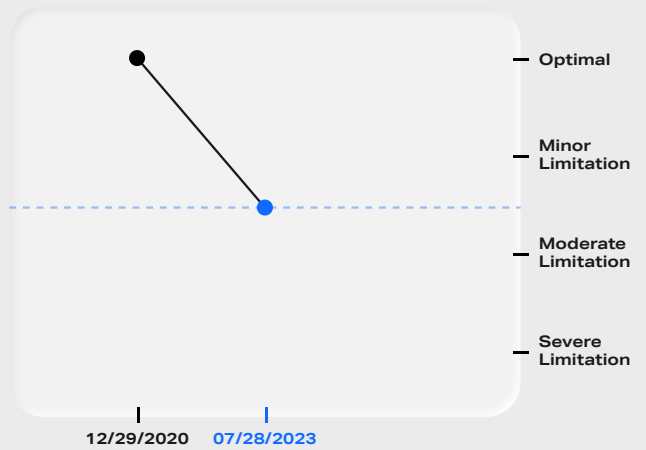
High Intensity Performance



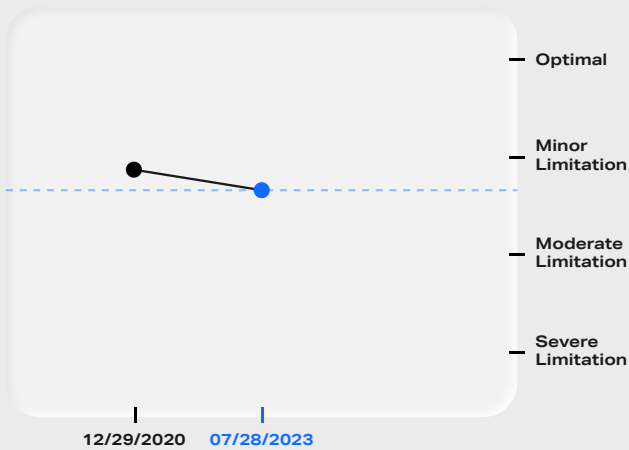
Fat Burning Efficiency



Mechanical Efficiency



Recovery Capacity



Fuel Usage

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Heart Rate	VOL L/min	Kc/L O2	Kc/min	Calories / hour	% Fat	% Carbs
180	4983.76	0.0051	25.49	1529.65	0	100
175	5167.88	0.005	25.94	1556.22	5.15	94.85
170	4635.46	0.005	23.04	1382.44	12	88
165	4371.37	0.0049	21.58	1294.64	19.92	80.08
160	4115.03	0.0049	20.24	1214.28	24.88	75.12
155	3923.8	0.0049	19.29	1157.43	25.55	74.45
150	3772.01	0.0049	18.54	1112.25	25.8	74.2
145	3675.14	0.0049	18.1	1085.8	24.3	75.7
140	3420.97	0.0049	16.73	1003.66	33.55	66.45
135	3206.58	0.0048	15.54	932.35	46.47	53.53
130	2941.33	0.0048	14.24	854.24	48.25	51.75
125	2682.24	0.0048	12.88	772.77	58.53	41.47
120	2321.52	0.0048	11.07	664.07	70.5	29.5
115	2241.44	0.0048	10.68	641.05	71.22	28.78
110	1866.31	0.0048	8.89	533.6	71.34	28.66
105	1861.64	0.0048	8.93	536	60.88	39.12
100	1635.18	0.0048	7.85	470.76	61.03	38.97
95	1533.55	0.0048	7.3	438.18	71.67	28.33
90	1398	0.0047	6.62	396.96	79.67	20.33
85	1297.48	0.0047	6.13	367.92	83.62	16.38
80	1182.7	0.0047	5.52	331.48	99.64	0.36
75	845.99	0.0048	4.08	244.52	55.36	44.64

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

Your next assessment
should be scheduled on:

10/28/2023

^R
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