The benefits of water aerobic exercise in different temperatures on blood pressure levels

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Abstract

Background and Aims: The water environments are a pleasant, healthy and have a health benefits. Water temperature is an important factor in the aquatic environment, which can have countless benefits, including blood pressure modification. The purpose of this study was to investigate the benefits of water aerobic exercise in different temperatures on blood pressure levels.

Methods: The subjects of this study were academic active men in the age range of 20-30 years. After completing the health and satisfaction questionnaire, the subjects were randomly divided into control (N = 10) and experimental groups (N = 10) and for 21 consecutive days aerobic exercise in water with normal temperature (29 °C) and warm (39 °C). The blood pressure of the subjects was measured with a biorer tool. The one way ANOVAs used to analyzing data.

Results: The results of this study showed that in a consecutive period of 3 weeks, the aerobic exercise in water with a temperature of 26 °C (water with normal temperature) caused a significant decrease in systolic blood pressure values (p = 0.04), Diastolic blood pressure (p = 0.12) and moderate blood pressure (p = 0.19) and in water with 39 °C (water water) caused a non-significant decrease in the values of systolic blood pressure (p = 0.07), diastolic blood pressure (p = 0.25) and moderate blood pressure (p = 0.41) in academic active male.

Conclusion: The temperature of the human body is influenced by the ambient temperature and the aerobic exercise in water reduces blood pressure. But the difference between water temperature and effect on blood pressure levels is not significant.

Key words: water Aerobic exercise, water temperature, blood pressure levels
NEEDING TO RECOMMEND PHYSICAL ACTIVITY FOR A REDUCTION OF FAT MASS IN OBESE WOMEN

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Introduction: Obesity can be defined as the excessive accumulation of body fat. High body fat percentage is associated with increased mortality. The aim of this study was to evaluation of body fat mass among inactive obese women.

Methodology: This study recruited obese women who were visiting the nutrition clinic in Ardabil (n=90) for weight loss. The subjects were inactive women, 18 to 45 years old, with a body mass index greater than 27.5 kg/m². The short version of the International Physical Activity Questionnaire (IPAQ) was used to measure physical activity in these women. The height and body weight of the subjects were measured prior to any intervention. The body fat percentage and fat mass were measured by a bioelectrical impedance analysis (X-CONTACT 356; JAWON MEDICAL Co. Ltd., Republic of Korea); after standardized procedures.

Results: Average age, weight and body mass index for the subjects were 28.40±7.98 years, 82.49±6.87 (kg) and 32.62±2.75 kg/m², respectively. The mean of body fat percentage and fat mass were 39.97±2.39 (%) and 33.06±4.19 (kg), respectively.

Discussion: The mean of body fat percentage was high in comparison to cutoff points among the studied obese women (p<0.001). Physical activity is generally recommended for reduction of fat mass. Dietary restriction combined with exercise represents an effective strategy to promote weight loss and reduce fat mass in obese individuals. On the other hand, inclusion of a physical activity program is important to prevent a decrease in fat-free mass, improve dietary compliance and eventually maintain long-term weight control.

Conclusion: Based on the results and the American College of Sports Medicine Position Statement guidelines, it best to recommend doing between 225–420 minutes per week of moderate-intensity physical activity for effective weight loss among inactive obese women with dietary restriction.

Keywords: Obese women, Percent body fat, Fat Mass, Physical activity
REVIEW OF RESEARCH ON THE EFFECTIVENSS OF SPORTS ACTIVITIES, ESPECIALLY BALL GAMES, IN PROMOTING THE SOCIAL SKILLS OF CHILDREN WITH AUTISM SPECTRUM DYSFUNCTION

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Introduction: Autism disorder is a class of neurodegenerative disorders which affects a variety of aspects of the daily activities of children and with symptoms such as forms of social communication, social interactions, sensory –motor functions, and cognitive functions. There are many interventions in this area one of these interventions is the use of occupational therapy which includes playing the game with the ball. Considering that this method improves the motor and social skills of children with Autism spectrum dysfunction, we decided to review the research in this field and have been effective in cognitive-motor therapy in these children.

Methods and materials: Initially through the base Mush words related to the effectiveness of sports activities, especially ball games, in promoting the social skills of children with Autism spectrum dysfunction which have been used in scientific articles using these keywords, searches were made in published texts from 2005 to 2018 at Google Scholar, Scopus, PubMed sites. Considering entry and exit criteria, 45 articles were selected and reviewed.

