



Testing the elite

TO FIND OUT MORE ABOUT SPORTS testing and to experience the lung-busting, leg-searing pain of a max test, CW visited the latest centre to provide sport science testing to the public

ELITE Fitness is based in Cardiff, and was set up by Masters in sport science and experts in the sports industry, Simon Harling and Rob Ahmun. The cutting-edge venue is in a converted industrial unit and offers the latest equipment, analysis and coaching techniques. Elite Fitness caters for all levels and provides personal training, as well as sports coaching and fitness testing using all the latest techniques.

By working with on-site physiotherapists and physiologists, clients at Elite Fitness receive all the assistance they need to pinpoint their current strengths and weaknesses and to develop a training or recovery package to meet their goals. "Our aim is to make applied sports science available to everyone," says Harling and Ahmun. At just £95 for non-members, Elite Fitness' prices reflect this as they are at the lower end of the market scale for a very high-end product.

Both Ahmun and Harling are BASES accredited: "Clients know the advice they receive is quality controlled," says Ahmun. "BASES won't accept just anyone, it took me a four-year selection period to achieve accreditation." Unlike many scientists, Ahmun and Harling are able to break down the information into layman's terms so you don't need a degree to understand them.

WHAT TESTS AND WHY? VO2max and/or blood lactate are the two tests most frequently used for club-level cyclists and above. "VO2 is used to see how fit you are. It's the maximum amount of oxygen you can use during exercise, and we take blood lactate to tighten up training zones," explains Ahmun. "During the test, power is increased in stages, 30 watts every

three minutes for example. Blood lactate is plotted against exercise intensity; a rapid increase shows your anaerobic threshold. During the test you work in, at and above your threshold." These figures are then used to calculate your training zones. Ahmun describes this as "the smarter way to train," essentially as the guesswork is taken out. Not everyone conducting

sports tests actually takes blood; many people use a method known as the deflection point, when the line of heart rate on the graph takes a dramatic downturn. At Elite they take blood samples throughout the test from a small pinprick on the ear lobe. It is completely painless and only a small drop is collected. Ahmun believes this to be better than the less intrusive deflection point method: "Blood collection is the gold-standard method. The deflection point is not always applicable, but taking blood allows us to know exactly what is happening metabolically within the body."

BEYOND THE LIMIT

A max test is an uncomfortable feeling. The purpose of the test is to take you to the point of fatigue where your heart legs and lungs can push no harder. Starting at an easy level, the watts are increased at a consistent rate over time — for example, a male elite rider might start at 120 watts and increase by 30 watts every three minutes. As the intensity increases, the rider reaches a point where they can no longer continue and voluntarily stops.

It requires a high degree of will-power to push yourself to the very limit, as the closer to max

you get the more uncomfortable you become. With your legs and lungs burning, sweat dripping off you, legs trembling and eyesight blurred, it is as much a test of mental commitment as physical. This is one very good reason why a max test should be performed only with qualified supervision — it is not unknown for subjects to throw up or feel faint after completing the test.

As a max test is not for the faint hearted, many prefer the slightly softer option of a sub-maximal test — stopping before the worst of the discomfort. "You can get good enough results from a sub-max," says Ahmun. "You could stop when the blood lactate profile has been found out, however, it is always good to determine as much as possible and watch the change in VO2 over time."

HOW TO APPLY RESULTS

Taking a test is, of course, just the start of the process. After a test at Elite Fitness you get a feedback session a week or so later. "It's a debrief for us to tell you your training zones and examples of workouts. We will give you a guide to training paces. Too many people are only at one or two paces, where they need to be working at four or five paces. We

will provide the information to help them structure training more efficiently." This isn't to say that Elite fitness will set you a day-by-day training plan — "we don't want to tread on coaches' toes" — but it will give you, or you and your coach, the information to design an effective programme.

The figures from a sports test are essentially irrelevant unless you use them to influence your training and record them for when the identical test is repeated. "When you leave Elite Fitness you go away and train with your target zones. In the retest the aim is to see a decrease in heart rate and blood lactate at the same exercise intensity — it shows you have improved.

"Recommendations on how often to test vary; I'd suggest four times a year," says Ahmun. "No tests during the race season — you are racing and testing your performance that way. There should be one test at the end of the season after a month of recovery, one test before you start your serious pre-season training, one in your build-up phase and one at the start of the season,"

Knowing where you are and where you were is key: "Take a test in January and another in March to see how training has affected you," says Ahmun.

THE CURRENCIES OF TRAINING

MEASURING POWER AND HEART RATE

HEART rate is the most frequently recorded feedback by cyclists, but it does not provide an accurate measure of the work you are doing on the bike. Heart rate is easily influenced by physical and environmental factors such as heat, cold, humidity, altitude, dehydration, glycogen depletion, illness and fatigue. The truest measure of how hard you are working on the bike is your power output.

Power is the force you can apply to the pedals over a specific time or distance. Power and heart rate together give a clearer picture of what is going on in your body than heart rate alone. "We set

training by heart rate or power depending on the measuring device of the athlete," says Elite Fitness's Rob Ahmun, so if you don't have the means to measure power don't worry. "We set a heart rate window: you shouldn't stick rigidly to a given heart rate so we use a wide window of at least 10 beats."

During a session power may drop but heart rate may stay the same or drift upwards. In time trials this is of particular significance, as maintaining a heart rate can lead to you performing negative splits where your heart rate stays the same but power decreases in the second half of the race.



HOW TO GET ELITE TESTED

JOINING THE ELITE

ELITE Fitness is based in Cardiff, just off the M4. This makes it highly accessible from London as well as the South and North West. Another point in its favour is the proximity to the excellent velodrome at Newport. Make the most of your trip and spend some time brushing up your track skills after your sports test.

If you want to really hone your technical skills, leave your drop handlebars at home and spend the afternoon at Afan Argoed or Cwmcarn mountain bike centres, both featuring waymarked technical trails, cafe and bike wash.

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PRICES:

£85 member
£95 non-member
£140 triathlon test to include 750-metre swim, run and cycle test.

USEFUL CONTACTS:

www.mbwailes.com — for details on nearby mountain bike centres.
Newport Velodrome:
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