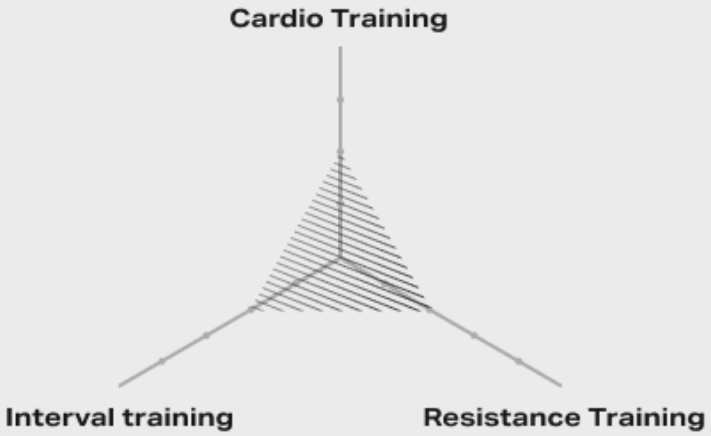
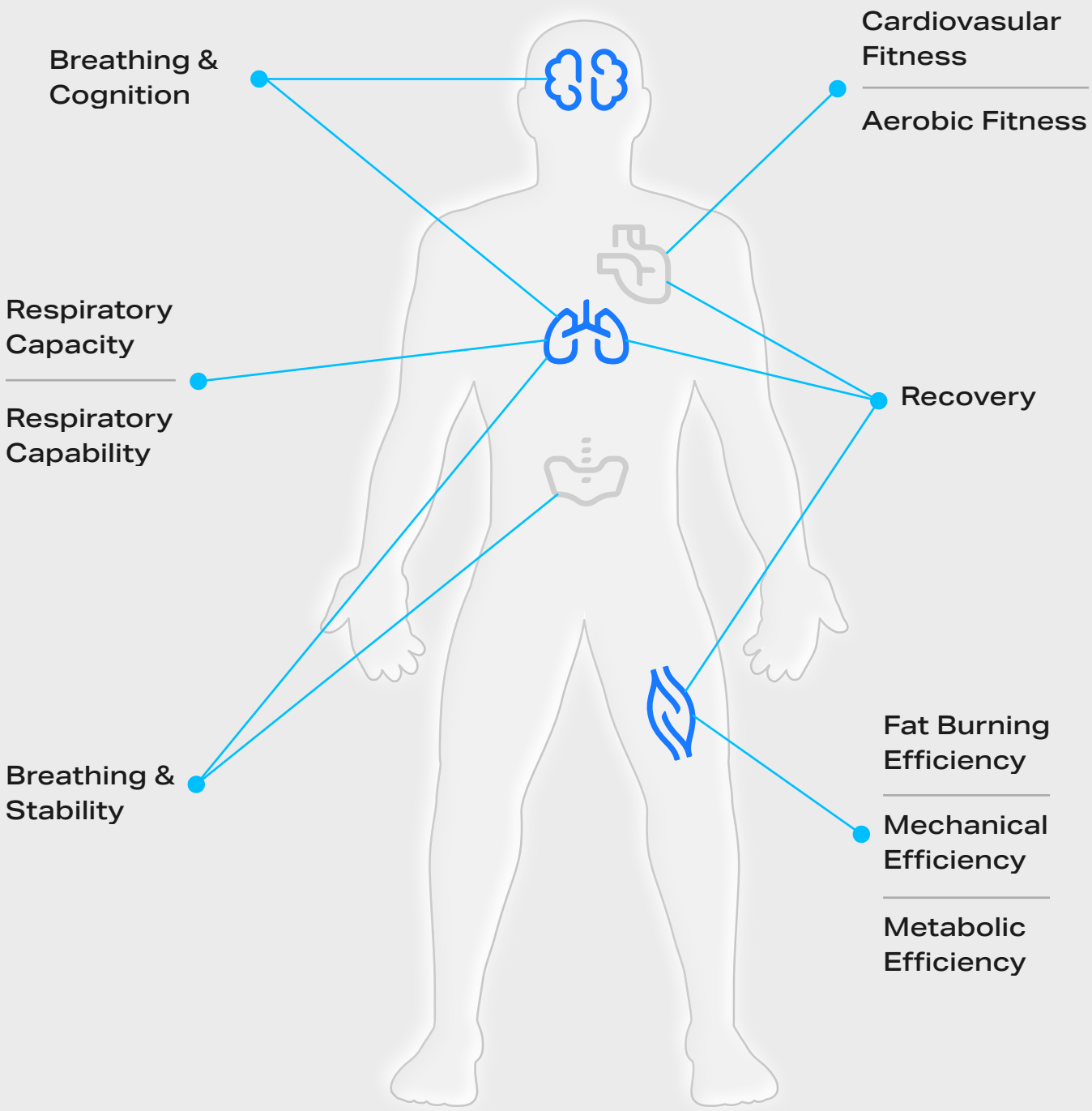
PNOĒ Active Metabolic Rate (AMR) Report

