VO2Max Test

Nov 3, 2025, 6:40:55 PM

Name	*Andreas Miller*	**Age**	*33*
Size	*5 ft 8 in*	**Weight**	*160.9 lbs*

Your LOGO here

Protocol type
Andi Test

Equipment used
FTMS Fitness Machine (speed/power)

Comment
–

VO_2 Max

50.3
ml/kg/min

Very poor | Poor | Below average | Fair | Good | **50.3** | Very good | Excellent

HR recovery

Shown as a reduction of maximum heart rate

@ 1 Min	@ 2 Min
170 bpm (-10%)	165 bpm (-12%)

An important metric that indicates your overall fitness level by measuring how quickly your heart rate returns to normal after exercise.

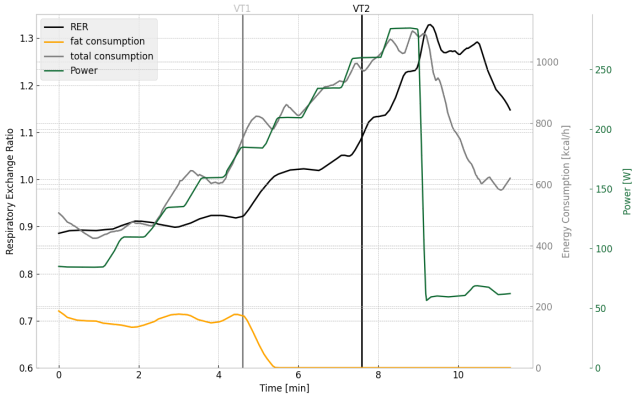
Maximum metrics

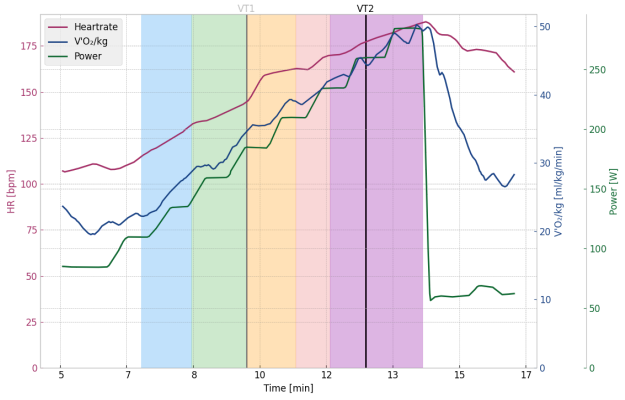
HR	Energy Use	Power	Cadence	Tidal Volume	RF	RER	Minute Ventilation
188 BPM	1,101 kCal/hr	285 Watts	100 RPM	3.1 L	58 BPM	1.3	156.0 L/MIN

Key metrics

	Fat Max	VT1	VT2	
HR	107	144	170	bpm
EE	506	738	921	kCal/hr
Power	85	185	235	watts
Cadence	89	96	96	rpm

Zone 1	108.0 - 130.1 beats per minute	4.3 - 10.2 calories per minute / 256 - 614 calories per hour / 28.5% fat / 71.5% carbs	109.0 - 152.9 watts	92.0 - 93.7 rpm
Zone 2	130.1 - 147.4 beats per minute	10.2 - 12.2 calories per minute / 614 - 733 calories per hour / 16.0% fat / 84.0% carbs	152.9 - 188.1 watts	93.7 - 96.0 rpm
Zone 3	147.4 - 162.7 beats per minute	12.2 - 14.3 calories per minute / 733 - 857 calories per hour / 1.3% fat / 98.7% carbs	188.1 - 219.8 watts	96.0 - 97.8 rpm
Zone 4	162.7 - 169.8 beats per minute	14.3 - 15.4 calories per minute / 857 - 921 calories per hour / 0.0% fat / 100.0% carbs	219.8 - 234.6 watts	97.8 - 96.2 rpm
Zone 5	169.8 - 188.1 beats per minute	15.4 - 18.3 calories per minute / 921 - 1101 calories per hour / 0.0% fat / 100.0% carbs	234.6 - 285.0 watts	96.2 - 101.0 rpm





Metabolic flexibility

Very limited | Limited | Average | Flexible | Very flexible

Describes the body's ability to efficiently adapt metabolism to different energy demands and sources to ensure energy is used effectively.

