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AN INTERVAL TRAINING PROGRAMME: ITS EFFECT ON SEDENTARY, NON-SEDENTARY AND SPORTSMEN: A CONTROVERSIAL ISSUE

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ABSTRACT

The purpose of the present study was to investigate the "A Interval training program and its effect on Recreational Athletes, sedentary, and Highly Trained individuals". In this competitive world of Sports the benefits of interval training program, especially Training High Intensity Interval (THII), have aroused the interest of professionals and researchers in the area of health, since it has been shown effective in health promotion. The aim of this brief review is to exhibit physiological adaptations arising from the THII in individuals who are highly trained and sedentary individuals and recreational. The investigator confirmed as per the various researches and the literature available, indicates clear benefits of THII practice both for athletes already highly trained, with comparison to the people Sedentary and moderately active.

KEYWORDS :*Interval Training; Performance; Health.*

INTRODUCTION :

Over the last few decades have seen the emergence of several methods of training, either they are in search of improvement in performance or for health promotion. Within this context the interval training was proposed as a new method that could improve the performance of athletes who already possessed great physical fitness. Currently the benefits of interval training, in particular the Training High Intensity Interval (THII), have aroused the interest of professional's and researchers in the area of health, because it has been shown to be effective for health promotion. From this, the purpose of this brief review is to demonstrate physiological adaptations arising from the THII in individuals' already highly trained and sedentary individuals and the individual who participated only in recreational activities. The THII when performed by individuals and recreational sendentários improves endurance performance in an extension bigger than training continuous sub-maximal exercise alone. This improvement appears to be due, in part, the improvement in the contribution of both aerobic and anaerobic metabolisms for energy demand which increases the availability of ATP and improves the status of energy in muscle activity. However, improvements in the ability aerobic metabolic, obtained by increasing the expression of type-I fibers, the capillarization oxidative enzyme activity

and it is more common to the THII in untrained individuals and moderately active than for athletes who have already have a high aerobic fitness. Harmer et al. (2000) have reported that Sprint training (04 to 10 sprintson the bike in the fastest speed possible, with 3 to 4 minutes of rest, 03 times per week for 07 weeks) improves the time to fatigue (% +21; p< 0.001) in 130% of VO2Max load pre-training. This increase in capacity was attributed to reduction of the generation of anaerobic ATP, and increasing aerobic contribution to the supply of energy. What can be justified by increased mitochondrial oxidation of fatty acids demonstrated in greater quantity for THII than for training continuous sub-maximal exercise (p < 0.0 .5)? Increases in oxidative and glycolytic enzyme activity have been associated with the improvement of the ability to perform the exercise in individual suntrained and recreational after THII.

In addition to the best metabolic response, some studies have shown positive adjustments on cardiac variables, mainly due to the increased systolic volume, since the maximum heart rate remains unchanged in response to endurance training; this change leads to an increase in the ability to deliver oxygen to the muscle during high-intensity workouts. The systolic volume can increase through the high ventricular contractility left and/or through increased cardiac filling pressure, which raises the end diastolic volume resulting in a high volume also systolic. Potential changes in systolic volume and plasma volume in reply to THII in athletes already highly trained, have not been examined. In untrained individuals, sympathetic nerve muscle activity has shown attenuated during exercise after the training, suggesting a reduced nice flow to same sub maximal load. Nevertheless, the ability or release of noradrenaline during a progressive test seems to be superior after the THII. Some studies have devoted greater attention to physiological adaptation promoted by THII in already highly trained athletes, VO2Max above 60mL/kg/min-1find more satisfactory results than when compared to the methods of continuous exercise.

Laursen et al. (2007) reported changes in the variables cardio-respiratory performance and after 4 sessions of THII (20 × 60seconds in peak power, 2 minutes) recovery after 2 weeks in highly trained cyclists 7 (VO2peak = 68.7 ± 1.3 mL/kg/min). These individuals are able to perform a greater number of sprints and complete larger total work at the end of the training. The improvement in performance in the THII was accompanied by reduction of both, respiratory exchange ratio and 1minute HR recovery from first to fourth session of THII (p < 0.05); the ventilatory threshold and peak power obtained during progressive testing also improved as a result of four sessions of THII (p < 0.05).

Another potential mechanism that may be responsible for the improvement of endurance performance after THII in highly trained athletes is an improvement on heat-tolerance via an increased blood flow skin and sweat rate. Although experimental THII sessions are usually completed in termoneutros environments, high-exercise intensity produces high internal temperature (~ 40° C). Due to strong association that has been established between fatigue and high temperatures, it is possible highly trained athletes can adapt, which means improved regulating the temperature. In addition, the THII can improve the load of heat tolerance in physically active individuals, but this needs to be better investigated in highly trained athletes. In relation to metabolic adaptations in highly trained athletes, Billat (2001) showed that the THII by promoting a greater use of fatty acids. Supporting this possibility, She play and employees while examined the effects of "tapering" (reduction in volume before endurance competition) in endurance performance and activity of citrate syntheses in highly trained middle distance runners, showed that ataper high-intensity (3 to 5 × 500 m sprints in 120% VO2 peak, 800m recovery, 5 times a week) improved the time to exhaustion~ 115% VO2 peak (+22%) and increased the activity of citrate Synthase (+18%)compared to low-intensity taper (p < 0.05). Other potential benefit of the THII is the improvement in the ability to buffering of H +, an up-or down-

regulation of pumps of muscle and a point of cautions respiratory compensation positively changed.

CONCLUSION

As per the above discussed facts, we can assume that there is clear positive effect of interval Training program of the THII for athletes already highly trained, as for sedentary people and moderately active individuals. We still recommend that this kind of training method can be used intraining programs seeking improvements in cardio-respiratory fitness, by its already demonstrated physiological efficiency and for your encouragement to variation of training methods for the planning of training for all non-pathological populations.

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