

HIGH PERFORMANCE CYCLING



**SPORTS
SCIENCE
INSTITUTE OF
SOUTH AFRICA**

Discovery High Performance Centre

Cycling Division

Peak Performance Cycling

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Discovery High Performance Centre Cycling Division



Consultation

R275 / hour

A personal one on one consultation can be arranged with any one of our expert consultants. We will provide advice on training techniques, racing strategy or the topic of your choice.

Training programs

We no longer provide personalised training programs. We have a number of pre-written and event specific programs (including triathlon) which can be purchased through one of our consultants. Each of these programs is issued with an instruction booklet which will provide information on how to tailor these programs to your specific needs. Please email us at cyclinginfo@ssisa.com for more information. For a personalised training program, we can direct you to a suitable coach.

Body Composition - Sum of skin folds:

R 90

Body composition is used to estimate body fat percentage and to calculate the client's ideal competition weight. In conjunction with experienced dieticians we can formulate an eating plan and or prescribe changes in exercise training to achieve ideal body composition for racing or general well being.

Body Composition - Somatotype:

R 90

Somatotyping is used to determine body type. Specific body somatotypes are suited to particular sports and specific disciplines within sports. We therefore help clients assess their strengths and weaknesses within their chosen sporting codes.



VO²max TEST :**R660**

The VO²max test has traditionally been used to measure the training status and ability of endurance athletes. We measure oxygen uptake and CO² exhalation continuously during a graded exercise test similar to that of the Wmax Test. The data collected from this test allows us to identify:

The fat/carbohydrate oxidation crossover point.

The lactate turnpoint power output and heart rate values.

Peak power output.

Maximum heart rate.

VO²max.

This test is therefore recommended for elite level athletes and provides all the important information needed to prescribe training effectively in a single, non-invasive test.

Wmax Test (Peak Power output):**R440**

The W_{max} test is the ‘staple’ test for measuring performance and measuring improvements in response to training. This test allows us to determine a peak power output which correlates well with 20km time trial and 40km time trial performance as well as endurance performance. We can also determine the lactate turnpoint indirectly during some tests by applying the conconi test to the heart rate data. This test is therefore the minimum necessary to prescribe training intensities and to monitor changes in performance.



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|------------------------------------|---------------------|--------------------|
| <u>Time Trial analysis:</u> | <u>5 km</u> | <u>R220</u> |
| | <u>20 km</u> | <u>R275</u> |
| | <u>40 km</u> | <u>R390</u> |

This is the simplest test for predicting maximal lactate steady state or OBLA heart rate and power output respectively. This test correlates with performance in endurance events.

Blood lactate curve and analysis: **R770**

At SSISA we measure blood lactate curves by drawing blood from a forearm vein during a progressive exercise test. Although this is more expensive than skin prick testing, the test is more accurate than skin prick analysers which can accurately assess lactate turnpoint power output and heart rate but can be inaccurate (by as much as 50%) in measuring the actual blood lactate concentrations for these values.

Ergofit report bike fitting **R380**

The client's measurements and history are taken and a computer generated report is issued. This can be taken to a bicycle retailer who will then alter the bicycle as required.



ErgoMax bike fitting

R600

The client's measurements are taken as per Ergofit. The client is then positioned on the bike according to the Ergofit report and a 7 point check is performed to assess whether all parameters are optimal. Additional forefoot, rearfoot and leg length assessment and correction are carried out.

Comprehensive Bike Setup:

R825

We begin by evaluating each major joint for flexibility and stability, identifying key risk factors for injury prevention. We then perform a comprehensive bike fitting that includes an Ergofit measurement system and report. This is double checked by measuring each joint angle to ensure that the predicted fit is accurate. Finally, a Computrainer spinscan analysis is used to evaluate pedalling action for any abnormalities.

