**The energy cost of cycling in young obese women**

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European Journal of Applied Physiology 97: 16-25, 2006.

In order to evaluate the difference in the energy cost of submaximal cycling between normal weight (NW) and obese (OB) females, nine OB (age 23.2 years±1.6 SE, BMI 40.4±1.2 kg/m$^2$) and nine NW (age 25.6 years±1.8, BMI 21.7±0.6 kg/m$^2$) healthy young women were studied during a grade bicycle ergometer test at 40, 60, 80, 100 and 120 W. At rest and at all workloads, oxygen uptake ($VO_2$) was higher in OB than in NW women (Student's *t* test, $p$<0.05-0.01), as well as respiratory quotient during all exercise levels ($p$<0.05-0.01), while similar values of heart rate, pulmonary ventilation and breathing efficiency were found between the two groups. Maximal $VO_2$ and anaerobic threshold were higher in OB women, and they also explained the higher oxygen pulse observed during submaximal exercise, but no differences was found when the values were adjusted for fat-free mass. While net mechanical efficiency (ME) was significantly lower in OB (ANOVA, $p$<0.05), delta ME was similar in both groups, indicating no substantial derangement of muscle intrinsic efficiency in obesity, but suggesting that the increased mass of body segments involved in cycling movements may be chiefly responsible for the higher energy cost of this type of exercise. Comparison of the actual $VO_2$ presently measured with that predicted by available cycle ergometry equations at the different workloads indicated inaccuracy of various degrees ranging from 8.4 to - 31.9%. It is concluded that the lower mechanical efficiency displayed by obese women in cycling has to be taken into account when prescribing exercise through methods predicting the metabolic load.