- 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
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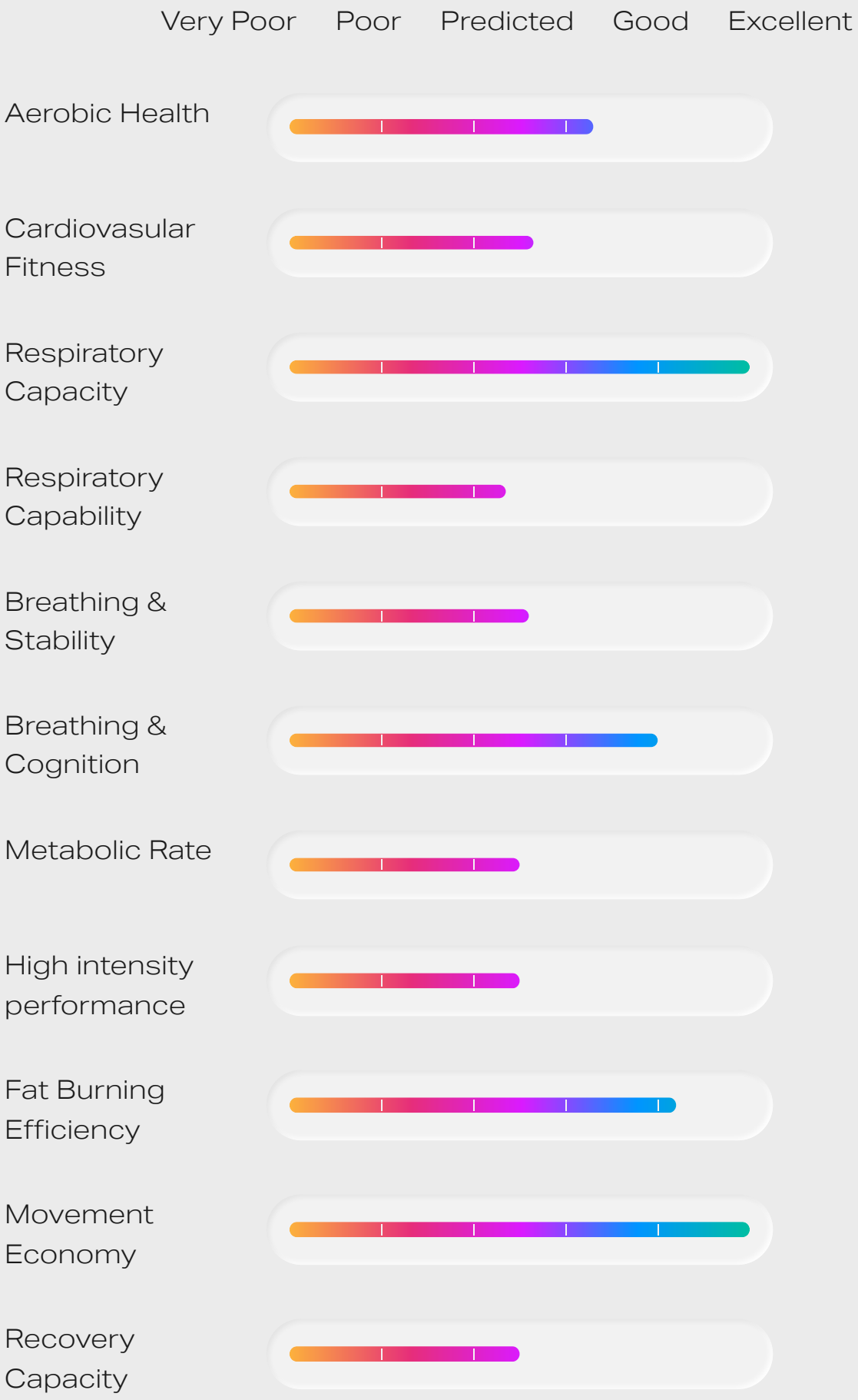
Recovery
Breathing & Stability
Fat Burning Efficiency
Mechanical Efficiency
Metabolic Efficiency

