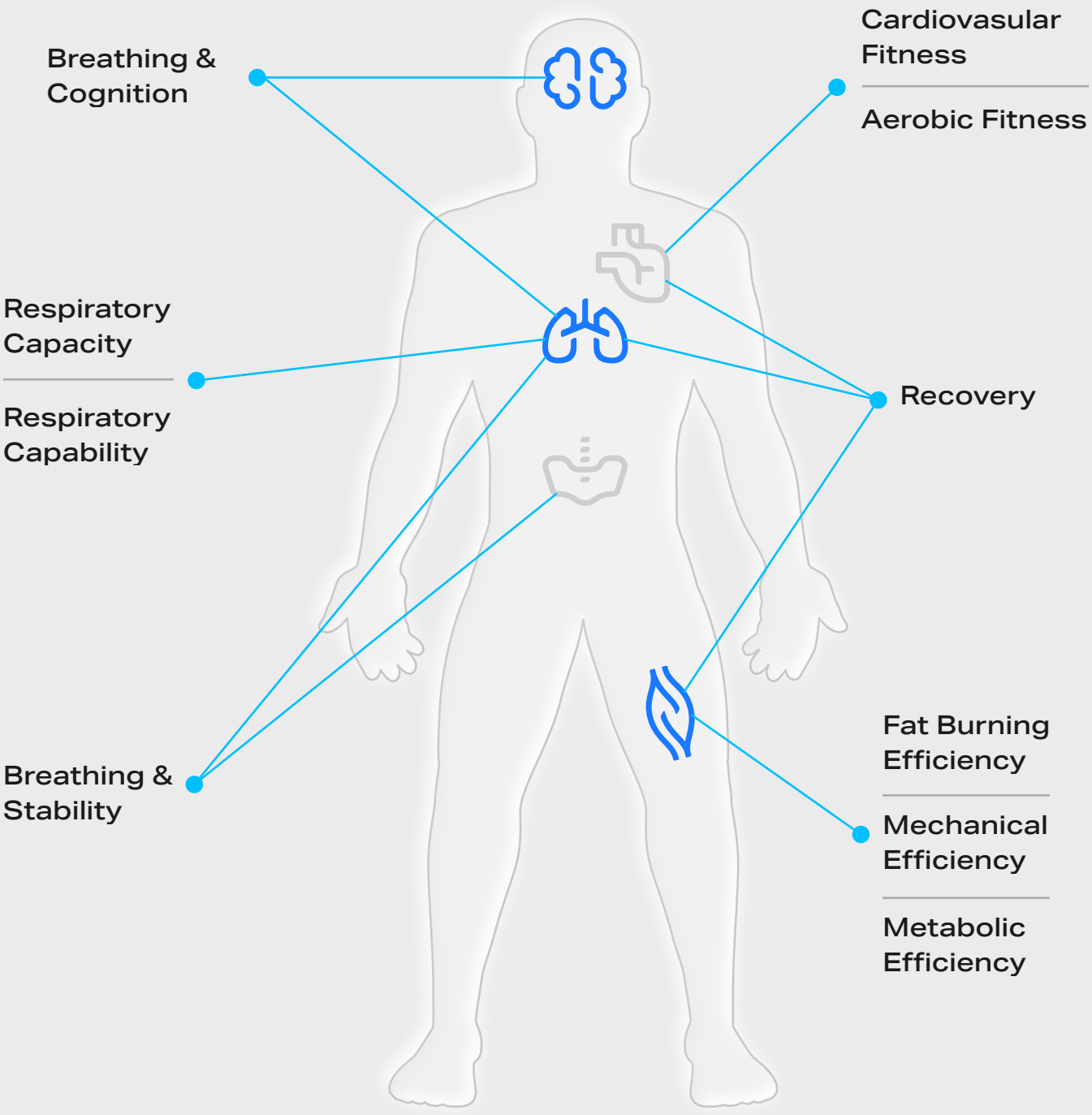
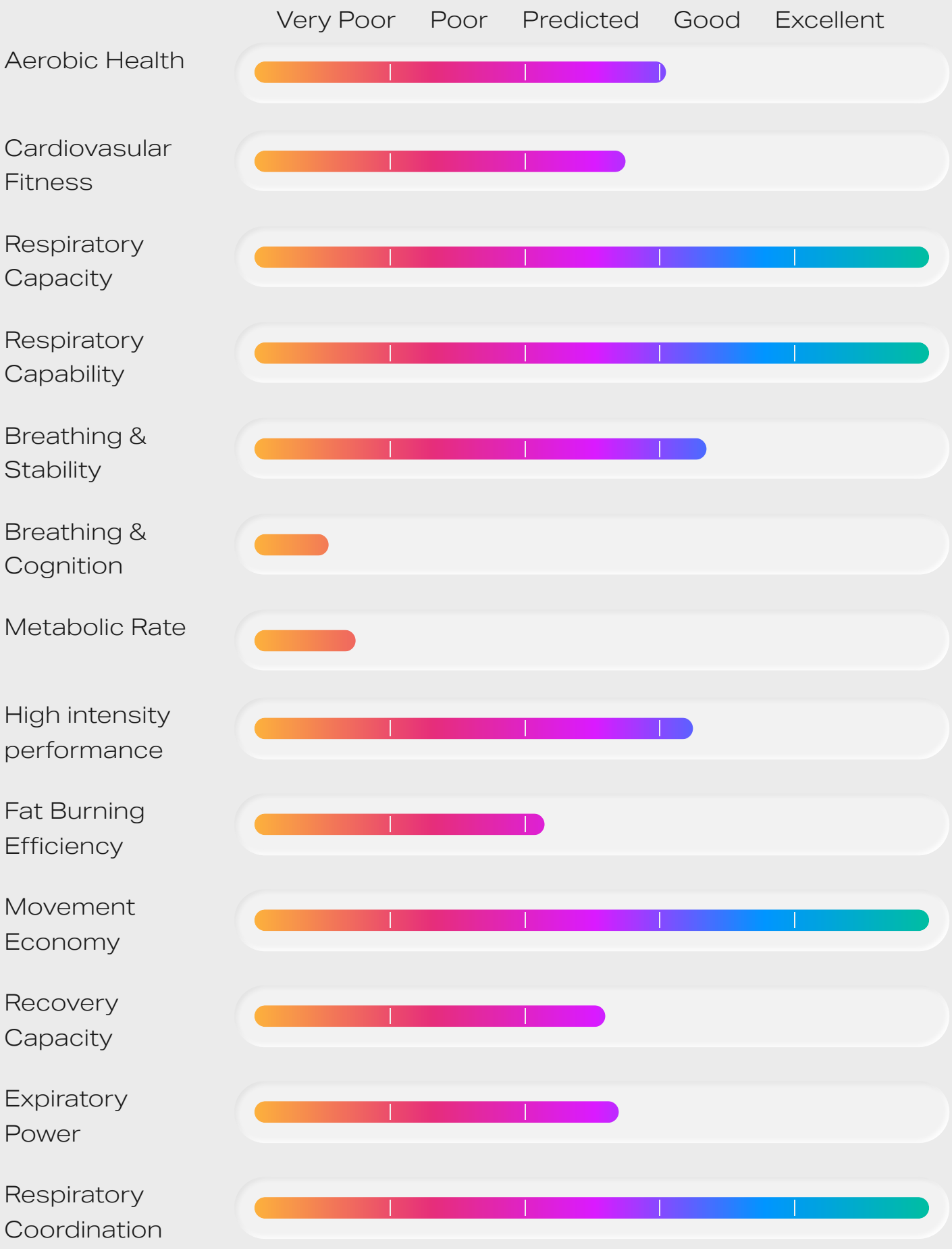
PNOĒ Active Metabolic Rate (AMR) Report