Findings: The findings of this study can be categorized in different groups; because all these studies were conducted in different areas; One of the findings is the impact of sports activities, especially ball game, can contribute to the development of diverse skills; These skills include eye and hand coordination, vision tacking, object manipulation body total coordination, participation, attention, speed of action, motor control and rhythm and timing, interaction with others and communication.

Conclusion: Based on the results found on the impact of ports activities, especially ball game. Between 2005 and 2018 various studies examined the impact of this treatment on improving and promoting the social skills of children with Autism spectrum disorder. Overall, it can be argued that all studies show a positive effect of sport activity on children with Autism disorder.

Key Word: Autism, sport activities, social skills, work with balls, motor skill, relationship
The effect of eight weeks selected balanced exercise on static and dynamic balance in children with attention deficit hyper activity disorder

Mohsen Barghamadi

Introduction: Evaluated the efficacy of balance exercise in reducing hyperactive behavior and enhancing academic performance in hyperactive boys whose lack of academic progress was attributed to hyperactivity and general distractibility are important. The purpose of this quasi experimental pretest-posttest study was the effect of eight weeks balanced selected exercise on static and dynamic balance in hyperactive elementary boy students.

Materials & Methods: The participant consisted of 24 elementary boy students of third and fourth grades. They were identified by parent's and teacher's questionnaires. Participant was randomly assigned to one of two groups. And they divided to two equal groups: experimental and control. The experimental group has done for 8 weeks, 3 times a week. And control group only did daily works. The static and dynamic balance was measured by stork test and heel_to_toe in a straight line. Shapiro-Wilk test was used for normality. Paired sample t-test for within groups and independent t-test for between groups comparison were used to analyse the hypotheses (P≤0.05).

Findings: the result showed that, there was a significant difference in static (P=0.009) and dynamic (P<0.0001) balance between experimental and control groups. The eight weeks selected balance exercise effected on static and dynamic balance among children with attention deficit hyper activity disorder.

Discussion & Conclusion: According to result suggest to coaches to use the selected balanced exercise for improving the static and dynamic balance of children with attention deficit hyper activity disorder.

Key words: Selected balanced exercise, static balance, dynamic balance, children with attention deficit hyper activity disorder

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Effect of lateral wedge on physiological and biomechanical variables during running: A review

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Abstract

Introduction: Knee varus is prevalence malalignment in the lower limbs. Because of the effects of knee varus on progression of medial compartment osteoarthritis, the use of lateral wedge to decrease the injury rate constitutes a seemingly logical conservative treatment. Studies on the use of lateral wedges include conservative management of medial knee loads and are widely quoted. This review manuscript was therefore undertaken to evaluate all available literature to determine whether evidence exists to support their use.

Methods: Studies were in initially sought in English languages from the Google Scholar, MEDLINE, EMBASE, CINAHL, and PubMed databases. Data extraction was performed by the four authors. Following keywords were used for searching process: Latarl wedge, running, knee varus, foot orthoses, bow leg, knee malalignment, and knee alignment. Ten studies were considered suitable. Finally, a total of 8 studies were placed in the review process.

Results: Overall, the results of this review suggest that, based on the current evidence there are no consensus about biomechanical effects with the use of lateral wedges. Also, there were not any studies that evaluated the effects of lateral wedges on physiological parameters such as running economy cost. Furthermore, there were not any study that evaluate the effects of different slopes of lateral wedges on physiological parameters.

KeyWords: Lateral wedge, Running, Physiological variables
PHYSIOLOGICAL RESPONSES TO CROSSFIT WORKOUTS

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ABSTRACT

BACKGROUND & AIMS: Cross fit exercise has been very popular in recent years. It is a high intensity interval training model that includes many functional movements. The cross fit programming philosophy is called workouts of the day (WOD). The aim of the WOD is to complete the exercise as fast as possible and high intensity session. Cross fit workouts are usually high intensity strength exercise. METHODS: In this review study which was conducted in 2019 based on articles in the databases including Google scholar, Science direct, Research gate, Pubmed and Wikipedia, a total of 10 papers has been evaluated. RESULTS: The Results of these articles indicated that regular exercise program leads to improvement in physiological parameters such as strength, aerobic capacity, cardiovascular system etc. CONCLUSION: Cross fit is a relatively new and popular form of high-intensity exercise training. Base on some findings cross fit workouts are method that improve overall body’s endurance and strength, rather than developing a certain motor skill of the body.