Overview


Very Poor
Poor
Predicted
Good
Excellent
Aerobic Health
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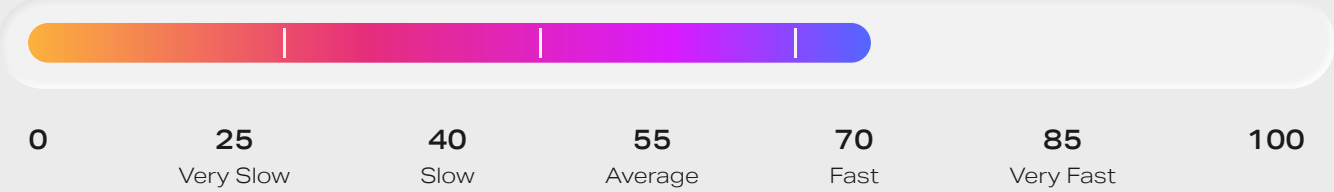
Aerobic Health 66%



What it means

It's a gauge of your overall health and provides the strongest predictor of how long and 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 our activity, your body will resort 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 critical ingredient in your metabolism, 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 cells all participate in this process. Whenever any of them breaks down, your Aerobic Health is 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 signi!cant chronic condition (i.e., heart, lung, metabolic) is related to these systems and is manifested when their ability to move or use oxygen is reduced.

Cardiovascular Fitness 53%

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 #ows 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

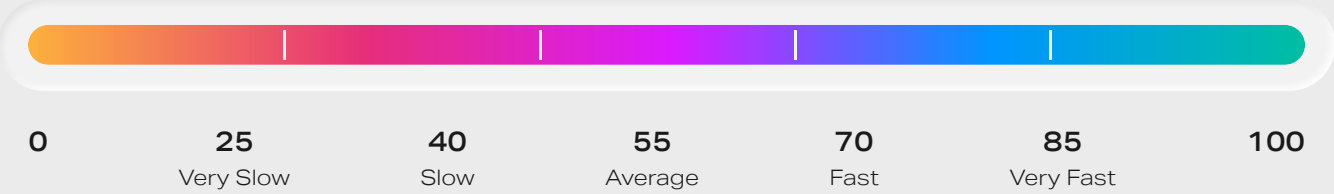
you are asking it to do. When oxygen supply is disrupted or becomes insufficient based on the energy demands of your activity, your body will resort to Anaerobic Metabolism, a process that is unsustainable and produces fatigue. The cardiovascular system pumps oxygen to your cells and is thus a critical system in keeping your body moving sustainably.

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 credible risk factor for them, one that can help you act early.

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.

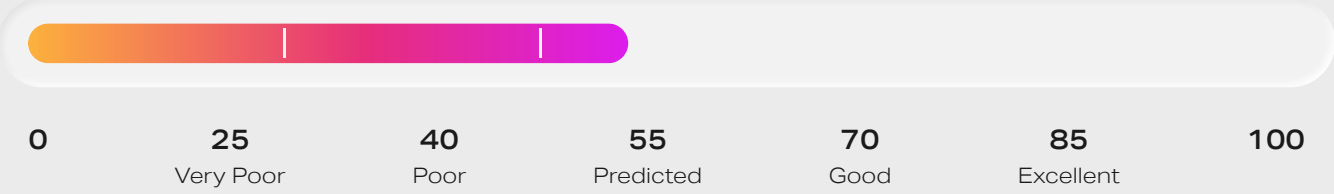
Why it's important for your performance

A high Respiratory Capacity ensures that your lungs can supply 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. Speci"cally, oxygen deprivation leads to fatigue buildup, reduction in fat burning capacity, and reduced ability to recover.

Why it's important for your wellness

A high Respiratory Capacity ensures that your lungs can supply 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 is manifested through feelings of fatigue during daily activities, dizziness and negative mood.

