

## What is a Lactate Test?

A lactate test is a progressive exercise test used to understand how your body produces and clears lactate at different intensities.

As intensity increases, your body shifts from primarily aerobic energy production (fat burning) to more anaerobic (carbohydrate use). By measuring lactate levels at each stage, we can accurately identify your key training zones, including:

- LT1 (Aerobic Threshold) – where effort starts to become more than “easy”
- LT2 (Lactate Threshold) – the point where lactate accumulates rapidly

These markers allow us to prescribe precise training zones, ensuring your sessions are targeted, effective, and specific to you — not based on generic formulas or estimates.

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## Test Protocol – Step Test (5 Minutes per Stage)

The test is carried out as a progressive step test, either on the treadmill or bike.

How it works:

- You will start at a very easy intensity
- Every 5 minutes, the intensity increases (speed or power)
- At the end of each stage:
  - A small blood sample is taken (finger prick)
  - Heart rate and perceived effort are recorded

This continues until:

- You reach volitional exhaustion (you can't continue), or
  - Lactate levels clearly show we have enough data
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## What we are looking for

During the test, we track how lactate responds to increasing effort. This allows us to:

- Identify your true aerobic zone (Zone 1–2)
  - Pinpoint LT1 and LT2 accurately
  - Understand how efficiently your body is producing energy
  - Highlight strengths and limiters in your physiology
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## Why this matters

Most athletes train using estimated zones (e.g. FTP tests or generic formulas), which can often be inaccurate.

Lactate testing removes the guesswork and allows you to:

- Train at the right intensity, more often
  - Improve endurance and efficiency
  - Avoid overtraining or undertraining
  - Maximise performance with less wasted effort
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## What to expect

- The test typically lasts 60–90 minutes
  - It will become progressively harder
  - The final stages are challenging, but controlled
  - You will be guided throughout
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## After the Test

You will receive:

- A full lactate report
  - Updated training zones (run or bike)
  - Feedback shared with your coach
  - Guidance on how to apply your zones in training
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## Alpha State Approach

We use lactate testing to make your training individual, data-driven, and progressive — ensuring every session has purpose and moves you closer to your goals.




## Alpha State Lactate Testing – What to Bring



### Essentials

- Training kit (shorts, top, socks)
  - Running shoes (for treadmill tests)
  - Towel
  - Water bottles (at least 1–2)
  - Nutrition (gels / drink mix if required)
  - Watch or head unit (Garmin, Wahoo etc.)
  - Heart rate monitor
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### Bike Testing (IMPORTANT)

- Cycling shoes
- TrainingPeaks or Zwift login details (required to run the session on our system)
- Bike Power Meter (if you have one)

*Turbo trainer and fan are all provided.*

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### Pre-Test Nutrition

- Eat a carbohydrate-based meal 2–3 hours before
  - No Caffeine 2hrs before the test
  - Bring electrolytes if you're a heavy sweater
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### After the Test

- Change of clothes
  - Protein Shake
  - Warm layer
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### Key Reminders

- Arrive well fuelled and hydrated
  - Avoid hard training 24–48 hours before
  - Avoid caffeine 2–3 hours before (unless discussed)
  - Be ready to work — this is a progressive test
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### Final Note

The accuracy of your results depends on how well prepared you are.  
Turn up ready, fuelled, and we'll get the most out of the session.

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