Fitness Assessment Report

Welcome to the Alixr family

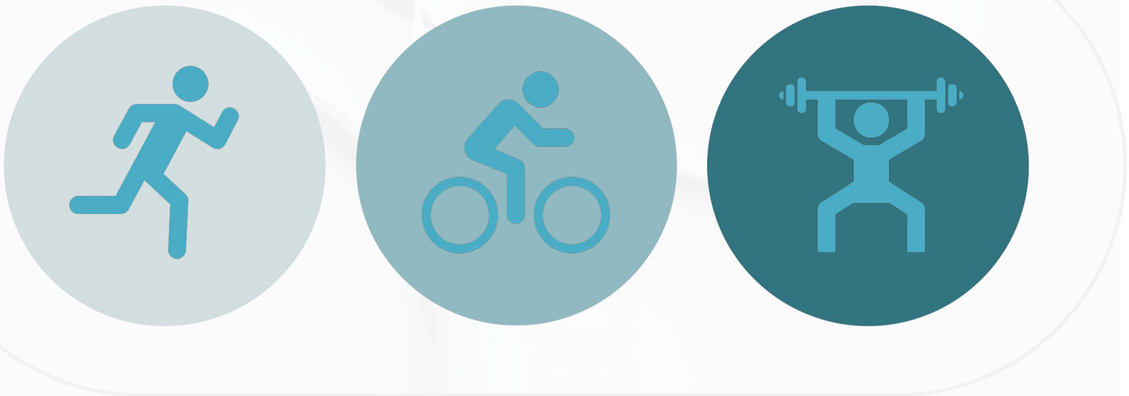
Thank you for choosing **Alixr**. At Alixr, we believe in *Measuring, Optimising, and Thriving*. Our philosophy is built on the power of **data-backed science** to unlock human potential.

Whether your goal is peak performance in sport, improved health, or a deeper understanding of your body, our mission is to provide clear, actionable insights that help you train smarter, recover better, and achieve more.

Why Sports Science Matters

Everybody is unique, and effective training requires more than guesswork. Sports science provides measurable insights into how your body functions, ensuring that training and recovery strategies are tailored to you. By combining physiology, performance testing, and data analysis, we help athletes and individuals of all levels reach their full potential safely and efficiently.

- Evidence-based
- Personalised
- Optimised
- Measurable
- Sustainable



Your Personalised Report

CLIENT

NAME:
Wheadon, Tai

DATE:
6/27/2026

TRAINER:
Bridgen, Sasha

FITNESS LEVEL

Very Low | Low | Fair | Good | Excellent | **Superior**

Thank you, Tai, for coming in to complete testing with us on 27th June 2026. This report provides a summary of the data collected during your session, along with personalised training recommendations based on your results.

The aim is to provide you with some biometrics in relation to body, health and fitness. Additionally, to provide you with some insights on areas to potentially work on to develop your fitness further as an ultra-endurance athlete.

Tai previously tested with us in December 2025 and returned today to re-test and see how the data has changed given his training load over the last 6 months.
The follow-up assessment was completed in ambient temperatures exceeding **30°C**, compared with significantly cooler conditions during the December 2025 assessment. Exercising in hot environments places greater physiological strain on the cardiovascular system, typically resulting in higher heart rates, increased thermal stress and, in some cases, a reduction in maximal oxygen uptake (VO_2max). For this reason, results should be interpreted alongside the testing conditions rather than by comparing individual values in isolation. Despite the challenging environmental conditions, many key performance markers, including lactate thresholds, peak running speed and peak blood lactate, were maintained or improved, suggesting your underlying endurance fitness remains exceptionally strong.

Summary of the Data

Height	179cm
Weight	75.2kg
BMI	23
Body Fat (%)	7.2%
LT1	16km/h (166 bpm)
LT2	18km/h (177 bpm)
VO_2 max (max reported across final stage)	63.1
VO_2 peak (peak data recorded)	68
Peak Heart Rate	191
Peak Blood Lactate	8.7
Peak Velocity	20km/h

Speed (km/h)	Heart Rate (bpm)	Blood Lactate (mmol)	VO_2 (ml/kg/min)	RPE (1-10)
Resting	65	1.5	-	
13	141	1.6	42.8	2
14	150	1.9	50	2
15	158	1.8	50.3	3
16	166	2	52.1	4
17	171	3.9	56.6	5
18	177	4.1	59.6	6
19	181	4.3	61.1	8
VO2 Ramp				
19.5	179		50.1	
20	187		66	
20	190		68	
20	191	8.7		

