



**PERFORMANCE  
SPORT SERVICES**  
Sports Science

## RUNNING PHYSIOLOGICAL ASSESSMENT

### PRE-TEST PREPARATION:

#### DO'S:

1. Bring appropriate footwear for treadmill running.
2. Bring your own sports drink if you wish to drink this during the test. Otherwise water will be freely available.
3. Try to walk or drive to the test venue. Cycling prior to the test may affect the test results.
4. Complete and bring this consent form.

#### DON'T'S:

It is essential that you follow these guidelines to ensure pre-test standardisation:-

1. Do not do heavy sessions (running or weights) the day prior to the treadmill test. Easy/light runs are okay.
2. Do not run on the morning of the test or warm-up prior to the test (warm-up included in test).
3. Do not eat a large meal within a 3 hour period before the test (snacks are okay).

### TEST INFORMATION:

You will need to allow 1 1/2 hours in total for your visit.

### TEST ONE: SUBMAXIMAL ASSESSMENT

This test allows us to assess and monitor your endurance fitness by measuring your physiological response to exercise of increasing intensity.

The test involves running for three minute stages for 4 - 8 different speeds on a treadmill. This is not a maximal test so none of the speeds should be strenuous. The actual speeds at which you will run will be selected according to your running ability. The intention will be to start you off at a very easy pace and increase the speed such that you are working at around 85% max heart rate in the final 3 min stage. This is likely to require you to run for between 4 and 8 stages. In the last 15 seconds of each 3 min stage, a small blood sample will be taken from a finger. These blood samples will be analysed to determine blood lactate concentration. During the test oxygen uptake (using a face mask to feed expired air to an on-line gas analyser) and heart rate will also be measured throughout.



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## TEST TWO: MAXIMAL OXYGEN UPTAKE (VO<sub>2</sub> MAX) TEST

The purpose of this test is to determine your maximum ability to use the oxygen you breathe in to provide energy for working muscles (known as your VO<sub>2</sub> max). You will be required to run for as long as possible (usually between 5 and 10 min.) at a constant speed on the treadmill. The treadmill gradient (slope) will initially be set at a 1% incline and will increase by 1 % every minute thereafter.

### *POSSIBLE RISKS/ DISCOMFORTS*

During the VO<sub>2</sub> max test you will reach your maximal ability to extract oxygen from the air that you breathe in. This will require maximal effort for a duration of around 1 to 2 minutes. Following this however, athletes usually fully recover within 5 minutes. If at any point in time during the test you experience intolerable discomfort, then stop exercising immediately. The sport scientist will be vigilant at all times during the testing and will be ready to end the test should you report, or even appear, unduly stressed.

The procedures for blood sampling will be carried out in accordance with the Code Of Practice For Workers Having Contact With Body Fluids thereby minimising any risks of infection.

### FEEDBACK

The information from the first test will be used to determine your lactate thresholds and associated heart rates as well as your running economy. The second test will give information on your VO<sub>2</sub>max and maximal heart rate. Within a week of your assessment you will receive a detailed written report explaining your results, highlighting your strengths and weaknesses and giving training advice and guidelines.