- Aerobic Health
- Respiratory Coordination
- High-intensity Performance
- Cardiovasular Fitness
- Breathing & Cognition
- Metabolic Rate
- Respiratory Capacity
- Breathing & Stability
- Recovery Capacity
- Respiratory Capability
- Fat Burning Efficiency
- Energy Consumption & Fueling
- Expiratory Power
- Movement Economy

Overview


Breathing & Cognition
Cardiovasular Fitness
Aerobic Fitness
Respiratory Capacity
Respiratory Capability
Recovery
Breathing & Stability
Fat Burning Efficiency
Mechanical Efficiency
Metabolic Efficiency

Overview


Very Poor
Poor
Predicted
Good
Excellent
Aerobic Health
Cardiovasular Fitness
Respiratory Capacity
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High intensity performance
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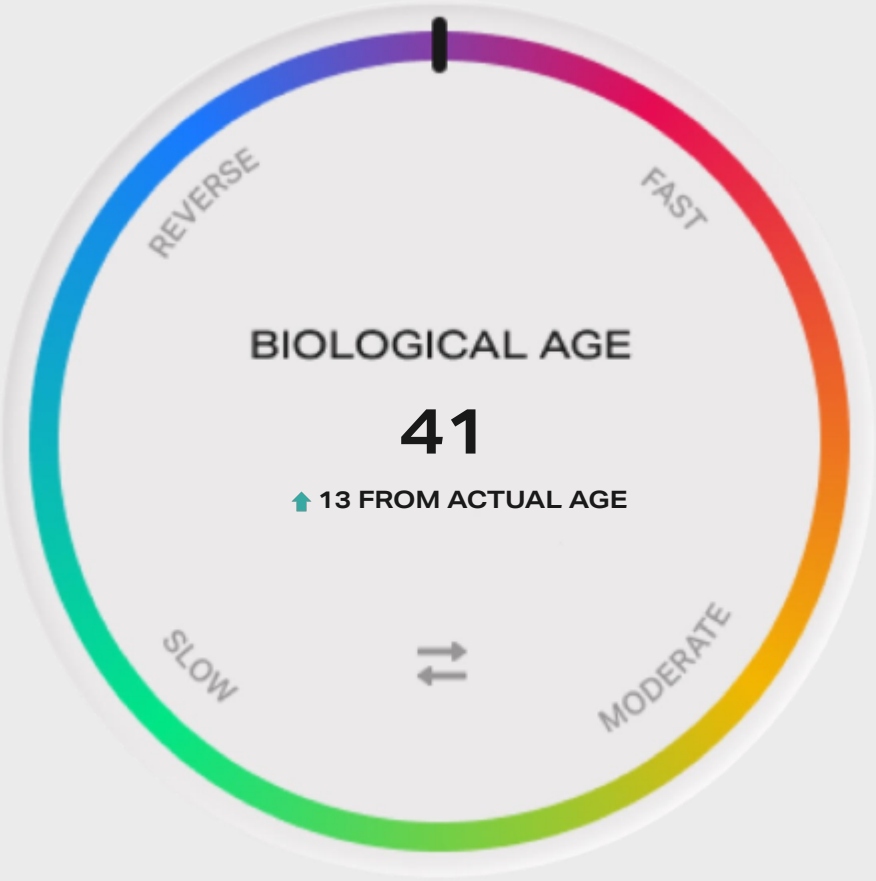
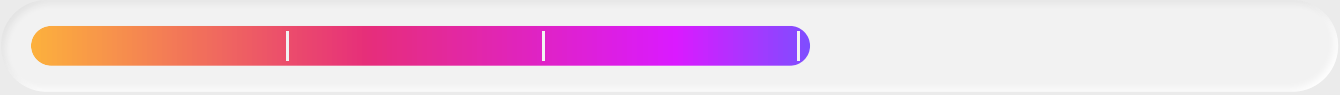
Respiratory Coordination



PNOĒ estimates your biological age based on your cardio-respiratory fitness (VO2max), cellular health, and metabolic efficiency. You can improve these metrics by hitting your nutrition, activity, and recovery goals.

Aerobic Health 66%



0	25	40	55	70	85	100
	Very Poor	Poor	Predicted	Good	Excellent	

What it means

It's a gauge of your overall health and provides the strongest predictor of how long and how well you will live. It's also one of the most vital indicators of athletic performance.

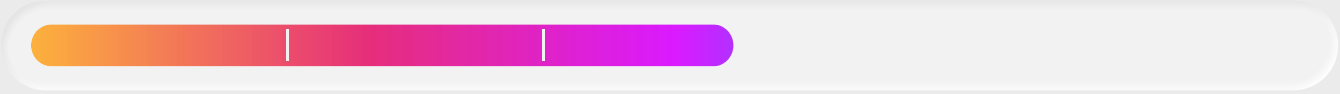
Why it's important for your performance

Your body needs oxygen to break down nutrients (e.g., fats, carbs, proteins) and power the movement you are asking it to do. When oxygen supply is disrupted or becomes insufficient based on the energy demands of your activity, your body will shift to Anaerobic Metabolism, a process that is unsustainable and produces fatigue. Hence, the more oxygen your body can absorb, the more movement it can produce without getting tired.

Why it's important for your wellness

Oxygen is the molecule of life. It's the a critical element for your metabolism, namely the process by which your cells "burn" nutrients (e.g., fats, carbs, proteins) to release their energy and keep you alive and moving. Your heart, lungs, and muscle all participate in this process. Whenever any of them suffers, your Aerobic Health will be immediately reduced. That's why The American Heart Association has recognized it as the most holistic gauge of your overall health. It's also no surprise that every significant chronic condition (i.e. cardiovascular disease), COPD, metabolic syndrome is related to these systems and is manifested when their ability to uptake or utilize oxygen is reduced.