Respiratory Capability 47%



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 (previous metric) 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.

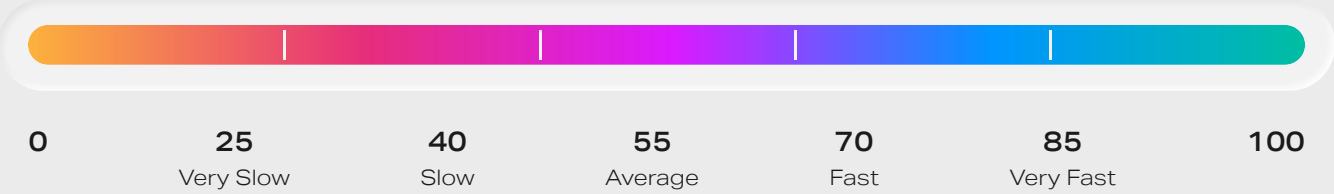
Why it's important for your performance

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 fatigue buildup.

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 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 is manifested through feelings of fatigue during daily activities, dizziness

Expiratory Power 100%



What it means

It's a gauge of whether your lungs have 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 metabolites from your body during exercise. When carbon dioxide isn't effectively cleared fatigue buildup 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 and cystic fibrosis.

Respiratory Capability 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 function, and muscle oxygenation.

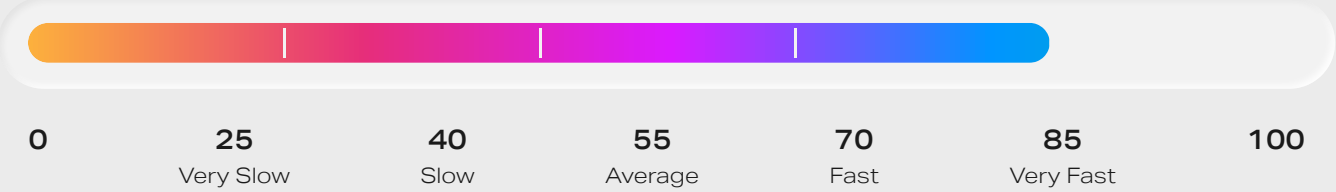
Why it's important for your performance

Irregular breathing patterns during training, also known as hyperventilation, reduce carbon dioxide levels in the blood making it harder for oxygen to enter the cells of your working muscles. This in turn limits 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 limit 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 80%



What it means

It's a gauge of how your breathing affects your brain function and ability to think.

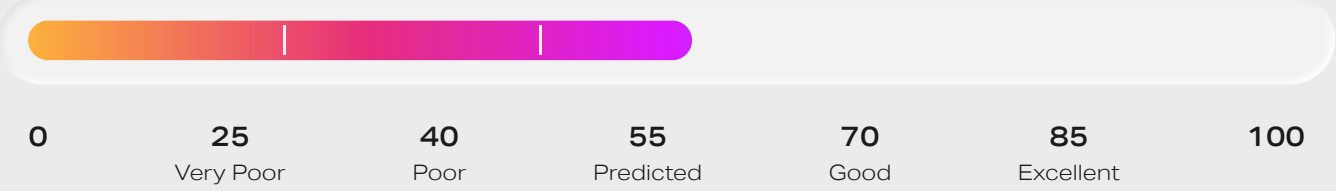
Why it's important for your performance

Hyperventilation during training reduces oxygen delivery to the brain almost immediately, causing you to react slower and respond less effectively to situations requiring rapid re"exes. 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 impacting their cognitive capacity 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 handful knowing about it. Chronic hyperventilation reduces cognitive capacity at work, increases feelings of fatigue, and is associated with higher rates of anxiety and panic attacks.