Keywords: cross fit, high intensity interval training, physiological responses, WOD
Mental training improved running performance in novice runner

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Introduction: There are different types of exercise to improve running performance. One of the low cost training protocols is mental training. The aim of this study was to evaluate the effect of physical, mental, and combined training programs on running performance and lower limb muscular power in novice runners.

Methods: 38 male novice runners (control group=8, Mental training group: 10, Physical training group=10, Combined training group=10) with age range between volunteered to participate in this study. 1500 m running time records and lower limb muscular power were assessed before and after training programs. MANOVA test was used for statistical analysis. Alpha level was set at 0.05.

Results: Our results demonstrated significantly lower 1500 m running time in mental training group than that in the control group (P=0.002). Furthermore, lower limb muscular power in the combined training group was greater than that in the control group (P=0.029). There was not any other significant difference between groups in other dependent variables (P>0.05).

Conclusion: Overall, mental training could be used to improve running time period. Moreover, combined mental and physical training may be beneficial in improvement of lower limb muscular power.

Keywords: Mental training, Physical training, Combined training, Muscular power
Comparison Mental Toughness and Inhibition of Response in Bodybuilders with and without Use Anabolic-Androgenic Steroids

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Abstract
The purpose of this study was to compare Mental toughness and Inhibition of Response in bodybuilders with and without the use of anabolic-androgenic steroids. The present study was a descriptive and casual-comparative. The statistical population of the study consisted of all male bodybuilders of Rasht in 2019. A sample of 120 (60 natural bodybuilders and 60 steroid bodybuilders) was selected purposefully and then data were collected using Sheard et all Mental toughness questionnaire (2009) and Stroop color-word test (1953). Data were analyzed using multivariate analysis of variance. The results show that there is a significant difference in Mental toughness and Inhibition of Response bodybuilders' integrity with and without anabolic-androgenic steroids (p <0.05). Based on this, it was found that steroid bodybuilders showed less Mental toughness and Inhibition of Response compared to natural bodybuilders (p <0.05). According to these results, by implementing programs and interventions, it can increase the Mental toughness and Inhibition of Response in steroid bodybuilders.

Keywords: Anabolic-androgenic steroids, Mental toughness, Inhibition of Response, Bodybuilders

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Comparison The Dark Trait of Personality and Sense of Coherence in Bodybuilders with and without Use Anabolic-Androgenic Steroids

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Abstract

The purpose of this study was to compare the dark trait of personality and the sense of coherence in bodybuilders with and without the use of anabolic-androgenic steroids. The present study was a descriptive and casual-comparative. The statistical population of the study consisted of all male bodybuilders of Rasht in 2019. A sample of 140 (70 natural bodybuilders and 70 steroid bodybuilders) was selected purposefully and then data were collected using jonason and webster personality dark trait questionnaire (2010) and antonovsky's sense of coherence (1993). Data were analyzed using multivariate analysis of variance. The results show that there is a significant difference in the dark trait of personality and the sense of coherence bodybuilders' integrity with and without anabolic-androgenic steroids (p <0.01). Based on this, it was found that steroid bodybuilders showed less sense of coherence and Narcissism, Machiavelli’s and more Psychopathy compared to natural bodybuilders (p <0.05). According to these results, by implementing programs and interventions, it can reduce the dark trait of personality and increase the sense of coherence in steroid bodybuilders.

Keywords: Anabolic-androgenic steroids, Bodybuilders, Sense of coherence, Dark trait of personality

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Effect of walking and running on sand on physiological and biomechanical variables: A review

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Abstract

Introduction: Walking or running in the real-world involves different perturbations, negotiating challenging or uneven surfaces, including sand. This can be challenging for different individuals due to perturbation in motor control of the body that affecting the lower extremities and trunk biomechanics. The aim of the present study was to assess the effect of walking and running on sand on physiological and biomechanical variables.

Methods: Studies were in initially sought in English languages from the Google Scholar, MEDLINE, EMBASE, CINAHL, and PubMed databases. Data extraction was performed by the four authors. Following keywords were used for searching process: sand, body mechanics, walking, running, and physiological variables. Fifteen studies were considered suitable. Finally, a total of 10 studies were placed in the review process.

