JOURNAL OF SOCIAL AND HUMANITIES SCIENCES RESEARCH

Uluslararası Sosyal ve Beşeri Bilimler Araştırma Dergisi

Open Access Refereed e-Journal & Refereed & Indexed

ArticleType	ResearchArticle	***Accepted / Makale Kabul***	22.12.2019
Received / Makale Geliş	22.10.2019	***Published / Yayınlanma***	22.12.2019

THE EFFECT OF MILK SUPPLEMENT IN TENNIS ON HIT

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Doi Number: http://dx.doi.org/10.26450/jshsr.1654
Reference: Oner, S. &Temur, H. B. (2019). The effect of milk supplement in tennis on hit. *Journal of Social and Humanities Sciences Research*, *6*(47), 4274-4279.

ABSTRACT

The aim of this study is to determine the effect of milk supplementation on fatigue for tennis players. The research group consisted of 10 students (5 girls and 5 boys) aged 15-17 years exercise work in Van Youth Center. Age, height and weight measurements taken in this study and 20 meters shuttle test was used to create fatigue for tennis players. Pre-test and post-test were applied to fatigue on the hitting. Firstly, participants were got tired before pre-test and their hitting rates were checked.2 days later after milk supplementation their hitting rates were checked again. Obtained data were analyzed by SPSS 17,0 package program. The results of the research were statistically significant between the pre-test and the post-test ($p<0.05$). The difference between the pre-test and the post-test was meaningless insignificant($p>0.05$). The analysis showed a significant difference between some groups, no significant difference was observed between some groups. The reason for this, the nutritional supplement has given only once.
Keywords: Milk, Supplement, Tennis

1. INTRODUCTION

As in all fields and sports, tennis teaching methods have changed in the last 20 years. In modern teaching methods, instead of a routine systematic, in addition to teaching methods developed according to the level of sportsmen, tennis materials and game rules were changed to facilitate tennis education. With these changes in the learning process, the physical, mental and skill capacities of the players have improved compared to the past (Unierzyski &Crespo, 2007). This lifestyle change contributes to the development of physical, mental, psychological and biomotoric characteristics. One of the activities that people do in their leisure time is tennis. Tennis has rapidly developed into a popular sport. In order to taste the pleasure of playing tournaments, people have started to spend more time on tennis. This intense interest in tennis and the increase of professionalization brings the necessity of scientific studies on the principles of the game. Tennis is no longer just a game. It has become a professional sport (Kermen, 1998,Cinar, Akbulut, Kilic, Özdal, & Sarikaya, 2018). Fatigue In everyday life, the term fatigue is expressed as a decrease in mental performance or physical performance. Fatigue is expressed by many athletes as feeling muscles weak, slow and sometimes painful (Billat, 2001, Gencer, Coskun, Sarikaya & Kaplan, 2018, Cinar, Akbulut & Sarikaya, 2017, Selcuk, Cinar, Sarikaya & Oner, 2018).In some cases, fatigue may be expressed differently by sport disciplines. For example, while biomechanics define power output as a decrease, psychologists can express it as a feeling of burnout and physiologists can express it as suppression in the physiological system (Cinar, Talaghir, Akbulut, Turgut & Sarikaya, 2017, Pancar, Ozdal, Sarikaya & Cinar, 2018).

There is no consensus on the organ in which fatigue occurs. Because fatigue, which is a multifaceted process, the body's response to exercise varies according to the form graph, the intensity of the load, the type of training and the severity (Ament & Gijsbertus, 2009,Ozer, Bozdal &Pancar, 2017,Tahhan, Ozdal, Vural &Pancar, 2018,Vural, Ozdal & Oztutuncu, 2017,Ozdal, Bicer, Pancar, 2019). It is stated that nutritional supplementation increases exercise performance and adaptation to training as well as changes in biochemical parameters (Pancar, Ozdal &Vural, 2019;Pancar et al, 2018, Pancar, Tasdogan &Cinar, 2019). Any training technique, mechanical device, nutritional support, paralogical support or physiological technique is ergogenic assistance. These aids are effective in preparing the individual for exercise, increasing the efficiency of the exercise or increasing the recovery after the exercise (Kreider et al, 2004). Anything done to improve performance can be considered ergogenic support. It is ergogenic support to consult sports shoes, medicines and sports psychologist, apply special diets and use nutritional supplements. Nutritional ergogenic supports; nutritional ergogenic supplements are special diets, nutritional practices and strategies used by nutrition support products, foods and athletes to improve performance (Ersoy, 2013).

