

Sub-maximal Oxygen Uptake (SM)

$$[[\text{Workload (W)}/\text{Body Mass (kg)}] \times 10.8] + 3.5 + 3.5$$

- mass = 66kg
- workload 1 = 50W
- workload 2 = 125W

SM1	15.18
SM2	27.45

Slope of line of best fit

Multi-stage slope prediction:

$$(\text{SM2} - \text{SM1}) / (\text{HR2} - \text{HR1})$$

- HR1 = 97
- HR2 = 160

Slope	0.19
-------	------

$$\text{Predicted VO2max} = \text{SM2} + [\text{slope} \times (\text{HRmax} - \text{HR2})]$$

- HRmax = 220 – age
- = 198bpm

VO2max	198.2mL/kg/min
--------	----------------

Aerobic Fitness Score

$$10 \times \text{VO2max}$$

= 1981.2

CPAFLA Health Benefit Zone**Excellent: 472+**

Very Good: 420-471

Good: 378-419

Fair: 350-377

Needs Improvement: <350

Interpretation of Results: According to the above YMCA fitness test results, this individual is in extremely good shape. However, for already well-trained athletes, sub-maximal VO2max tests tend to over-predict fitness level, as seen here with the predicted VO2max score. Sub-max tests can be useful though, for general populations or perhaps for athletes who are currently injured as sub-max testing puts less stress on the body than max tests do.