



Dear Uphill Athlete,

You've decided to get tested. Great!

- A lab test can provide useful, actionable information about your metabolism and helps set a baseline. Against that baseline, future tests will demonstrate the effectiveness of your training.
- **Be aware that most labs use a test protocol that is useless for our purposes.** Most labs focus on VO2 max because it is the easiest data point to measure, not because it is the most important. *For the events that you're training for, we need to measure your aerobic threshold. A typical VO2 max test will not do this or will do it poorly.* (For more background, read the [Choosing a Testing Lab](#) article on our website.)
- Please send the attached instructions to the clinician prior to conducting your test. The instructions explain what we want to learn from these tests and why.

One more thing: *You'll get the best results if you can fast for at least four hours prior to the test.* That can be tricky if a test is later in the day. As such, we recommend scheduling your test as early in the day as possible, closest to the normal time that you wake up.

Please follow up with your coach if you have any additional questions.

Thank you,

Steve House
Founder

www.uphillathlete.com

Uphill Athlete Lab Guidelines

for Aerobic Threshold Testing

Our preferred test protocol is as follows:

- The athlete warms up slowly and gradually for 15-20'. To save lab time, this can be done outside or on a nearby treadmill;
- The athlete begins the test at a low heart rate with the treadmill set to a 10% incline and a slow speed;
- In 3-minute stages, the intensity is increased but *without* an increase in the incline of the treadmill. *Each stage should target a 5 bpm increase in heart rate;*
- The test continues until noting, primarily, the aerobic threshold, and secondly, the anaerobic threshold;
- Testing VO₂-max is not helpful for our purposes. But if the client wants to, the test can continue to failure.

Why warm up?

The aerobic system takes longer to “come online” than the anaerobic. The aerobic threshold is our main concern, so we want to give it the best chance to be fully functional during the test.

Why a treadmill?

We want our clients to get tests on inclined treadmills because that is the most specific method for the sports that we coach.

Why a constant 10% incline?

The actual incline isn't important so long as it's between 10% and 25% and, more importantly, the athlete can conduct future tests at the same angle. A 10% incline seems to be the most common among treadmills, so it's described as such in our protocol.

Also, we would like the increases in intensity to come only from increases in speed. Using increasing in grade changes the mechanics of the athlete and creates non-linear increases in load. The athlete is more likely to go anaerobic sooner, which is the opposite of what we're trying to test.

Why the focus on the aerobic threshold?

The main event for our clients are long days in the mountains, often at altitude. The primary factor in their performance is the speed they can travel at their aerobic threshold and at how high an intensity they can burn primarily fat for fuel. That is what we train them for.

And we train athletes to push that threshold higher, so it's our benchmark intensity. The cross over point from burning primarily fats to primarily sugar is much more indicative of their performance than the maximum amount of oxygen they can absorb or their maximum lactate steady state.

The anaerobic threshold is an important factor too, but less so. We would like it recorded, but not at the expense of identifying the aerobic threshold.

Why not VO2 max?

The sports we coach (climbing, mountaineering, ski mountaineering, and ultra-distance running) are very long duration activities lasting all day, often multiple days, sometimes without rest. During these events, the athletes rarely work at an intensity that requires them to be tapping into their anaerobic systems much at all, and it's never near maximum.

As such, VO2max is of no interest to us whatsoever other than as a curiosity. As such, if the athlete wants the test to continue to failure, that's fine. But it's not necessary (nor helpful) from our perspective.

More questions?

If you have more questions about our protocol, you can contact the requesting coach or send us an email at coach@uphillathlete.com.

Thank you for your time.

Regards,

Steve House
Founder

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