Results: Overall, walking on sand could increase lower limb flexion during swing, and returned to their gait pattern to near baseline levels. Furthermore, walking on sand was showed that could increase the amount of burned calories in healthy subjects. Further work is required to determine whether this mode of walking has potential to act as a gait retraining strategy improves all physiological and biomechanical parameters during walking and running.

KeyWords: Sand, Running, Physiological variables
Check the adjustment of the thrill and the dimensions of the control of the students thought the athlete

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Abstract

The aim of the present research the relationship between excitement and thought control dimensions set up in the athlete's people. Research methodology the study was descriptive of the type of analysis. All the athletes present statistical Society University of Mohaghegh Ardabili. The statistical community of 100 people, as an example of the desired method of random sampling. Data set questionnaire study in the excitement of grasses and dimensions of thought control wells and Davis were used. For the analysis of data from statistical software SPSS for Pearson's correlation test research hypotheses reviewed. Pearson correlation test results showed that between the set features excitement and thought control in dimensions between the students of the athlete in terms of the positive statistical relationship (r = 673/0) was significant (P < 0.05).

Keywords: thrill, dimensions, thought, students, athlete
Reviews for communicating in athletes prone to obesity and lean athletes

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Abstract

The aim of the research was to investigate the passion to communicate in athletes prone to obesity and lean athletes. Research methodology the study was descriptive-analytical type. All the athletes present statistical Society University of Mohaghegh Ardabil. The statistical community of 100 people, as an example of the desired method of random sampling. Data in the present study a questionnaire, a passion for communicating the McCracky were used. For the analysis of data from statistical software SPSS and t test to check hypotheses for the two independent groups. The test results showed that between athletes prone to obesity and lean the difference was significant (P < 0.05). As well as a passion for lean athletes in between most of the athletes are prone to obesity.

Keywords: lean, prone, obesity, students, athlete
CRIMINALIZATION OF USING BANNED DRUGS (DOPING) IN SPORTS; PRINCIPLES AND CHALLENGES

Reza Mahfouzi

Sports law is one of the major practices of law, which deals with the legal examination of sports accidents. Since sports is an essential element of a healthy society, paying attention to this issue and awareness of the problems arising in it is essential for the country's judicial system. Doping means the use of narcotic drugs to gain extraordinary energy in an unauthorized manner. The WADA is the authority that specializes in fighting against doping. The first global anti-doping law was adopted by this agency in 2003, entered into force in 2004 and amended in 2009. A new anti-doping law was adopted in 2015, which reformed in 2017. Penalties set by anti-doping law for athletes who use prohibited drugs is exclusion from all results including medals, privileges, awards and ineligibility for participation in competitions for 4 years if the athlete has taken the drug deliberately with an intent to cheat. It is for two years is s/he has taken it unintentionally and a lifetime deprivation for the second time. The question of many of the country's legislators is whether this universal warranty with disciplinary nature is enough or the criminal penalties must also be used to combat doping. In answering to this question, different countries have come up with two completely different solutions. Countries like Italy, Austria and Germany have called for doping criminalization to fight against it. However, some countries, such as Britain, do not consider doping criminalization as a suitable action against it and recommend more cooperation with national doping organizations and youth training programs instead. They argue that the four-year guarantee deprivation of sports activities is deterrent enough and can end the athlete's athletic life; therefore, imprisonment or cash penalty does not bring more intimidation for the athlete. The present theoretical research is descriptive-analytical and the data collection is through the library study. Accordingly, the arguments of proponents and of doping criminalization are investigated. Given the principle of legal harm and morality, it seems that doping criminalization is justified the absence of which is felt in the legal system of Iran.

Keywords: Criminalization, Doping, Sports law, Principle of harm, Legal morality, Sports
The effects of strength training protocol on lower limb muscular strength in female and male soccer players

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Introduction: Strength training is an essential part of training programs in soccer players. Males and females demonstrated different biomechanical characteristics. The aim of the present study was to examine the effects of strength training protocol on lower limb muscular strength in both female and male soccer players.

Methods: 10 male and 10 female soccer players with age range between 19-23 years were volunteered to participate in this study. During both pre and post-test, the one-repeated maximum (1-RM) strength during squat, leg press, and knee flexion and extension tests were assessed. Training protocol in both groups includes lower limb strength training for four weeks (Three sessions per week for about 40 minutes). Two way ANOVA with repeated measure test was used for statistical analysis. Alpha level was set at 0.05.