Cardiovascular Fitness 60%



0	25	40	55	70	85	100
	Very Poor	Poor	Predicted	Good	Excellent	

What it means

It's a gauge of your cardiovascular system's ability to pump oxygen-rich blood to your body. Your cardiovascular system includes: your heart, blood vessels (i.e. arteries, veins), blood (i.e. what flows within your arteries and veins).

Why it's important for your performance

Your body needs oxygen to break down nutrients (e.g., fats, carbs, proteins) and power the movement you are asking it to do. When the oxygen supply is disrupted or becomes insufficient based on the energy demands of your activity, your body will shift to Anaerobic Metabolism, a process that is unsustainable and produces fatigue. The cardiovascular system pumps oxygen to your cells and is thus a critical system in keeping your body continuously moving.

Why it's important for your wellness

Cardiovascular disease is the number one cause of death and includes several life-threatening conditions such as ischemic heart disease (AKA Coronary Artery Disease), heart failure, and valvular disease. A low VO2peak score combined with a flattening or decline in O2pulse is considered a reliable risk factor for them, one which can help you act early.

Respiratory Capability 100%

What it means

It's a gauge of whether you use your lung capacity during training at a satisfactory level. Respiratory Capability differs from Respiratory Capacity since the former refers to whether you can use whatever volume your lungs have, whereas the latter refers to whether your lungs have the necessary volume in the first place.

Why it's important for your performance

Athletic performance requires a high Respiratory Capacity and Respiratory Capability as you need to have enough lung volume and be able to use it in order to supply your muscles with enough oxygen to function properly. A low Respiratory Capability will limit your athletic performance similar to a low Respiratory Capacity by lowering muscle oxygenation and leading to metabolic fatigue.

Why it's important for your wellness

Respiratory Capability is complementary to Respiratory Capacity as you need to be able to have enough lung volume but also be able to use it in order to supply your body with enough oxygen This is essential for your overall well-being as oxygen deprivation will cause your muscles and organs to work less effectively. This can be manifested through feelings of fatigue during daily activities, dizziness, and negative mood.

Respiratory Capacity 100%

What it means

It's a gauge of whether your lungs can expand and contract enough during training based on your age and gender.

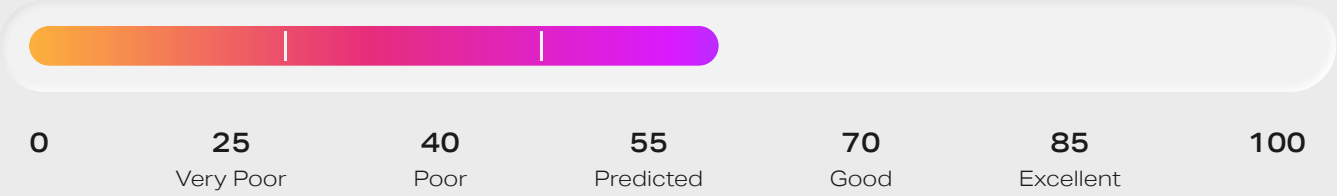
Why it's important for your performance

A high Respiratory Capacity ensures that your lungs can deliver enough oxygen to your body. This is critical for athletic performance as oxygen deprivation is the primary factor preventing your muscles from producing any type of movement. Specifically, oxygen deprivation leads to metabolic fatigue buildup, reduction in fat burning capacity, and reduced recover capacity.

Why it's important for your wellness

A high Respiratory Capacity ensures that your lungs can deliver enough oxygen to your body. This is essential for your overall well-being as oxygen deprivation will cause your muscles and organs to work less effectively. This can be manifested through feelings of fatigue during daily activities, dizziness, and negative mood.

Expiratory Power 59%



What it means

It's a gauge of whether your lungs have the strength to fully contract during exhalation.

Why it's important for your performance

Strong exhalation is critical for athletic performance as clearing carbon dioxide is a key mechanism for removing fatigue-related metabolites from your body during exercise. When carbon dioxide isn't effectively cleared metabolic fatigue in the muscles starts almost immediately.

Why it's important for your wellness

Having lung muscles that are strong enough to effectively empty your lungs during exhalation is important for ensuring proper breathing function. Pushing enough air out during exhalation is necessary for clearing carbon dioxide effectively. When exhalation isn't strong enough carbon dioxide may start to build up leading to feelings of fatigue, dizziness, and even chronic disease such as COPD.

