THE EFFECT OF A 12-HOUR FAST ON MAXIMAL AEROBIC PERFORMANCE

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Introduction
Maximum aerobic capacity (VO\textsubscript{2max}) is an indicator of physical fitness and a measurement of an individual’s ability to transport and utilize oxygen. It is measured in absolute terms in (L/min) and can be normalized with weight in (ml/kg/min). Often times food may not be considered a contributing factor to an individuals VO\textsubscript{2max}, however, ones diet could have a direct effect on their ability to perform incremental exercise to max. Research suggests fasting may have detrimental effects on individual’s ability to exercise, resulting in a lower VO\textsubscript{2max} and a quicker time to fatigue.

Purpose
The purpose of this study was to investigate the effects of a 12-hour fast on maximal aerobic performance.

Methods
Five female (W; age 21.2 ± 1.48 yrs) college students volunteered to participate in this study. Each subject came in on two separate occasions separated with one week in between each test date. Testing was randomized and each subject performed a Bruce protocol while fasting and under normal post absorptive conditions as the control. Subjects performed the Bruce protocol which is a graded exercise test on the treadmill with increasing speed and elevation until exhaustion.

Results (cont’d)
Statistical differences of VO\textsubscript{2max} and time can be seen in figures 1 and 2. However, no significant difference was observed between HR (F: 191 ± 8.6 bpm; NF: 194.2 ± 6.9 bpm; p=0.14) and RPE (F: 18.6 ± 0.54; NF: 19.2 ± 0.45; p=0.07).

Conclusions
The results of this study indicate that fasting decreases the individual's ability to transport and utilize oxygen to the same extent as when that person is fueled properly. It also revealed that fasting leads to a quicker time of fatigue than under normal post absorptive conditions. These differences may be attributed to not having the proper nutrients that are needed to fuel aerobic performance. Further research should look at the effects of longer fasting periods as well as body acclimation to performing in a fasted state.