Results: Our results revealed significant Time by Group interaction for knee extension strength (P=0.024). Also, the effect of Time factor for knee extension strength was significant (P<0.001). Our results revealed no significant differences between groups for both knee extension and flexion strength (P>0.05).

Conclusion: Overall, there were not any significant differences between males and females in quadriceps and hamstring muscular strength after training protocol.

Keywords: Strength training, Soccer players, Male, Female
Survey of physical activity on the sleep quality of young male students of Mohaghegh Ardabili University

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Abstract

Introduction: Sleeping hours of sleep control cause a weakening of the immune system and lowering the secretion of body growth hormones, hypertension and exacerbation of cardiovascular risks, reducing the ability of individuals to succeed, and getting unemployed in the student corps due to pressures Curriculum, family and social studies have been dramatically estimated. Therefore, researchers looked at the quality of sleep as a major factor in increasing the overall health and community health. Sleep is one of the most important elements in boarding cycles. Sleep disorder is one of the most important factors in reducing the efficiency of daily activities of individuals. Physical activity is one of the factors affecting the quality of sleep and health, and, on the other hand, due to the conditions in student dormitories and the lack of suitable conditions, some disorders in the students' sleep are created. The purpose of this study was to investigate Survey of physical activity on the sleep quality of male students of Mohaghegh Ardebil University.

Methods: This research was descriptive and field research. The statistical sample included 30 male dormitory students at Mohaghegh Ardebil University. Sampling was done randomly, Pittsburgh sleep quality standard quality questionnaire and Beck's physical activity level were measured. For statistical analysis, SPSS software 16 and independent t-test and Chi-square were used.

Results: Regarding the statistical results obtained from the data analysis, active students had a better and better quality sleep than non-active students in the dormitory environment. There was a direct correlation between poor quality of life and students' behavioral, physical and psychological functioning. It seems that there is a direct and significant relationship between increasing physical activity and improving the quality of sleep in Ardebil scholars' dormitory dormitories.
Conclusion: Undesirable sleep quality and fatigue mechanism among young male students with less physical activity have been increasing.

Key words: Physical activity, students, sleep quality, Questionnaire, sleep disturbance

Correlation Between The Physical Activity On Sleep Quality And Control Anger In Young Students And Firefighters In Ardebil

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Abstract

Introduction: Anger and aggression are the universe of excitement that is seen in all cultures and is one of the most common behavioral problems that has caused the discomfort and distress of others. Since sleep disorders are among the world's newest known problems among workers who are always exposed to stress and physical and psychological pressure, finding a solution to this problem is essential. Regarding the sensitivity of job performance among the two groups, psychological focus increases the level of work progression, and control of anger in these individuals leads to better environmental conditions and coping with stress and negative emotions in society. On the other hand, with the modernization of life in the contemporaneously, the quality of sleep has been affected, which has sometimes led to an increase in aggressive behavior and anger. The purpose of this study was to investigate the physical activity on sleep quality and control anger in young students and firefighters in Ardebil.

Methods: This research was descriptive-analytical and field. The statistical sample of this study included 30 students in University of Mohaghegh Ardebil and 30 firefighters in Ardabil city. The participants were randomly selected and using standard questionnaire like control anger of Spielberger's, physical activity of Bak and sleep quality of Pittsburgh were used. For analysis the statistical of the results were used from SPSS 16 software and Pearson analysis.
Results: The results of the statistical analysis showed that in every two sample of the subjects with more physical activity and sleep quality was more appropriate and somewhat more successful in controlling anger. There is a relatively modest relation between increasing physical activity and anger control among students and firefighters.

Conclusion: It seems that physical activity and exercise in improving sleep quality and increasing control anger were effective. There is a relatively small and significant relationship between physical activity and anger control in relation to sleep quality.

Key words: Control anger, sleep quality, male students, firefighters, Pittsburgh

Kinematic evaluation of the taping and corrective exercises effect on genu Valgum during gait

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Abstract

Introduction: Genu valgum is one of the most common knee joint deformities in children and adults, and these deformations may cause changes in the function of the knee muscles, due to the mechanical axis change of the lower limb.