Respiratory Coordination 100%

What it means

It's a gauge of whether your breathing follows a normal pattern during training that's not negatively impacting your posture, brain cognitive function, and muscle oxygenation.

Why it's important for your performance

Irregular breathing patterns during training, also known as hyperventilation, increase carbon dioxide levels in the blood making it harder for oxygen to enter the cells of your working muscles. This in turn will limit your ability to move as oxygen is the most important element for athletic performance.

Why it's important for your wellness

Irregular breathing patterns during training, also known as hyperventilation, will compromise brain oxygenation and destabilize your core. Lower brain oxygenation causes feelings of dizziness and fatigue. A destabilized core elevates the risk of injuries such as lower back pain.

Breathing & Cognition 16%

What it means

It's a gauge of how your breathing affects your cognitive function during exercise.

Why it's important for your performance

Hyperventilation during training reduces oxygen delivery to the brain almost immediately, causing you to react slower and respond less effectively to situations requiring rapid reflexes. Hyperventilation doesn't only occur during high exercise intensities. More than 30% of athletes suffer from subtle breathing abnormalities in low to medium exercise intensities, as well, impacting their cognitive function during most of their athletic performance.

Why it's important for your wellness

Hyperventilation is considered one of the most common but under-diagnosed conditions that severely impact the quality of life in our society. It's estimated that 15% of the population chronically hyperventilates, with only a few knowing about it. Chronic hyperventilation reduces cognitive function at work, increases feelings of fatigue, and is associated with higher rates of anxiety and panic attacks.

Breathing & Stability 72%

What it means

It's a gauge of how your breathing affects your posture, likelihood of musculoskeletal injury, and lower back pain.

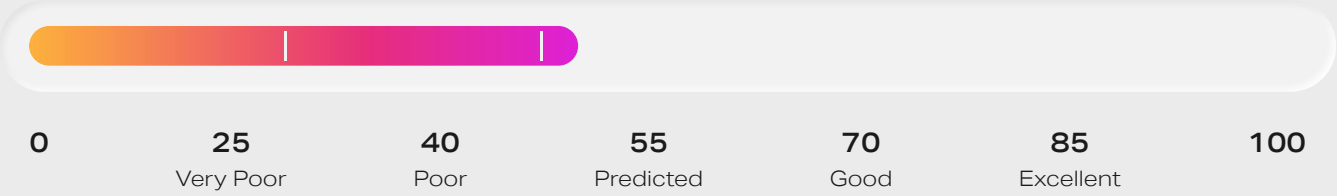
Why it's important for your performance

Abnormal breathing patterns are critical contributors to musculoskeletal injuries across all sports. Moreover, they directly reduce performance in endurance sports by reducing movement economy and increasing the rate with which your body accumulates fatigue. Correcting breathing abnormalities that destabilize your core is one of the easiest and most impactful wins in your training.

Why it's important for your wellness

Abnormal breathing patterns are the most significant risk factor for musculoskeletal problems like lower back pain which currently represents the most significant burden to health systems and one of the most important factors reducing the quality of life. Correct breathing will vastly improve posture, feelings of musculoskeletal pain, and quality of life.

Fat Burning Efficiency 48%



What it means

It's the gauge of your cells' ability to use fat as a fuel source during exercise. Your cells primarily "burn" fats and carbohydrates to release the energy they contain and power your body's movement. The higher your Fat-burning Efficiency, the more your cells will rely on fats as a fuel source. Fat-burning Efficiency is also one of the most vital indicators of cellular health.

Why it's important for your performance

Fat is a fuel source that's abundant and sustainable for your body. It's abundant since the average person's body can typically store ~30,000 kcal worth of fat (vs. ~2,000 kcal worth of carbs) and sustainable because it doesn't produce fatigue to the working muscles when utilized. Therefore, the greater your Fat-burning Efficiency is, the higher your ability to exercise longer and harder.

Why it's important for your wellness

Fat is a fuel source that requires oxygen to be "burnt." The more oxygen your cells can uptake and utilize, the healthier they are and the more they can rely on fat as a fuel source. That's why Fat-burning Efficiency is one of the most powerful indicators of cellular health, which is strongly correlated with longevity and health.

Movement Economy 100%

What it means

It's a gauge of how many calories you burn during exercise. In other words, it demonstrates whether your body burns more or fewer calories than what's predicted based on your gender, and age.