In recent years, the use of milk as a good exercise drink for strength and endurance sports has become a subject of increasing curiosity. According to a limited number of studies, milk is a suitable and effective drink for the acute repair of protein metabolism after strength training. Milk consumption; Acute muscle protein synthesis increases muscle protein balance. In addition, a significant increase in muscle hypertrophy (increase in volume and weight) and lean mass is observed when milk consumption is combined with strength training for a minimum of 12 weeks. Although research is limited, milk can be recommended as a good drink for post-exercise in endurance sports and its efficacy as a rehydration drink has also been proven. Compared to sports drinks, milk is a beverage that contains more nutrients for individuals engaged in strength and endurance sports. Low-fat, diluted milk can be a safe and effective sports drinkfor the post-exercise period. On the other hand, it is clear thatthe effectiveness and proper use of milk in the field of sports nutrition will be better defined by researches (Roy, 2018). The aim of this study was to determine the effect of milk supplementation on fatigue in tennis players.

2. INDIVIDUALS AND METHOD

2.1. Subjects

The research group consists of 10 students (5 girls and 5 boys) aged between 15-17 years who are doing sports in Van Youth Center. The effect of fatigue on hit was investigated by creating fatigue. In this study, age, height and weight measurements were taken and 20 meters shuttle test was used to create fatigue in athletes. Before the pre-test, the fatigue was formed and the hit rate was evaluated 2 days later. The normality homogeneity test was applied to the data and as a result, it was determined that the data were not distributed normally and Wilcoxon test, which is one of the non-parametric tests, was applied. The data obtained were analyzed with SPSS 17.0 package program.

Body Weight Measurement: Weights and shorts and t-shirts were placed on the scales with their bare feet when they were inactive and their weights were taken from the screen and recorded in kg.

Length Measurement: Meter is used for height measurements. During this measurement, the subjects did not have any clothes on their feet and heads that could change the measurement. Measurements were taken with bare feet.

Age: The age of the athletes was determined as years.

20 Meter Shuttle Run Test: Before starting the test, subjects were motivated to obtain high efficiency. Subjects were informed about the test. The subjects ran a distance of 20 m as a round-trip. The running speed is controlled at regular intervals by means of a beeper. The subject started with the first beep. It must reach the other line until the second signal. When he heard the second signal, he went back to the starting line and continued with the signals. The speed, which was slow at the beginning, gradually increased every 10 seconds. If the subject misses a signal, if the second catches up, he continues the test. If the subject has missed 2 signals, the test is over.

Nutritional Supplement: Anything done to improve performance can be considered ergogenic support. It is ergogenic support to consult sports shoes, medicines and sports psychologist, apply special diets

and use nutritional supplements. Nutritional ergogenic supports; nutritional ergogenic supplements are special diets, nutritional practices and strategies used by nutrition support products, foods and athletes to improve performance (Ersoy, 2013).

3. RESULTS

Table 1. Demographic Information of Participants

	Gender	N	Mean	Standart Deviation	Min	Max
Age	Women	5	15,2	0,83	14	16
	Man	5	15,8	1,09	15	17
Height	Women	5	161,8	3,83	156	165
	Man	5	176	6,36	168	183
Weight	Women	5	52,2	5,01	48	60
	Man	5	67	12,24	57	88

Table 2. Women's Pre-test and Post-test Values

VARIABLES		N	Mean	Standart Deviation	Z	P
FOREHAND PARALLEL	PRE-TEST	5	4,4	1,81	-2,07	0,038
	POST-TEST	5	6	1,58		
BACHAND PARALLEL	PRE-TEST	5	4,6	1,67	-2,121	0,034
	POST-TEST	5	5,8	1,48		
FOREHAND CROSS	PRE-TEST	5	4	1,87	-2,121	0,48
	POST-TEST	5	4,4	0,54		
BACHAND CROSS	PRE-TEST	5	3,8	2,16	-2,032	0,042
	POST-TEST	5	6	1,58		

When the forehand parallel tests of the female participants were examined, the pre-test mean value was 4.40 and the post-test meansthe value was 6.00, and this difference was statistically significant ($p < 0.05$). When the backhand anterior and final parallel tests of the participants were examined, the averages were 4.60 and 5.80, respectively. This difference was statistically significant ($p < 0.05$). When the backhand cross tests of the participants were examined, the pre-test value was 3.80 and the post-test value was 6.00, and this difference was statistically significant ($p < 0.05$). When the forehand cross anterior and posttest tests of the participants were examined, the mean values were found to be 4.00 and 4.40, respectively. This difference was found to be statistically insignificant ($p > 0.05$).