Breathing & Stability 52%



What it means

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

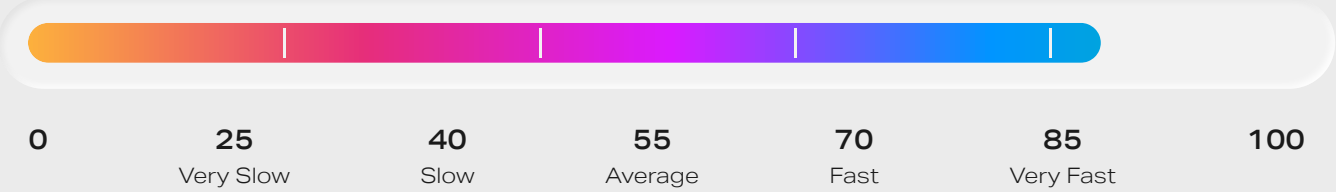
Why it's important for your performance

Abnormal breathing patterns are critical contributors to myoskeletal injuries across all sports. Moreover, they directly reduce performance in endurance sports by lower movement economy and increasing the rate with which your body accumulates fatigue. Alleviating 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 myoskeletal problems like lower back pain which currently represent the most signi#cant burden to health systems and one of the most important factors reducing the quality of life. Correct breathing will vastly improve posture, feelings of myoskeletal pain, and quality of life.

Fat Burning Efficiency 84%



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 typically carries ~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 used. Therefore, the higher your Fatburning Efficiency, 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 absorb and use, 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, a metric that's 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, whether your body burns more or fewer calories than what's predicted based on your age, 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 requires less energy to operate,

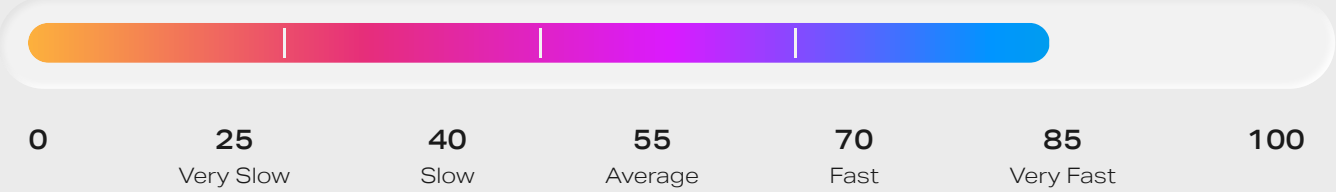
results in reduced food intake during athletic events, and minimizes fatigue buildup.

Why it's important for your wellness

Staying lean or losing weight requires a low Movement Economy in low exercise intensity (e.g., walking lightly), or in other words having a low

Mechanical Efficiency. In simple 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 80%



What it means

It's a gauge of how well your lungs and heart perform in 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 an aerobic state when exercising in high intensities and therefore avoid fatigue buildup.

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 an aerobic state when exercising in high intensities allowing you to workout for longer in intensities where you burn the most calories.

Metabolic Rate 40%

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.

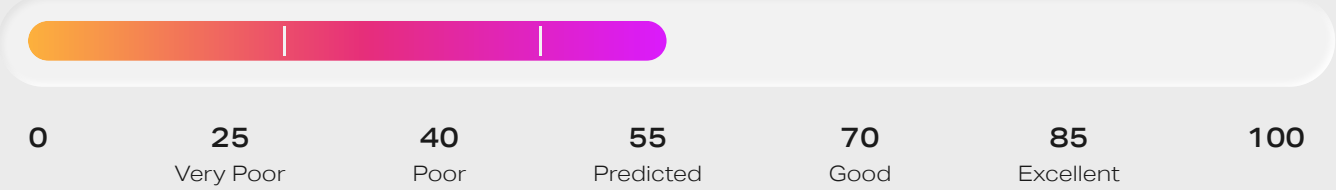
Why it's important for your performance

A high Metabolic Rate (i.e., having both a high Resting Metabolic Rate and low mechanical efficiency) indicates low levels of training fatigue accumulations. Reduction in Resting Metabolic Rate and/or increase in Mechanical Efficiency in low exercise intensities are highly correlated with unsustainable accumulation of exercise strain.

Why it's important for your wellness

A high Metabolic Rate will protect you from weight gain as your body will burn more calories 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 calorie deficit and weight loss. A high Metabolic Rate is attained through a high Resting Metabolic Rate and a low Mechanical Efficiency in low exercise intensities.