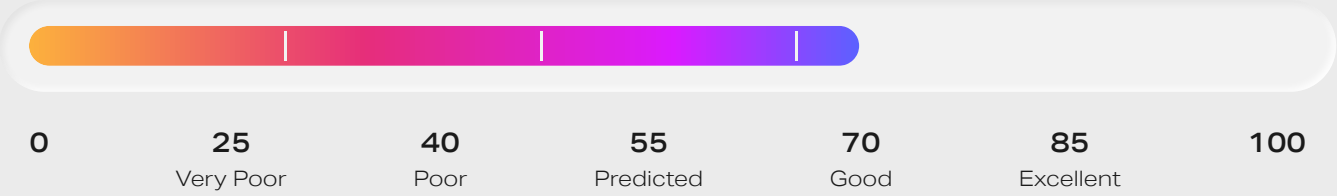
Why it's important for your performance

Having a high Movement Economy is valuable for all sports and especially for endurance sports. It ensures your body will require less energy to function, it results in reduced food intake during athletic events, and minimizes metabolic fatigue.

Why it's important for your wellness

Staying lean or losing weight requires having low Movement Economy at low exercise intensities (e.g., casual walking, or in other words having a low Mechanical Efficiency. In plain words, you want your body to be uneconomical and burn a high number of calories during your daily activities. Check your Metabolic Rate score for more information on how Mechanical Efficiency can impact your metabolism and your ability to lose weight.

High-intensity Performance 70%



What it means

It's a gauge of how well your lungs and heart perform at high exercise intensities.

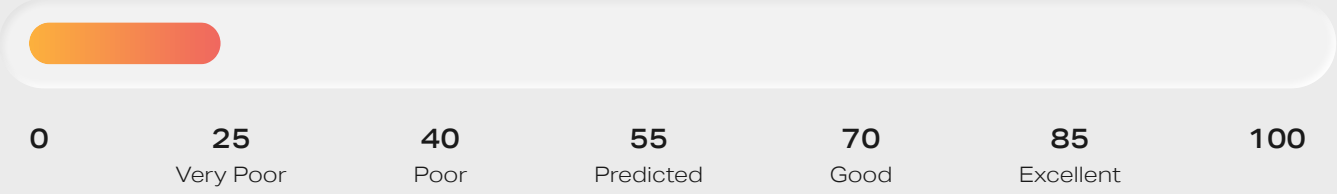
Why it's important for your performance

Having a high and continuously increasing O2 Pulse and VO2/BF throughout high exercise intensities will ensure that sufficient oxygen is delivered to your working muscles. This will, in turn, ensure your body remains predominantly in the aerobic state when exercising at high intensities and therefore prevent metabolic fatigue.

Why it's important for your wellness

Having a high and continuously increasing O2 Pulse and VO2/BF throughout high exercise intensities will ensure that sufficient oxygen is delivered to your working muscles. This will, in turn, ensure your body remains predominantly in the aerobic state when exercising in high intensities, thus allowing you to work out in intensities where you burn the most calories.

Metabolic Rate 20%



What it means

It's a gauge of how fast or slow your metabolism is. In other words, whether your body is burning more or fewer calories than what's predicted based on your weight, gender, age, and height.

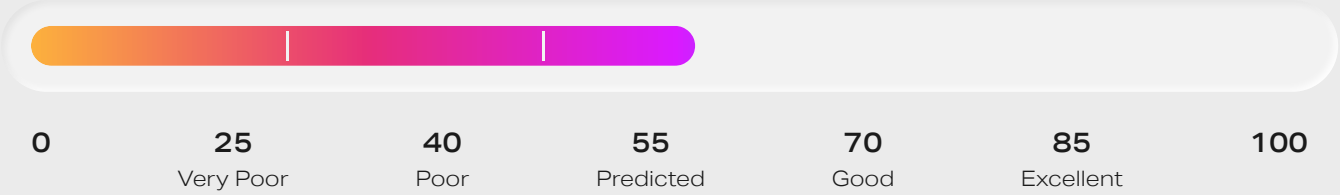
Why it's important for your performance

A high Metabolic Rate (i.e., having both a high Resting Metabolic Rate and low mechanical efficiency), indicates low levels of exercise-related fatigue. A reduction in Resting Metabolic Rate and/or an increase in Mechanical Efficiency at low exercise intensities is highly correlated with undue exercise strain accumulation.

Why it's important for your wellness

A high Metabolic Rate will protect you from weight gain as your body will burn more calories, thus allowing you to eat more without gaining weight. It also facilitates weight loss as burning more calories means that even a modest restriction in food intake will result in a meaningful weight loss. A high Metabolic Rate is attained through a high Resting Metabolic Rate and a low Mechanical Efficiency at low exercise intensities.

