Abstract

Resistance training is an intense anaerobic glycolytic activity and has been shown that estimates of energy expenditure in this activity turn out into an error that varies between 13 and 30%. The main aim of this paper is to describe the anaerobic energy contribution in circuit weight training. Twelve men (20-26 years) and seventeen women (18-29 years) students in Science of Physical Activity and Sport performed a circuit training at six different intensities (between 30% and 80% of 15RM). During all the circuits aerobic energy expenditure was registered by indirect calorimetry, heart rate with Polar® monitors and lactate concentration in capillary blood to measure the anaerobic contribution. The increased due to anaerobic energy was between 5,1% and a maximum of 13,5% which clearly means that to measure or not the anaerobic contribution in circuit training can lead to an average error of 9,65%. There are significant differences (P <0.05) between aerobic energy expenditure and total (aerobic+anaerobic) at all the intensities, in a circuit weight training with progressive loads.

Keywords

Resistance training; energy expenditure; lactate; circuit.