Analysis of your report

Maximum oxygen uptake

The higher your VO_2max value, the more oxygen your body can take up and use efficiently for energy production.



VO_2 Max

50.3

ml/kg/min

How your VO_2 value compares to others

Your measured VO_2max value is evaluated against people of similar age, sex, and weight. A low VO_2max is associated with an increased risk of cardiovascular disease, while a higher VO_2max correlates with lower all-cause mortality.

Key determinants of VO_2max

Improving VO_2max and aerobic capacity requires focusing on cardiopulmonary fitness, tailored training routines, and genetic factors.

Cardiopulmonary fitness: The heart and lungs are responsible for supplying oxygen to the muscles. VO_2max is determined primarily by the maximal cardiac output (the amount of blood the heart pumps per minute) and the blood's oxygen transport capacity. Reduced oxygen delivery lowers VO_2max.

Training adaptations: Regular endurance training can increase VO_2max by around 15–20% within a few months.

Lactate threshold: In addition to VO_2max as a measure of aerobic performance, factors such as the lactate threshold (also known as VT2) also influence endurance performance.

Genetic factors: Are estimated to account for up to 50% of individual VO_2max variability. Genetic differences can influence both baseline values and training adaptations.

Understanding heart rate zones

Training with heart rate zones helps optimize training intensity and achieve specific fitness goals—such as building endurance or burning fat. This method divides your training into zones based on your maximum heart rate (MHR). Determining the zones via a VO_2max test is significantly more accurate than an estimate or using a fitness tracker.

Zone 1 (~75–86 % VT1): Very light activity—ideal for warm-up and recovery. In this zone you should be able to speak easily.

Zone 2 (~86–99 % VT1): Light activity—ideal for building aerobic base. This zone is suitable for longer training sessions.

Zone 3 (~100 % VT1 – 95 % VT2): Moderately intense activity—training starts to feel harder here. This zone effectively improves aerobic capacity.

Zone 4 (~95–99 % VT2): High intensity—suitable for intense interval or performance training. Improves speed and performance.

Zone 5 (> 100 % VT2): Maximal effort—for short, intense intervals. This zone is mostly used for peak training or tests.

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Benefits of training by heart rate zones

Targeted training: Working within specific zones lets you focus on different fitness goals — for example fat loss, endurance, or speed.

Improved performance: Monitoring your heart rate helps ensure you train at the optimal intensity to get the most benefit.

Injury prevention: Staying within your personal heart rate zones helps avoid overtraining and reduces injury risk.

Training your VO_2 value:

Combining these approaches can significantly improve your VO_2max, increase cardiovascular fitness, and promote overall well-being. An effective training program should also include strength training, thorough warm-ups, and mobility work.

High-intensity interval training (HIIT) Perform short, intense bouts followed by brief recovery periods. This method has proven highly effective for increasing VO_2max.
Interval training Alternate between intense training phases and recovery phases.
Regular training Combine continuous training and interval training to achieve the best possible progress.
Regular testing Have your VO_2max measured regularly to track your progress and adjust your training accordingly.
Lifestyle factors: Maintain a healthy body weight and good overall fitness—weight reduction can improve your VO_2max relative to body weight.

Practical training tips

Use a heart rate monitor: A heart rate monitor (HRM) helps you monitor your heart rate in real time and ensure that you are training in the desired zone.
Plan your training sessions: Structure your training so that each heart rate zone is addressed according to your goal—for example, long runs in Zone 2 and interval training in Zones 4 or 5.
Adjust your training: Listen to your body and adjust the intensity to how you feel. If you can barely maintain a zone for an extended time, you should reassess your training goals.

RER over time & your VO_2max

The respiratory exchange ratio (RER) is an important indicator of the body's energy metabolism and shows how efficiently different energy sources are used during physical activity. Measuring RER over a longer period helps to understand how metabolic processes and energy utilization change with different training intensities.
Key aspects of RER in relation to VO_2max include:

- VO_2max: RER can indicate how efficiently the body uses oxygen during exercise—an important factor for VO_2max.
- Adaptation: RER highlights how the body adapts to different training intensities and how efficiently energy is produced.
- Training: Regular training can improve RER, which can increase VO_2max and overall fitness.
- Monitoring: RER can be used to monitor the body's response to training and adjust programs accordingly.

Understanding RER over time helps optimize training and increase performance in a targeted way.