Purpose: The purpose of this study was the kinematic evaluation of the effect of tapping and corrective movements on the Genu valgum during gait.
Materials and research methods: This research is a practical and quasi experimental type that was done pre-test and post-test design. The statistical population consisted of all male students with age range (18-25) at Ardebil University, who had genu valgum. The statistical sample consisted of 30 students who were placed in three groups randomly; taping, corrective exercise and control groups. And to assess the knee deformity of individuals, the distance between two medial malleolus and Q angle were measured by caliper and goniometer, respectively. In the taping group, vastus medialis and patella was taped by mechanical correction for eight week. Corrective exercises group did corrective exercises by stretching exercises and theraband. Kinematic assessment of knee joint in heel contact, midstance and toe off was evaluated by the motion analysis device in two steps, before and after the intervention. Data were analyzed by Spss software version 21 and t-test was used to determine the intra-group mean difference and also the mean difference between groups was determined by using one-way ANOVA and follow-up LSD test.

Results: The results showed that after applying two methods, taping and corrective exercises for 4 week, they had significant effects on the Q angle, angular velocity and knee angle distance between the two medial malleolus.

Conclusion: Both corrective exercises and taping treatment methods were effective in improving Genu valgum. But corrective exercises were a better method than taping to reduce the genu valgum symptoms. Corrective exercises are a non-aggressive, non-complicate and cheap method to treat Genu valgum.

Keywords: Corrective exercises, taping, Genu valgum, kinematic, medial malleolus, Q angle
THE RESPONSE OF NITRIC OXIDE TO HIGH INTENSITY INTERVAL EXERCISE AFTER ACUTE L-CITRULLINE SUPPLEMENTATION OF MALE ATHLETES

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ABSTRACT

Background and Aim: During high intensity interval exercise (HIIE), blood flow and oxygen consumption increase in skeletal muscle, also L-citrulline may improve vascular function through increased nitric oxide synthesis. The present investigation was conducted to determine the effect of acute L-citrulline supplementation on the response of nitric oxide in high intensity interval exercise of male athletes.

Material and Method: A double-blind randomized placebo-controlled, crossover design was employed on nine healthy male athletes (mean age 21.41±1.13 years, weight 79.50±9.35 kg, body mass index 23.66±2.25 kg/m², body fat percentage 10.67±1.52 and maximal oxygen consumption 50.95±5.36 ml/kg/min). Randomly assigned into 2 group of L-citrulline supplementation (12gram) and placebo (12 gram maltodextrin). Before exercise; first blood samples were taken from brachial vein. After that, subjects performed the HIIE protocol (Each round consisted of 30 seconds of exercise followed by 30 seconds of rest. Male subjects used a 16-kg KB, The KB swings were performed at a rate of 1-second eccentric/1-second concentric phases [15 swings per round]); Then other blood samples were taken at post 3, 10 and 30 minute after HIIE protocol.

Result: the result showed activity of nitric oxide, there was no significant difference between time and trial factors (P=0.32 in time factor and P=0.65 in trial factor).

Conclusion: According to the result of this study, acute L-citrulline supplementation cannot impact on response nitric oxide to high intensity interval exercise of male athletes.

Key words: L-citrulline, high intensity interval exercise, nitric oxide, athlete

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EVALUATION OF MOTOR ABILITY OF BOY ADOLESCENT WEIGHTLIFTERS IN ARDABIL CITY

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Abstract

Introduction: The prerequisite for achieving successful performance in any field of sport is the ability to play a specific sport. Understanding the above characteristics in each sport is one of the important determinants of the athlete performance. The aim of the present study was to evaluate the motor ability of boy adolescent weightlifters in Ardabil city.

Methodology: In this study, 26 boy adolescent weightlifters in ardabi city were with mean age (16.46 ± 5.24) year, height (174.65±5.81) cm, weight (97.38±16.06) kg, with a weight training experience of 2-4 years. To measure an aerobic power (3-step jump test, head throwing), muscular endurance (dormancy test), flexibility (forward bending test, shoulder lift), speed (30 meter test), upper strength and the bottom of the trunk (bench press test, scott leg test), the strength of the fingers of the muscles (hand dynamometer) were used. Descriptive statistics were used to calculate deviations of dependent variables.