Recovery Capacity 50%



What it means

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

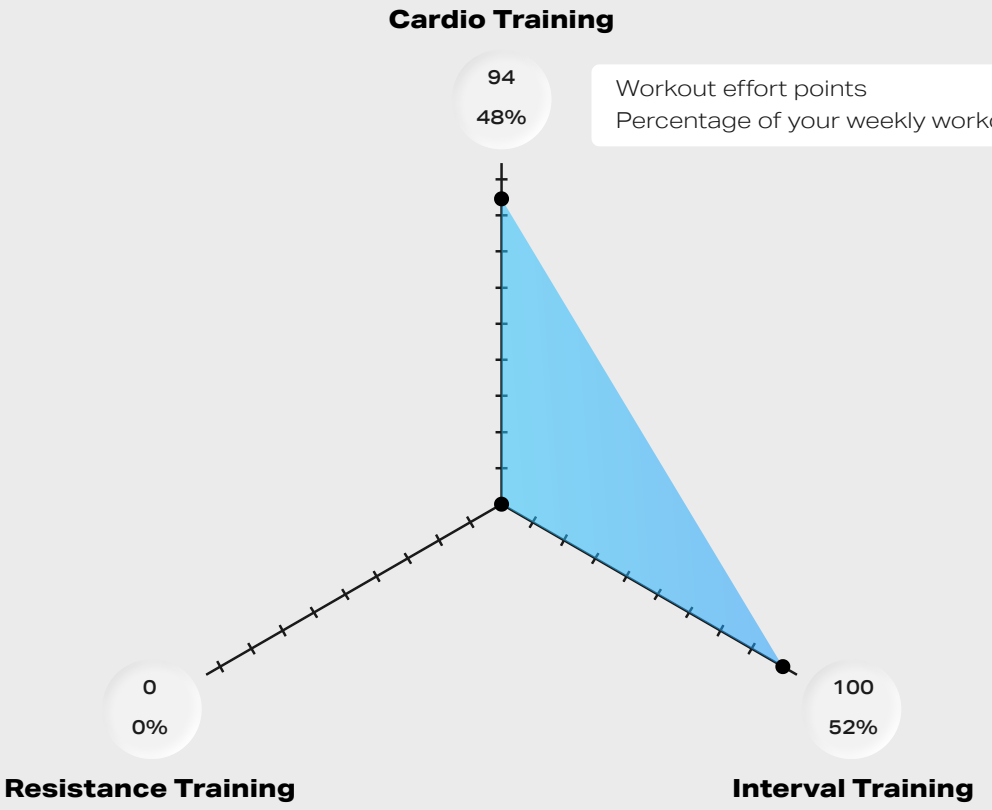
Why it's important for your wellness

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 bursts following recovery phases. The higher your Recovery Capacity, the greater your body's ability to recover, the longer you can exercise for, and the more calories you burn.

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 bursts following recovery phases. The higher your Recovery Capacity, the greater your body's ability to recover and the lower the fatigue it accumulates.

Workout Programming



Interval Training - 1 sessions per week

Type	Sessions per week	Sets	Work time / Zone	Recovery time / Zone	Effort
Tempo	1	2-3	20 min | 3	8 min | 1	100

Cardio Training - 1 sessions per week

Type	Sessions per week	Sets	Work time / Zone	Recovery time / Zone	Effort
Base	1	1	45 min | 2	5 min | 1	94

Resistance Training - 1 sessions per week

Type	Sessions per week	RIR	Recommended break between sets	Effort
Strength				
Hypertrophy				
Muscular Endurance				

Training Zones

Zone	HR - Watt Range	Feels Like	Benefits	When to use
Zone 5	194 - 206 / 194 - 206	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	143 - 155 / 182 - 194	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	132 - 143 / 170 - 182	On the verge of becoming uncomfortable, short of breath, can speak a sentence	Improves heart fitness	Tempo intervals
Zone 2	111 - 132 / 130 - 170	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	101 - 111 / 94 - 130	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: 12kcal/min 9 - 14kcal/min	11%	89%
Zone 4	Avg: 11 kcal/min 6 - 15 kcal/min	17%	83%
Zone 3	Avg: 10 kcal/min 5 - 13 kcal/min	36%	64%
Zone 2	Avg: 9 kcal/min 5 - 11 kcal/min	78%	22%
Zone 1	Avg: 6 kcal/min 1 - 15 kcal/min	100%	0%

Thresholds

	Units	11/19/2021
Fat Max	at BPM	111
Ventilatory Threshold 1 (VT1)	at BPM	112
Ventilatory Threshold 2 (VT2)	at BPM	153

Fat Max

The exercise intensity where a person burns the most amount of fax 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.