Performance Comparison

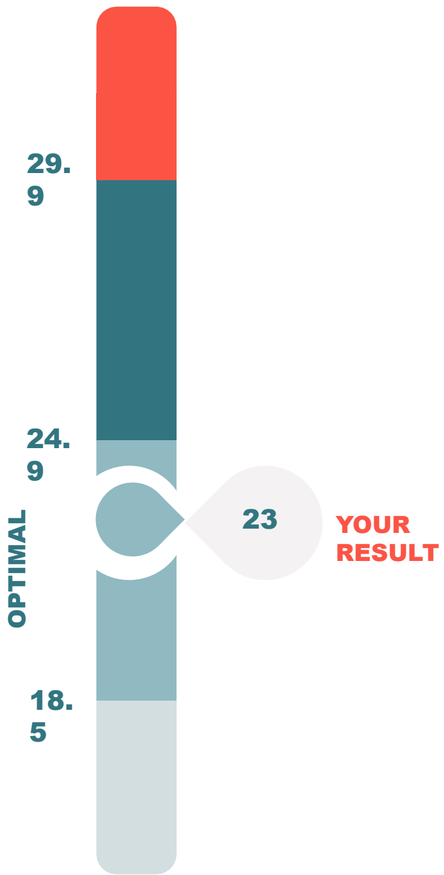
Metric	December 2025	June 2026	Performance Trend
Weight	72.8 kg	75.2 kg	▲ +2.4 kg
Body Fat	9.7%	7.2%	▼ -2.5%
LT1	16.0 km/h (167 bpm)	16.0 km/h (166 bpm)	➖ Maintained
LT2	17.5 km/h (176 bpm)	18.0 km/h (177 bpm)	▲ Improved
VO_2max (reported)	**69.1**	**63.1**	▼ Lower
Highest VO_2 achieved	**69.1**	**68.0**	➖ Comparable
Peak Heart Rate	188 bpm	191 bpm	▲ +3 bpm
Peak Blood Lactate	8.7 mmol/L	8.7 mmol/L	➖ No Change
Peak Speed	20 km/h	20 km/h	➖ Maintained

VO_2max values are reported using the CardioCoach calculation for consistency between assessments. During the 2026 test, the highest measured oxygen uptake reached **68.0 ml/kg/min** during the final ramp stage, despite the calculated VO_2max being reported as **63.1 ml/kg/min**. This suggests maximal aerobic capacity remains comparable to the previous assessment, with the calculated difference likely reflecting differences in averaging methodology during the incremental protocol rather than a meaningful reduction in physiological performance.

Body Mass Index (BMI)

Body Mass Index (BMI) is a quick calculation using height and weight to indicate whether someone is within a healthy weight range. While useful as a general guide, it doesn't distinguish between muscle, fat, or bone.

BMI RESULT	23 OPTIMAL



Obese - Significant risk of developing chronic disease, such as heart disease, cancer, cognitive, and metabolic syndrome

Overweight - Elevated risk of developing chronic disease. 50% more likely than individuals at Optimum

Optimal - Lowest Risk. Must be measured in combination with Body Composition

Underweight - High risk of weakened immune function, osteoporosis and accelerated sarcopenia

Body Composition

BODY FAT	**5.4KG**
BODY FAT %	**7.2%**
SKELETAL MUSCLE MASS	**39.8KG**

Body Composition Analysis		
Total amount of water in my body	Total Body Water (L)	51.3
What I need to build muscles	Protein (kg)	13.9
What I need for strong bones	Mineral (kg)	4.64
Where my excess energy is stored	Body Fat Mass (kg)	5.4
Sum of the above	Weight (kg)	75.2

Body Measurements

Scan History

Recap of your scans	
# of Scans to date	2
Before/After	190 days
Net Loss/Gain	Gained 4.5 cm (0.6%)

Circumference Summary

These are the biggest areas of change	
Torso	Lost 1.2 cm (-0.2%)
Neck & Arms	Lost 0.8 cm (-0.8%)
Legs	Gained 6.5 cm (4.3%)

Composition Summary

Your body composition progress	
Total Weight	Gained 2.4 kg (3.3%)
Body Fat %	Lost 2.5% (-25.8%)
Lean Mass %	Gained 2.5% (2.8%)

Basal Metabolic Rate (BMR)

What is BMR?

Basal Metabolic Rate (BMR) is the number of calories your body needs to maintain basic functions at rest, such as breathing, circulation, and cell repair. It represents the minimum energy required to keep you alive without any activity. Understanding BMR helps establish a foundation for daily energy needs, which can then be adjusted based on training load, lifestyle, and performance goals.