Recovery Capacity 57%



What it means

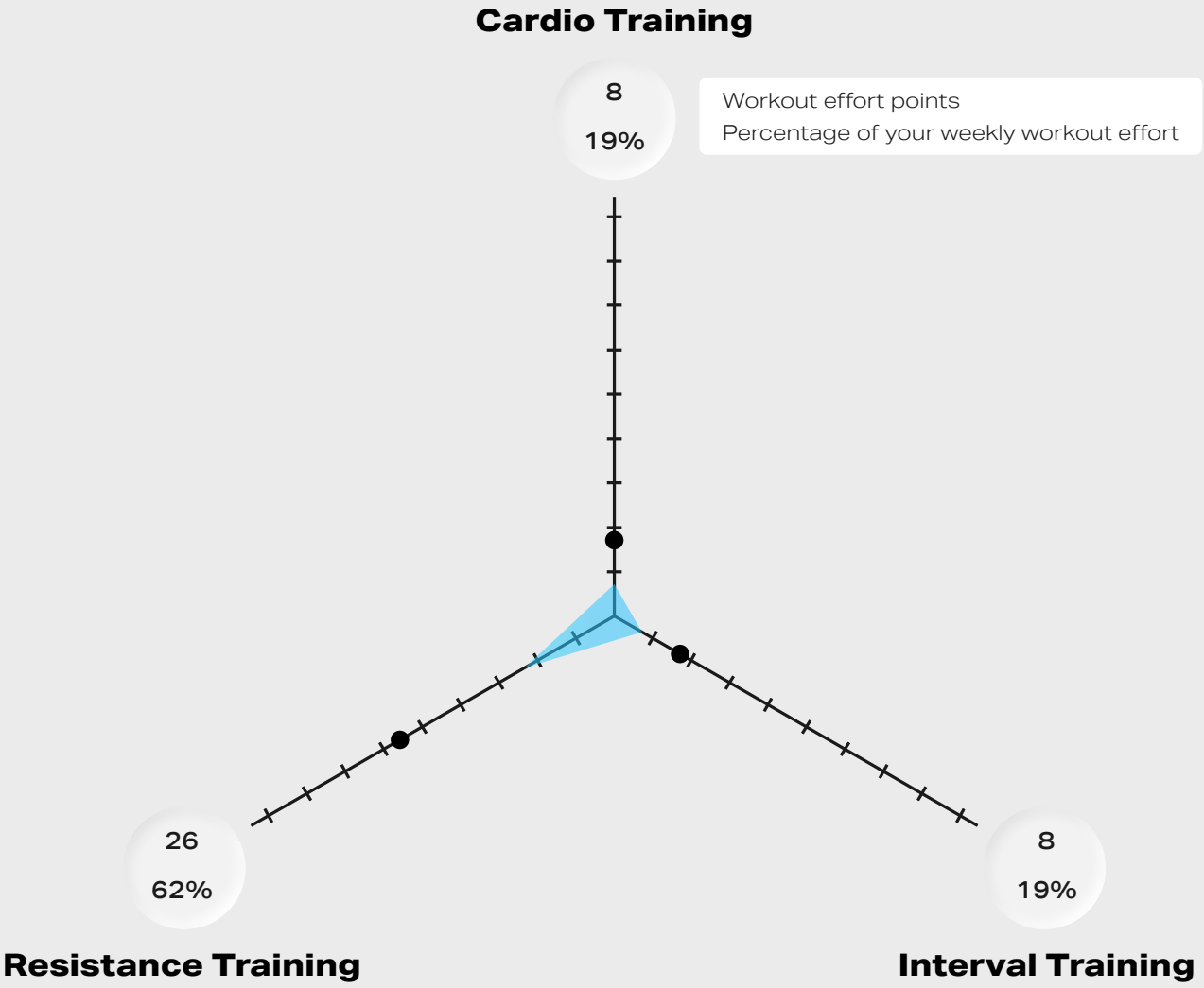
It's a gauge of your ability to efficiently recover from physical exercise.

Why it's important for your performance

Having a high Recovery Capacity is essential for every sport and especially for dynamic ones (e.g., basketball) where there is a continuous change between exercise bouts following recovery phases. The higher your Recovery Capacity is, the greater your body's ability to recover and the lower the fatigue it accumulates.

