

# Body weight, height, lifestyle and cardiovascular variables predict the VO<sub>2</sub> max in college student [El peso corporal, la estatura, variables del estilo de vida y cardiovasculares predicen el VO<sub>2</sub> máx. En estudiantes universitarios]

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**Introduction:** To predict VO<sub>2</sub> max it can be used simple means such as body characteristics and lifestyle. **Aim:** To elaborate an equation to estimate the VO<sub>2</sub> max based on body weight, height, lifestyle and cardiovascular variables in college students. **Methods:** In a sample of 35 men and 35 women of 22.5±1.9 years body weight, height, consumption of alcohol, tobacco and medications, cardiorespiratory variables at rest and VO<sub>2</sub> max in a cycle ergometer test until exhaustion were measured. A correlation between variables was determined, which were included in a multivariate equation and the agreement of the model with the Bland-Altman diagram was verified. A significance of p<0.05 was assigned with the SPSS v.20 program. **Results:** the prediction equation is  $VO_2 \text{ max (ml.min}^{-1}) = -1268.945 + (1305.94 \times \text{Sex [Female} = 2, \text{Male} = 1]) + (17.868 \times \text{Weight}) + (1034.204 \times \text{Height}) + (-97.223 \times \text{Medications [YES} = 1, \text{NO} = 2]) + (3.867 \times \text{Systolic blood pressure}) + (-5.574 \times \text{Resting heart rate [HRr]})$  (r = 0.892, r<sup>2</sup> = 0.795, p<0.001). According to Bland-Altman there are no differences between the equation and the cycle ergometer test (p = 0.644) and no values of VO<sub>2</sub> max were outside the limits of agreement. **Discussions:** the main finding is that weight and stature have the greatest predictive power, along with sex, and the other variables increase it, in addition, it is a pioneering study in Chile. Some research uses body characteristics and lifestyles to predict VO<sub>2</sub> max, but only two include smoking, one HR and none blood pressure. **Conclusions:** Anthropometric, lifestyle and cardiovascular variables predict VO<sub>2</sub> max. The predictive model can be used considering the differences between the characteristics of

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Body height

Body weight

Cardiovascular physiologic processes

Life style

Oxygen consumption