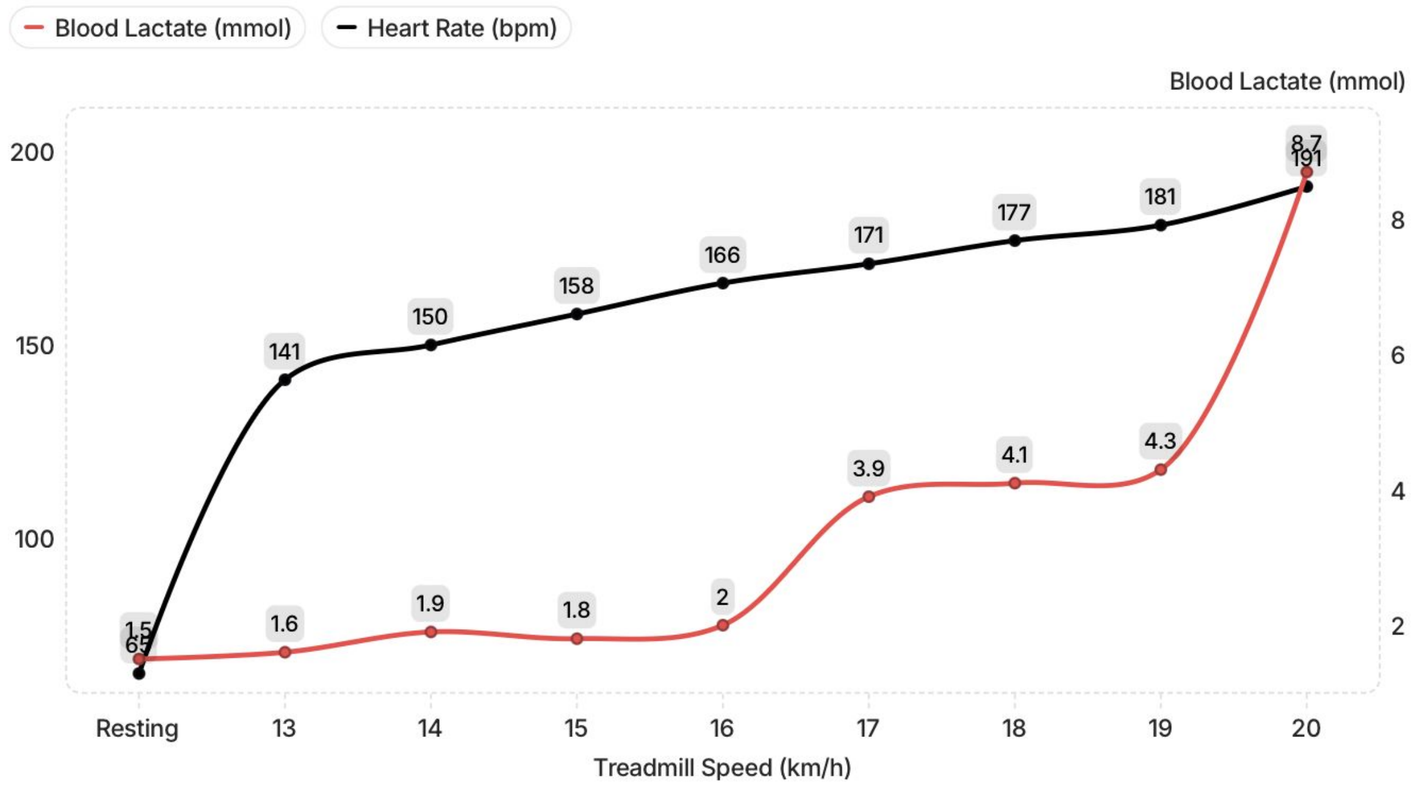
BMR is the number of calories your body requires at rest to sustain vital functions such as breathing, circulation, and repair.
To calculate daily energy needs, BMR is multiplied by an **Activity Factor**

Activity Factor

Sedentary: ×1.2
Lightly Active: ×1.375
Moderately Active: ×1.55
Very Active: ×1.725
Extra Active: ×1.9

Endurance athletes (e.g. marathoners, triathletes, ultra-runners) typically fall in the **1.7–1.9 range**, reflecting high training loads. Meeting these energy demands with quality carbohydrates, lean protein, and healthy fats supports performance, recovery, and long-term health.

Lactate Response



Heart Rate and Blood Lactate Response Throughout the Test

Speed (km/h)	Heart Rate (bpm)	Blood Lactate (mmol)	VO_2 (ml/kg/min)	RPE (1-10)
Resting	65	1.5	-	
13	141	1.6	42.8	2
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VO2 Ramp				
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20	190		68	
20	191	8.7		

Lactate Thresholds

Lactate Threshold Testing measures how the body responds to increasing exercise intensity by tracking blood lactate levels. It provides insight into aerobic and anaerobic energy systems, helping athletes identify precise training zones. By understanding where lactate begins to accumulate, training can be tailored to improve endurance, efficiency, and performance.

This is roughly the maximum pace that you could sustain for a full marathon

This is roughly the maximum pace that you could sustain for a half marathon

LT1 (First Lactate Threshold): This is the intensity where blood lactate first rises above resting levels. It reflects the body's shift from purely aerobic metabolism toward a gradual contribution of anaerobic energy. Training around LT1 helps build aerobic base, fat oxidation, and endurance efficiency.

LT1

HEART RATE **166** BPM

SPEED **16** KM/H

LT2

HEART RATE **177** BPM

SPEED **18** KM/H

LT2 (Second Lactate Threshold): This is the point where lactate accumulates rapidly, and clearance can no longer keep up. It represents the highest sustainable intensity before fatigue sets in. LT2 is closely linked to race pace for endurance events, and training here improves lactate tolerance and high-intensity stamina.

Training Zones

Zone 1: Recovery / Easy
- Speed: <14km/h
- HR: <155bpm

→ Recovery, circulation, fat metabolism

Zone 2: Endurance / Aerobic Base
- Speed: 14-16km/h
- HR: 155-167bpm

→ Build aerobic capacity, efficiency, fat utilisation

Zone 3: Tempo / Moderate
- Speed: 16-17km/h
- HR: 167-173bpm

→ Improve muscular endurance, sustain faster pace

Zone 4: Threshold
- Speed: 17-18km/h
- HR: 173-177bpm

→ Increase lactate tolerance, raise sustainable race pace

Zone 5: VO_2 Max / High Intensity
- Speed: >18km/h
- HR: >177bpm

→ Boost VO2max, speed, anaerobic capacity

Training zones have remained remarkably consistent between assessments, reflecting the stability of your aerobic fitness. Rather than requiring significant changes to training intensity, the results suggest the focus should remain on improving running economy, durability and race-specific performance within these established zones.

ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 5
Very light, conversationa l pace	Comfortable, steady pace	Comfortably hard effort, sustainable for long	Hard effort, can be sustained for up to 60	Very hard, short intervals

Training Summary

Your personalised training zones have once again been calculated using your blood lactate and heart rate responses during testing. Comparing these results with your assessment six months ago shows that your physiological profile has remained remarkably stable, despite the follow-up test being completed in significantly hotter conditions. Your first lactate threshold (LT1) remains at approximately **16.0 km/h (3:45/km)** and **166 bpm**, while your second lactate threshold (LT2) has improved slightly from **17.5 km/h to 18.0 km/h (3:20/km)** at **177 bpm**. This indicates that you can now sustain a faster running speed before significant lactate accumulation begins, representing a meaningful improvement in your endurance performance.

One of the most encouraging findings is how well your aerobic efficiency has been maintained. Six months ago, your testing demonstrated an exceptionally well-developed aerobic system, and the current assessment confirms that this remains a major strength. Despite the warmer testing conditions, you continued to demonstrate very low lactate concentrations up to 16 km/h, indicating that your ability to produce energy aerobically at high running speeds has been preserved. The slight improvement in LT2 suggests that your training has continued to enhance your ability to sustain faster paces before fatigue begins to accelerate.

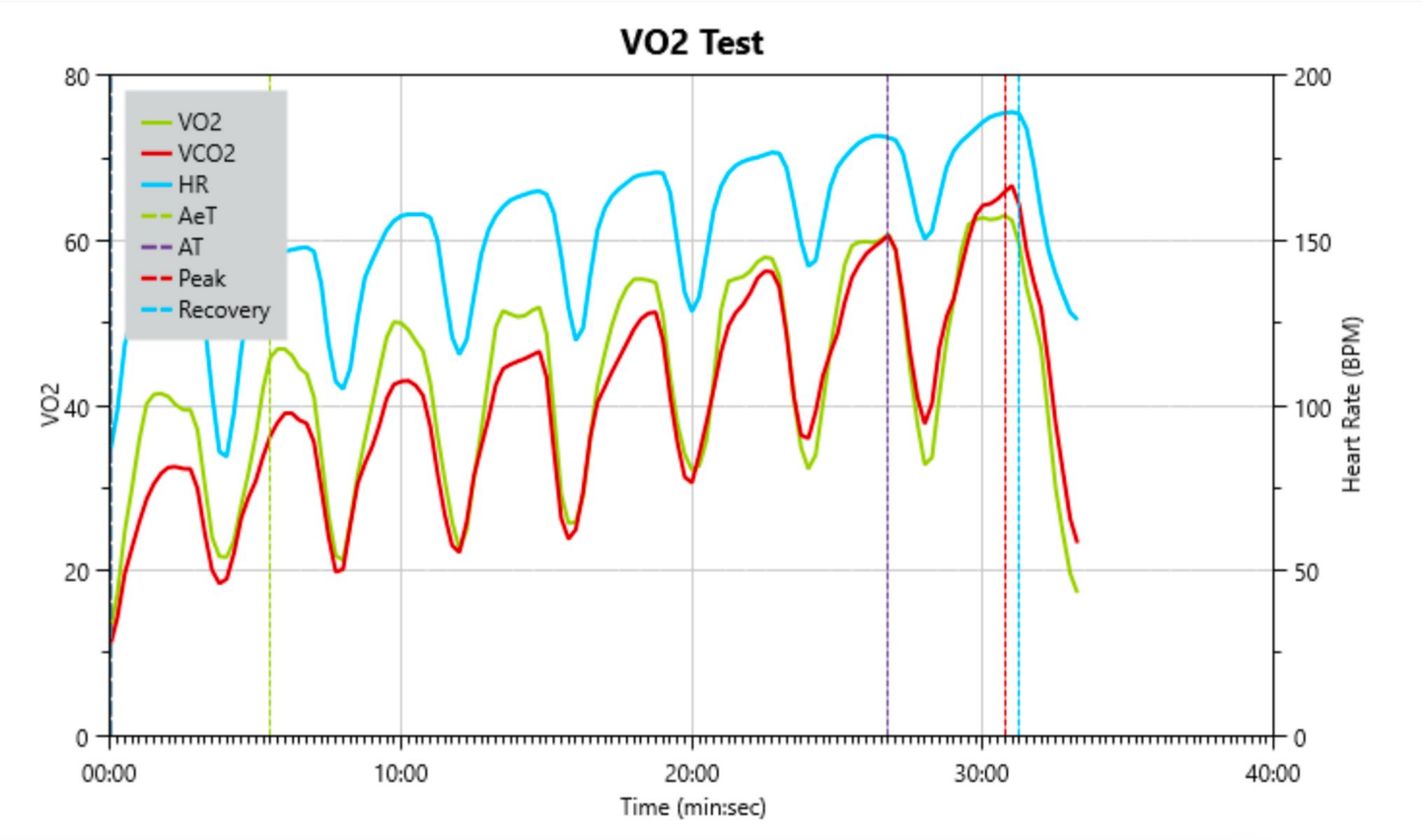
Overall, the comparison highlights excellent consistency in your endurance physiology. While the calculated VO_2max was marginally lower than the previous assessment, your threshold speeds, peak running speed and lactate profile were all maintained or improved, suggesting your underlying aerobic performance remains at an exceptionally high level. Rather than requiring major changes to your training zones, the results indicate that the focus should now remain on converting this outstanding aerobic capacity into race-specific performance through continued threshold development, running economy and endurance-specific training.