Why it's important for your wellness

Having a high Recovery Capacity is essential for any type of workout and especially for interval training (e.g., spinning) where there is a continuous change between exercise bouts following recovery phases. The higher your Recovery Capacity is, the greater your body's ability to recover, the longer you can exercise, and the more calories you will burn.


Cardio Training
8
19%
Workout effort points
Percentage of your weekly workout effort
26
62%
8
19%
Resistance Training
Interval Training

Interval Training - 1 sessions per week

Type	Sessions per week	Sets	Work time / Zone	Recovery time / Zone	Effort
Long	1	2-3	4-10 min | 4	1:½ | 1	8

Cardio Training - 1 sessions per week

Type	Sessions per week	Sets	Work time / Zone	Recovery time / Zone	Effort
Heavy	1	Continuous	20-40 min | around VT2	n/a |	8

Resistance Training - 2 sessions per week

Type	Sessions per week	RIR	Recommended break between sets	Effort
Strength				
Hypertrophy	2	0-2	1.5 - 3 min	13
Muscular Endurance				

Intervals

Short
They are very fast bouts of intense physical activity where your goal for every set is to get and stay in the highest end of zone 5 for approximately 30 seconds and then recover in zone 1 for 60 seconds. Your work and recovery time begin when you enter zone 5 and 1, respectively.

Medium
They are short bouts of intense physical activity where your goal for every set is to get and stay in the lower end of zone 5 for 1 to 4 minutes, depending on your fitness level, and then recover in zone 1 for the same time as your work duration. Your work and recovery time begin when you enter zone 4 and 1, respectively.

Long
They are long bouts of medium intensity where the goal for every set is to get and stay in zone 4 for approximately 10 minutes and then recover in zone 1 for about 5 minutes. Your work and recovery time begin when you enter zone 4 and 1, respectively.

Cardio

Base
It's a steady-state bout of physical activity that should last at least 45 minutes and take place in zone 2.
Moderate
It's a steady-state bout of physical activity that should last between 45 and 60 minutes and take place in zone 3.
Hard It's a steady-state bout of physical activity that should last between 20 and 40 minutes and take place in zone 4.

Resistance Training

Hypertrophy
Resistance training with the intent to increase muscle size and total muscle mass. It's widely used by athletes and everyday people who look to increase muscle mass and prevent injuries.

Strength
Resistance training with the intent to increase one's maximal strength level. Increasing maximal strength greatly benefits every element of your physical performance, from carrying groceries to breaking athletic records.

Strength endurance
Resistance training with the intent to increase muscular endurance. It trains your ability to perform more repetitions against resistance for prolonged periods.

Training Zones

Zone	HR - Watt Range	Feels Like	Benefits	When to use
Zone 5	175 - 183 / 587 - 722	Feels impossible to continue, completely out of breath, unable to talk	Improves VO2max, Enhances fat burning efficiency and cellular health, Increases fatigue threshold	Short high intensity intervals
Zone 4	151 - 175 / 544 - 587	Difficult to maintain exercise intensity, hard to speak more than a single word	Increases fatigue threshold, Increases anaerobic threshold, Improves VO2max	Medium high intensity intervals
Zone 3	107 - 151 / 448 - 544	On the verge of becoming uncomfortable, short of breath, can speak a sentence	Improves heart fitness	Tempo intervals
Zone 2	99 - 107 / 313 - 448	Feel like you can exercise for long periods of time, able to to talk and hold short conversations	Enhances fat burning efficiency and cellular health, Improves recovery capacity	Cardio training
Zone 1	89 - 99 / 193 - 313	Feels like you can maintain this intensity for hours, easy to breath and carry on a conversation	Recovery	Recovery from Intervals

Energy Consumption & Fueling

	Kcal burn	Fat burn (%)	Carb burn (%)
Zone 5	Avg: 24kcal/min 10 - 28kcal/min	3%	97%
Zone 4	Avg: 21 kcal/min 11 - 26 kcal/min	4%	96%
Zone 3	Avg: 13 kcal/min 5 - 21 kcal/min	16%	84%
Zone 2	Avg: 8 kcal/min 2 - 14 kcal/min	53%	47%
Zone 1	Avg: 7 kcal/min 3 - 10 kcal/min	54%	46%

Thresholds

	Units	07/27/2022
Fat Max	at BPM	100
Ventilatory Threshold 1 (VT1)	at BPM	101
Ventilatory Threshold 2 (VT2)	at BPM	161
VO2 Peak	ml / min / kg	45

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) of body weight achieved during the test.

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.