

KETOGENIC DIET DOES NOT AFFECT STRENGTH PERFORMANCE IN ELITE ARTISTIC GYMNASTS

Paoli A et al; *Journal of the International Society of Sports Nutrition* 2012, 9:34

Introduction

Despite the increasing use of low carbohydrates/ketogenic diets (KD) on weight control and management of metabolic syndrome (Westman et al., 2007) there are paucity of researches about effects of KD diets on sport performances (Phinney et al., 1983a, 1983b). KD diets maybe useful in sports with weight class divisions. The aim of our study was to investigate the influence of KD on explosive strength performance, specifically in elite artistic gymnasts.

Methods

8 male subjects (age $20,9 \pm 5,5$ yrs) were recruited. Several physical and performance tests (body composition analysis, hanging straight leg raise, ground push up, parallel bars push up, pull up, squat jump, countermovement jump, 30 sec continuous jumps) were administered before and after 20 days of KD with support of phytoextract (Tisanoreica Diet; Paoli et al., 2010). During the KD the athletes consumes less than 20g of CHO per day and performed the normal training program. After three months the same protocol of tests (during a similar training period) was performed before and after 20 days of typical mediterranean diet.

Results

We utilized a repeated-measure t-test. No significant differences were detected between KD and Mediterranean diets in Squat Jump, countermovement jump, parallel bars push up and pull up but there are nearly significant increase during KD in ground push up and hanging straight leg. A more clear significant differences were detected on body composition: after KD there was a decrease of Kg of fat (from $4,95 \pm 1,05$ to $3,92 \pm 1,05$ $p < 0.019$) and a decrease of fat percentage (from $7,40 \pm 1,43$ to $5,74 \pm 1,43$ $p < 0.01$) with a contextual slightly but non significant increase in muscle mass.

Discussion

Despite concerns of coaches and doctors about the possible detrimental effects of low carbohydrates diets on performances and the well known importance of carbohydrates on performance (Maughan et al., 1997) there are no data about KD and explosive strength performance. The undeniable and sudden effect of KD on fat loss maybe useful for those athletes who compete in sports based on weight class. We've demonstrated that using KD for a short time period (i.e. 20 days) has no negative effect on explosive strength performance.

References

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