VO_2max

A VO2 Max test is the gold standard assessment of your cardiovascular fitness and reflects the efficiency of your heart, lungs, and muscles in transporting and utilising oxygen during exercise

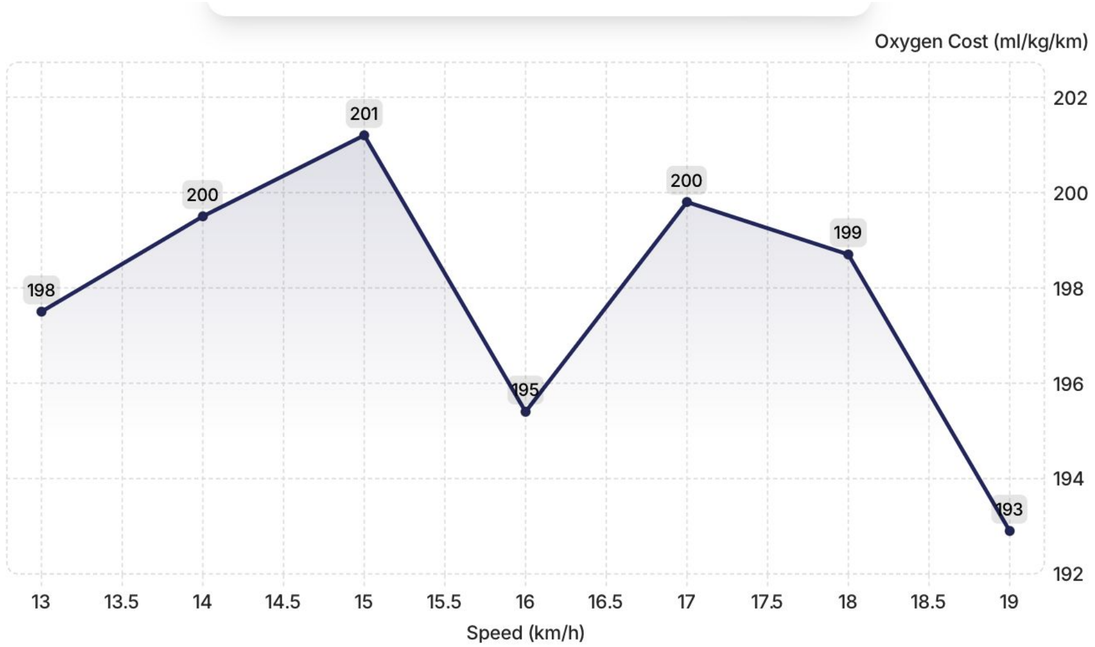
VO_2max (reported)	**69.1**	**63.1**
Highest VO_2 achieved	**69.1**	**68.0**

VO_2max values are reported using the CardioCoach calculation for consistency between assessments. During the 2026 test, the highest measured oxygen uptake reached **68.0 ml/kg/min** during the final ramp stage, despite the calculated VO_2max being reported as **63.1 ml/kg/min**. This suggests maximal aerobic capacity remains comparable to the previous assessment, with the calculated difference likely reflecting differences in averaging methodology during the incremental protocol rather than a meaningful reduction in physiological performance.



Running Economy

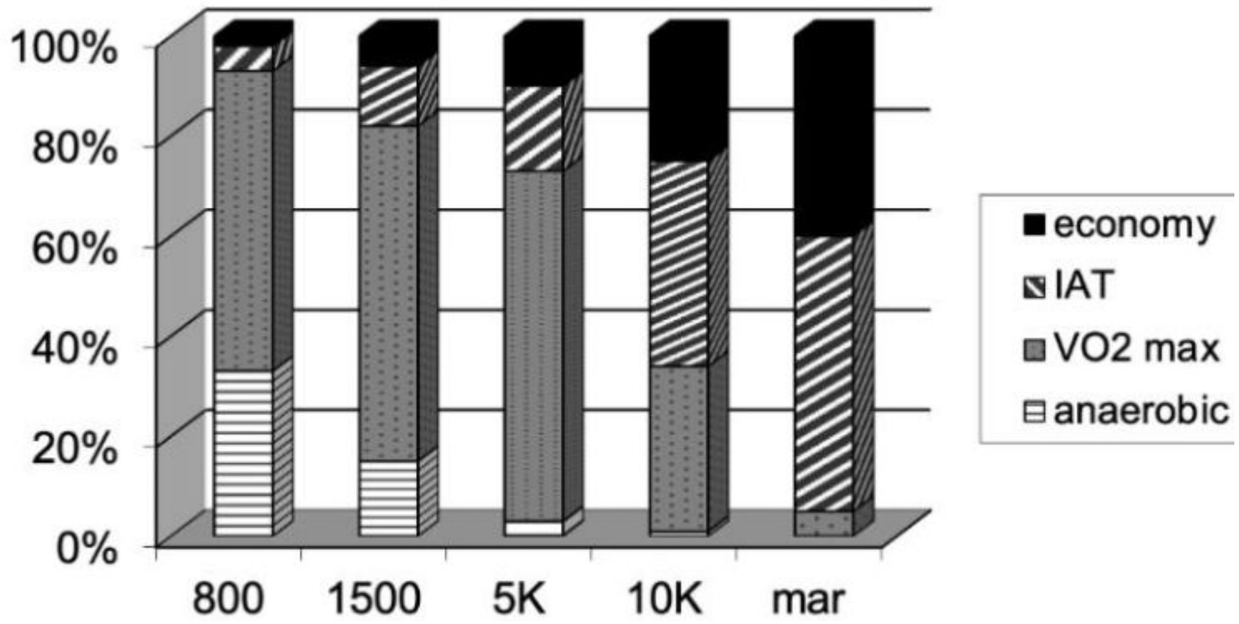
Running economy reflects how much oxygen your body uses to cover a set distance, with lower values meaning greater efficiency. We worked this out by dividing your VO_2 values from the treadmill test by your running speed, giving us the oxygen cost per kilometre.