Results: The mean anaerobic power of upper extremity muscles (68.56±15.9) and lower muscles of trunk (197.92±24.22), muscle flexion (17.76±5.9), shoulder flexion (51.76±9.2), muscular endurance (40.80±10.32), speed (7.78±0.55), upper strength (112.26±15.96) and low trunk strength (177.92±52.87), right hand muscle strength (56.55±13.55) and left muscle strength (52.42±13.60).

Discussion and conclusion: In the field of weightlifting, athletes must have the ability to move, including power, anaerobic power, endurance, speed, flexibility. Among these abilities, the power and explosive power have the prime priority in identifying weight of the weightlifters.

Key words: bioengineering ability, an aerobic power, flexibility, power muscular endurance, weightlifting
Effect of 8-Weeks interval power training on Resting Metabolism in Inactive Male Students

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Abstract

It is well known that obesity has increased worldwide and obesity is a risk factor for several diseases. Inactivity and facility of day-to-day operations are one of the important reasons for the loss of body weight and, in particular, the prevalence of obesity among people in different societies. In the past decade, with the increase in obesity in children, adolescents and adults, attention has been paid to identifying the causes of increased rest metabolism (RMR) and weight loss. Information on Resting Metabolism (RMR) is important for defining a proper nutrition plan, determining a caloric needs, energy balance and weight control. The purpose of this study was to investigate the effect of eight weeks of interval power training on resting metabolism in inactive students. 22 inactive Male students were randomly divided into two groups: interval power training program (21 ± 1.19 years old, n=11) and control (21 ± 11.27 years old, n=11). Interval power training program was performed (3 sessions per week, 4 moves including bench press, high pull, rebound jump and Wingate test, 3 – 5 sets with 30, 40, 60, and 70% 1RM,) for 8 weeks. Before and after the exercise program, the amount of rest metabolism, Respiratory exchange rate and body fat percentage were measured. For statistical analysis, paired t-test was used to evaluate the intra-group differences. Results showed that the amount of resting metabolism increased after 8 weeks of interval power training (from 1841.4 ± 409.7 to 1960 ± 384.4 kcal / day), but this increase was not significant (p>0.05). And there was no significant change in the RER (p>0.05). However, the Subjects’ percentage of fat after 8 weeks of interval power training decreased significantly (from 4.33 ± 12.88 to 4.34 ± 11.78%) (P ≤ 0.05). Therefore, it seems interval power training induces an improvement in body composition and subsequently leads to increase in rest metabolism that results in body weight loss.

Keywords: Interval power training, Rest metabolism, Respiratory exchange ratio, Wingate test

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Effect of 8 weeks resistance training combined with pomegranate extract ingestion on maximum oxygen consumption in Inactive Male Students

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Abstract

The popularity of food supplements and nutrients such as arginine and citrulline, which increase nitric oxide production and are commonly used before exercise, have increased dramatically over the past decade. Nitric oxide regulates important physiological functions and is recognized as an important factor in the relaxation of endothelial vessels during exercise. It is an undeniable fact that resistance training (RT) is a potent stimulus for muscle hypertrophy and strength gain, but it is less understood whether RT can increase maximal aerobic capacity (VO2max). Therefore, the purpose of this study was to investigate the effect of eight weeks of resistance training combined with pomegranate extract ingestion on maximum oxygen consumption in inactive male students. 32 non-active male students were randomly assigned to three groups: resistance training program (20.7 ± 1.9 years old, n=11), resistance training program combined with pomegranate extract ingestion (21.2 ± 1 year, n=11) and control (20.8 ± 1.3 years, n=10) groups. Resistance training programs were performed for 8 weeks (3 sessions per week, 4 movements, 3 sets with 60-70% 1 RM), and resistance training combined with pomegranate extract ingestion group consumed 100 ml pomegranate extract 30 min before exercise. Subjects’ maximum oxygen consumption was measured by Gas Analyzer before and after training period. For statistical analysis, the paired t-test and ANOVA tests were used for analyzing intra-group and between-groups differences respectively. The results showed that maximum oxygen consumed was significantly increased (from 39.94 ±3.64 to 43.36 ± 3.70 ml/ Kg / min) in the resistance training + pomegranate extract ingestion group (p≤0.05), but a significant decrease (from 45.66 ±4.18 to 42.86 ±3.83 ml / kg /min) at maximum oxygen Consumption was observed after exercise program in resistance training group (P ≤ 0.05). Therefore, it seems that pomegranate extract ingestion increases maximum oxygen consumption by increased blood flow and the subsequent increase in oxygen supply to the muscles and compensate the negative effect of resistance training on VO2 max.

