

## Measuring cardiorespiratory fitness and body composition to improve health outcomes.



Inner West Allied Health & Specialist Centre integrates high precision science with expert interpretation and guidance, to ensure the most effective fitness and health outcomes are achieved.

### Why everyone should undertake a $VO_{2max}$ evaluation?

Cardiologists and exercise physiologists routinely recommend that  $VO_{2max}$  (the global gold standard measure of cardiorespiratory fitness) should be considered as a fundamental “vital sign” evaluation; since low  $VO_{2max}$  is strongly associated with numerous serious heart conditions; cancers; dementia; type 2 diabetes; and depression, amongst other chronic diseases. Furthermore,  $VO_{2max}$  is a strong predictor of all-cause morbidity and mortality. Assessing  $VO_{2max}$  also provides the beneficiary with a specific outcome focus that is realistic and targeted.



### $VO_{2max}$ – what’s involved?

The evaluation starts at approximate 50% intensity, progressing in 1 minute periods until fatigue. The total duration of the test is typically ~8-12min. A face mask is secured around your head in order to continuously measure oxygen consumption, ventilation and respiration. Heart rate is also monitored continuously. You will also be asked to rate your interpretation of intensity during each stage (6-20 point BORG scale), which is then integrated with your physiological metrics.

Following the test, comprehensive feedback is provided, highlighting key results and recommendations that are unique to your physiology and health risks.

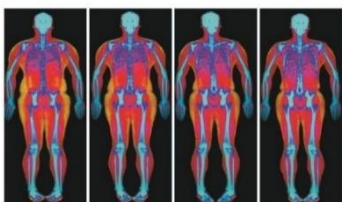
### Why everyone should undertake a DEXA evaluation?

Body composition is assessed via Dual energy X-ray absorptiometry (DEXA) which is a well-established and high precision technique for measuring bone mineral density (BMD), body fat and lean muscle mass. Increased body fat increases risk of developing diabetes; heart disease; and a number of cancers. Decreased muscle mass and bone mineral density increases risk of musculoskeletal diseases and accelerated frailty. Similar to  $VO_{2max}$ , assessing body composition provides beneficiaries with an outcome focus specific to the metric measured.



### DEXA and safety.

DEXA scan is very safe, and there are no complications associated with the procedure. The radiation doses are very low, which, in fact, is less than one day’s exposure to natural environmental or background radiation. The average person in Australia receives about 1500 microsieverts every year from natural background radiation. The amount of radiation received from DEXA scan is approximately 4 microsieverts of radiation, which is well below the International Commission on Radiological Protection (ICRP) limit of 1000 microsieverts per annum (over and above natural background).



**Expected outcomes:** Following both tests, you will be provided best practice guidelines on ways to improve cardiovascular fitness; strength; body composition; injury and illness prevention.

**Preparing for VO<sub>2max</sub>:**

Similar to how you would normally prepare for a challenging training session. We advise to refrain from exercise, food and caffeine for ~3-4hrs prior to the test. If you are training the previous day, light or recovery paced exercise is advised. A medical questionnaire will be sent to you, and is required to be sighted by the administering physiologist prior to commencing the test. You will wear your regular walking/running apparel for a treadmill test; or cycling apparel for a cycling test.

**Preparing for DEXA:**

In preparation for DEXA, it is helpful to wear clothing which is loose fitting and free of metallic attachments such as buttons, zippers, buckles, wired bras and fasteners. You will also need to remove any attached metallic devices, such as jewelry. You must notify the practitioner if you think you could be pregnant. DO NOT schedule your DEXA scan within one week of having a barium x-ray, a nuclear medicine study or an injection of x-ray dye. Prior to your test, do not eat a heavy meal or exercise vigorously. DEXA is a simple and fast procedure, involving no injections and is not painful. You will be required to lie face up on a padded table for 7 minutes.

**Practitioners:**

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