- Your running economy improves steadily as speed increases, indicating highly efficient movement mechanics at faster / the mid-range paces
- The lowest oxygen cost (best efficiency) was observed at **19.0 km/h**, meaning this is the pace at which you require the least oxygen per kilometre
- This suggests that your neuromuscular coordination and biomechanics are particularly well adapted to higher speeds, despite your ultra-endurance background
- Efficient running economy at and above threshold speeds allows you to maintain faster paces with less energy cost, which is crucial for both long climbs and sustained downhill running

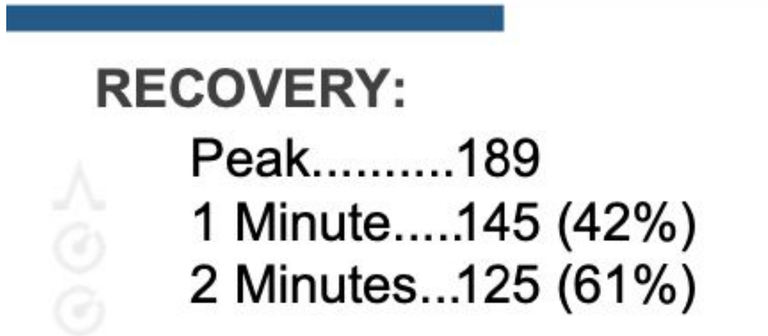
Physiology of Running

Running economy becomes more vital as the distance you are running over increases. The figure below shows how running economy (amongst other factors) varies in importance dependant on the distance you are running. It is the duration of the event that matters, rather than the event itself, so obviously this would vary from person to person. This is more of a guide for performers on an elite level but adapting the specificity of your training to meet the physiological needs of your event is key to maximising performance.



Recovery Profile

Speed	Peak HR	Recovery HR	HR Drop
13	141	76	65 bpm
14	150	90	60 bpm
15	158	101	57 bpm
16	166	114	52 bpm
17	171	122	49 bpm
18	177	136	41 bpm
19	181	146	35 bpm



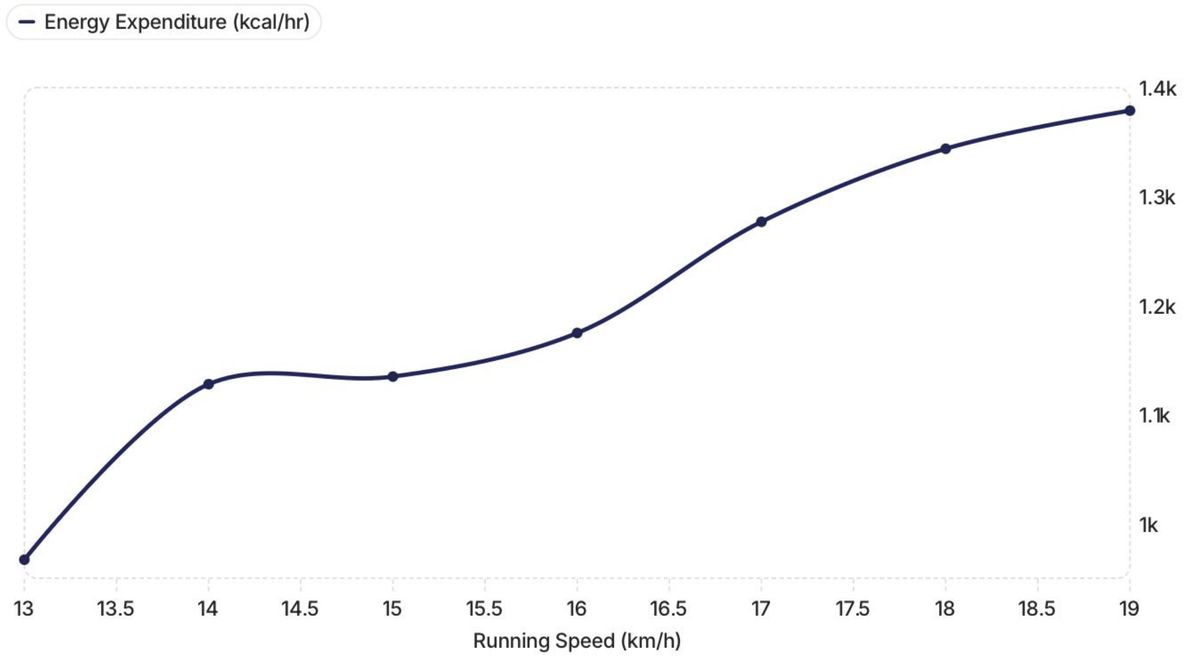
Recovery following exercise was excellent across all measured variables. Heart rate demonstrated rapid reductions following each incremental stage, reflecting efficient parasympathetic reactivation despite progressively increasing exercise intensity. Peak blood lactate of **8.7 mmol/L** reduced to **2.8 mmol/L** within ten minutes of the test ending, demonstrating a high capacity for lactate clearance and metabolic recovery. Oxygen consumption also returned rapidly towards resting values during the post-exercise recovery period, further supporting the presence of a highly developed aerobic system and efficient cardiovascular recovery.