Table 3. Pre-test and Post-test Values of Men

VARIABLES		N	Mean	Standart Deviation	Z	P
FOREHAND PARALEL	PRE-TEST	5	6	1,87	-2,236	0,355
	POST-TEST	5	8	1,87		
BACHAND PARALLEL	PRE-TEST	5	6	1	-0,816	0,414
	POST-TEST	5	5,4	1,51		
FOREHAND CROSS	PRE-TEST	5	6,4	1,34	-0,272	0,785
	POST-TEST	5	6,2	0,83		
BACHAND CROSS	PRE-TEST	5	6	1	-1,3	0,194
	POST-TEST	5	5,2	0,83		

When the forehand parallel pre and post tests of male participants were examined, the mean values were 6.00 and 8.00, respectively. This difference was statistically significant ($p < 0.05$). When the backhand parallel tests of the participants were examined, the pre-test value was 6.00 and the post-test average value was 5.40, and this difference was found to be statistically insignificant ($p > 0.05$). When the forehand anterior and final cross tests of the participants were examined, the mean values were found to be 6.40 and 6.20, respectively. This difference was found to be statistically insignificant ($p > 0.05$). When the backhand anterior and final cross tests of the participants were examined, the mean values were 6.00 and 5.20, respectively. This difference was found to be statistically insignificant ($p > 0.05$).

4. CONCLUSION

In recent years, Turkey has been increasing and the consumption of energy drinks among all athletes in the world. Although the composition of energy drinks reported to provide mental alertness, increase

endurance and energy, reduce fatigue and generally improve performance, the composition of caffeine, guarana, glucuronolactone, taurine, ginseng, L carnitine, sugar and vitamin B, in general, may vary. Many young people and athletes do not know the difference between energy drinks and sports drinks. The main difference between sports drinks is that sports drinks do not contain caffeine or other stimulants. Therefore, it is not recommended to consume energy drinks during intense physical activity. It should not be consumed with alcohol as it may mask alcohol intoxication. The amount of caffeine in energy drinks should not exceed 150 mg / L (Sipahi &Sonmez, 2014).

In this study, milk supplementation was found to be a significant result in forehand parallel, backhand parallel and backhand cross. In conclusion, nutrient intake affects sports performance. Milk can have an effect on endurance. It may be thought to accelerate endurance after exercise. However, a meaningless result was observed in the forehand cross. This may be due to under-supplementation. In the literature; Immediately after the exercise and during the 2-hour recovery, it was determined that participants consuming liquid containing chocolate milk and carbohydrates had a significant increase in the time consumed and total work in endurance exercises. At the end of the study, it was shown that milk is a good drink in recovery (Karp, Johnston, Tecklenburg Mickleborough, Fly &Stager, 2006). In their studies, they stated that caffeine had no significant effect on muscle strength and fatigue in short-term maximal exercises (Greer, Morales &Coles, 2006). In another study; studies on female and male soccer players have shown that acute creatine intake increases the severity of exercise (such as splash, jogging and agility) for about one week. Despite these significant results, there are recent studies suggesting that acute creatine supplementation has no positive effect on repeated short running capacity in the fatigue and match simulation protocol, but supports that long-term use may have more positive effects on performance (Williams, Abt &Kilding, 2014). Caffeine can contribute to endurance performance by increasing the mobilization of fatty acids, thereby protecting glycogen stores. In addition, caffeine can facilitate calcium transport and affect muscle contraction, as well as reducing fatigue, as well as reducing plasma potassium accumulation associated with fatigue. The ergogenic effect can be achieved with 6.5-7 mg / kg consumption before exercise. There is no positive effect of caffeine consumed before high intensity exercises (Ersoy, 2010).

By examining the effect of the goal setting of the players on the skills of the skills in the penalty shootout, he demonstrated to the experimental group how effective the goal setting was. The increase in the pretest and posttest results of the football players in the elementary school constituting the experimental group is statistically significant. It has been determined that the goal setting studies performed together with football training have a positive effect on the penalty shootings and it is supportive to conclude that the goal setting increases the performance significantly. The data support this research. As a result; it can be used as a method in training as it is effective in tennis branch of targeted studies. With this method, it can be said that athletes show results such as accurate shooting and target orientation (Toros, Bayansalduz &Duvan, 2010). In this study, 5 mg / kg dose of caffeine examined the speed range performance. The subjects were 12 × 30 m. sprint. The results showed that caffeine has an important effect on the first 3 sprints and fatigue. Obtained from this research; caffeine has a positive effect against fatigue, it also leads to negative interpretations (Glaister et al, 2008). In the study, it was found that caffeine supplementation has an ergogenic effect in aerobic studies of athletes who are middle and high endurance athletes (Goldstein et al, 2010). Another purpose of beverages consumed after endurance exercises is to rehydrate for excessive fluid loss after sweating. There is a study examining the effectiveness of low-fat milk as a rehydration drink (Shirreffs, Watson &Maughan, 2007). As a result, it can be said that the effect of nutritional supplementation on performance is positive on several parameters. Most studies that positively affect sports performance are based on the possible physiological effect mechanisms of nutritional support.

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