Energy Expenditure

Energy Expenditure vs. Speed

This graph shows how much energy (kcal) you expended at different running speeds. Energy expenditure is a measure of how many calories the body burns to sustain exercise at each intensity, and it generally increases as speed (and therefore effort) goes up.

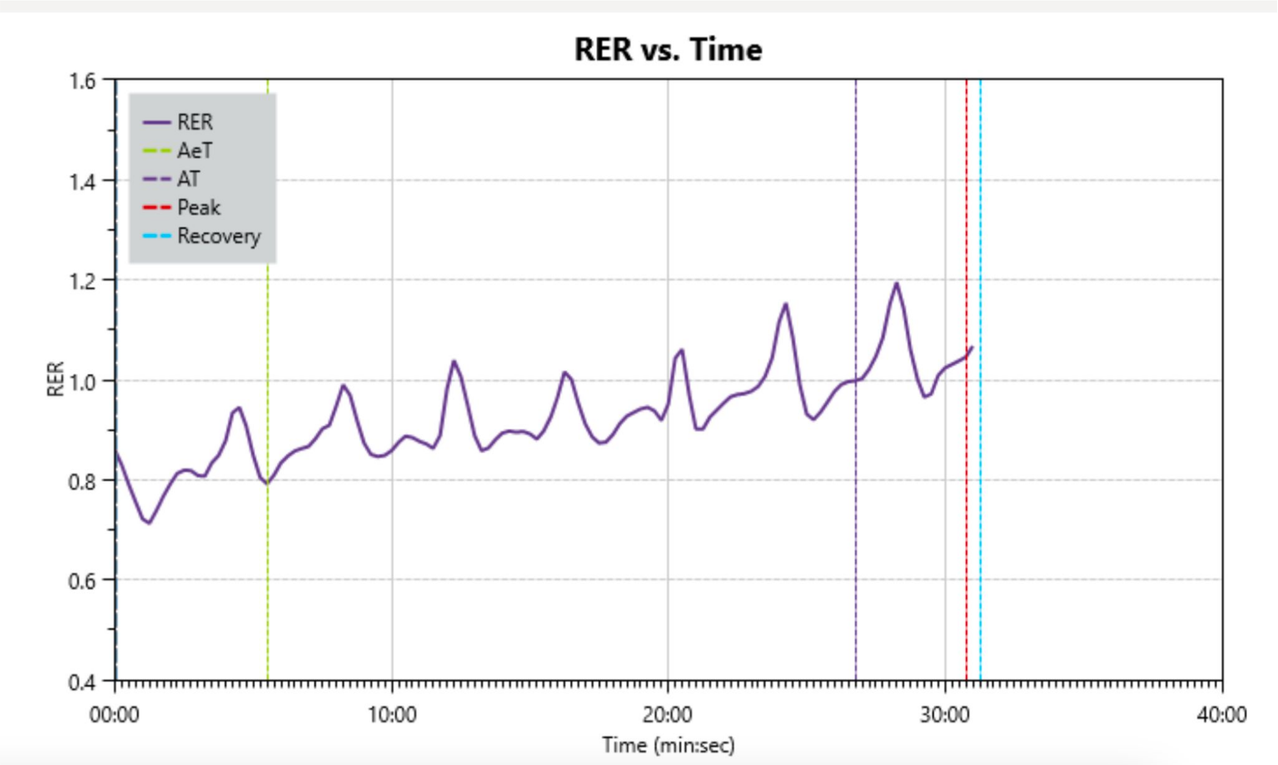
In your case, energy expenditure rises steadily which indicates that the body is working progressively harder and requiring more fuel as the running speed increases.



Respiratory Exchange Ratio (RER)

RER vs. Speed

RER is the ratio of carbon dioxide produced to oxygen consumed (VCO_2/VO_2) and indicates the type of fuel being used during exercise. An RER close to 0.7 suggests mostly fat oxidation, while an RER of 1.0 or higher reflects predominantly carbohydrate use.

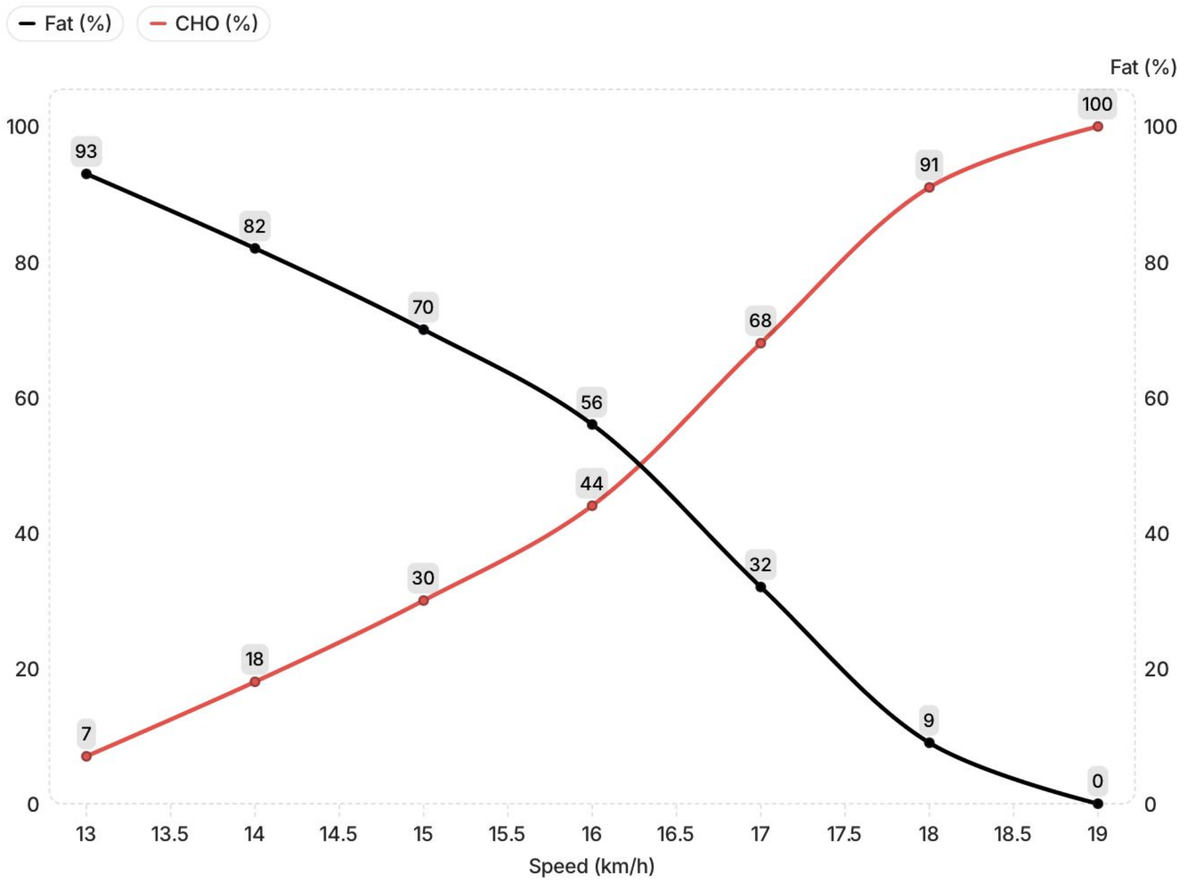


Substrate Utilisation (CHO vs. FAT)

Substrate Utilisation vs. Speed

This graph shows how your body shifts between fat and carbohydrate use as running speed increases. At lower and moderate intensities, you rely heavily on fat as a fuel source, with carbohydrate contribution increasing only as speed becomes more demanding. In your test, the crossover point (where carbohydrate becomes the dominant fuel) occurred at approximately 16.5 km/h (compared to 13km/h in your previous test), which reflects improved metabolic efficiency. This pattern aligns closely with your RER results, which remained low across a wide range of speeds, indicating efficient fat oxidation.

Shifting this crossover point further to the right, is allowing you to rely on fat at higher speeds, which will help preserve glycogen stores and improve performance during long climbs, prolonged efforts, and ultra-distance races.



Summary & Next Steps

Strengths

✅ **Elite aerobic fitness maintained**
Despite the follow-up assessment being completed in significantly hotter conditions, your aerobic profile remains exceptionally strong. LT1 was maintained at 16.0 km/h and LT2 improved to 18.0 km/h, demonstrating outstanding endurance performance and aerobic efficiency.

✅ **Improved sustainable threshold speed**
Your second lactate threshold increased from **17.5 km/h to 18.0 km/h**, allowing you to sustain a faster pace before significant lactate accumulation begins. This reflects improved endurance performance and greater resistance to fatigue.

✅ **Outstanding metabolic efficiency**
The fuel utilisation data continues to demonstrate excellent fat oxidation across aerobic intensities, delaying reliance on carbohydrate until higher running speeds. This remains a major strength for ultra-endurance racing and aligns with the previous assessment.

✅ **Excellent recovery capacity**
Rapid heart rate recovery following each stage, together with a reduction in blood lactate from **8.7 mmol/L to 2.8 mmol/L within 10 minutes**, highlights exceptional cardiovascular recovery and lactate clearance, supporting your ability to recover efficiently from high-intensity efforts.

Areas to Improve

⚠️ **Further increase the gap between LT1 and LT2**
Although LT2 has improved, increasing the distance between your aerobic and anaerobic thresholds would further expand the range of sustainable "comfortably hard" running, particularly during long climbs and prolonged race efforts. This remains an opportunity identified in your previous assessment.

⚠️ **Develop durability at higher race intensities**
Your aerobic system is already exceptionally well developed. The greatest opportunity now lies in improving your ability to sustain upper-threshold efforts for longer, particularly across variable terrain where repeated surges in intensity occur.

⚠️ **Continue improving running economy under fatigue**
Running economy remains excellent, but the greatest performance gains are now likely to come from maintaining efficient mechanics during the later stages of long races when fatigue becomes the limiting factor rather than aerobic capacity.

Summary & Next Steps

Next Steps

🎯 **Maintain the exceptional aerobic foundation** through consistent endurance volume while avoiding unnecessary increases in low-intensity mileage that provide diminishing returns.

🎯 **Prioritise tempo and sub-threshold training** to continue raising sustainable race pace and further extend the gap between LT1 and LT2.

🎯 **Increase race-specific durability** through long runs incorporating prolonged climbing, descending and sustained efforts around marathon to ultra-marathon intensity.

🎯 **Continue monitoring physiology through repeat testing**, using future assessments to track improvements in threshold speed, recovery profile and running economy rather than focusing solely on VO_2max.

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