Key words: resistance training, pomegranate extract, maximum oxygen consumption

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Quantitation Of reduction potential Of Thiol/Disulfide Form Of Gluthathione By High-Performance Liquid Chromatography in in men with different physical training status

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Abstract

Introduction: The reduction potentials (Eh) for the redox couples such as reduced glutathione to oxidized glutathione (GSH/GSSG) within cell are useful indicators of health. This article compares in vivo Eh values for GSH/GSSG in red blood cells (RBC) in subjects with different physical training status.

Methodology: Thirty male subjects participated in this cross-sectional study and were assigned as professional athletes (PA), recreational athletes (RA) and nonathletes (NA) groups. The hematocrit and RBC’s values were detected. The level of reduced glutathione and oxidized glutathione in red blood cells (RBCs) were measured with a sensitive method by High-Performance Liquid Chromatography with Fluorescence Detection, and then Eh for GSH/GSSG was calculated by nernest equation.

Results: There was no significant difference in hematocrit and RBC’s values between groups. The result showed that Eh for GSH/GSSG were -284048±3.53; -29606±3.25; -29209±1.17 in PA, RA and NA groups; respectively. Then, the most negative reduction potential was recorded in RA and the lowest negative one in PA group. Only, the difference between Eh for GSH/GSSG in RA and PA group was significant (F= 4.384, p= 0.021).

Discussion: Generally, in all redox systems, the more reduced (more negative) redox are healthy, while more oxidized (more positive) form predispose individuals to aging and diseases. This study showed that physical training status of individuals determines the reduction potentials for GSH/GSSG RBCs. Recreational athletes had the most negative reduction potentials and consequently the most reducing and healthy environment, but professional athletes had the lowest negative environment most oxidizing one and consequently the most possibilities for development of related diseases. This condition may be due to accelerated production of free radicals cause a permanent shift in redox balance towards a more oxidized environment following physical training with high intensity and volume.

Conclusion: This study suggests that group of individual with moderate level of physical activity might be healthier in your RBC environment than individuals with professional physical activity

Key Word: Redox state, Glutathione, reduction potentials, Exercise, HPLC
The impact of permanent specialist forces on less developed sport development

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Abstract

The crucial role of the skilled and efficient force in economic, social, cultural and community life is crucial. All managerial activities, including sports development, have important role in the specialist team. No efficient and dynamic people can achieve such goals. Most of the less developed areas of sport in the country face the problem of the lack of skilled and efficient training in education, training and sports. Human being, as the most important capital of any organization, is the most valuable factor in production and the main source of creating competitive advantage and creating key capabilities in less developed areas. Human being is the agent of development in every region, and the realization of the goals of development of sport depends to a considerable extent on how the management and presence of this wealth and vital resource depend. The results of the research indicate that the development of physical education and sports as a basis for providing healthy and healthy human resources is part of the national development plans.

Key words: Specialist forces, regions, development, sports.
THE EFFECT OF GREEN TEA SUPPLEMENT ON BODY MASS INDEX AND LIPID PROFILE AFTER EIGHT WEEKS AEROBIC EXERCISE IN OBESE WOMEN

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Abstract
Introduction: Obesity has become one of the biggest health challenges in the worldwild. A conservative intervention to control obesity is diet and exercise. The purpose of the study was to investigate the effect of green tea supplement on body mass index and lipid profile after eight weeks aerobic exercise in obese women.

Methods: 30 inactive obese women based on body mass index (BMI) were randomly divided into 3 groups. They were aerobic exercise with green tea supplement group (Experimental 1, age:30.77±5.16, BMI:35.69±2.28), aerobic exercise group (Experimental 2, age:31.62±4.56, BMI:36.18±2.25) and control group (age: 30.37±7.17, BMI:34.65±3.02). The aerobic exercise protocol (eight weeks and three sessions per week) was performed for both experimental groups. Green tea supplement (500 mg Green Tea Capsule) was performed for experimental 1. The variables of weight, BMI, triglyceride (lipid profile index) were measured before and after two months. Paired t-tests, covariance analysis (ANCOVA) and bonferroni post hoc test was used for data analysis (P <0.05).

Results: Eight weeks of aerobic exercise with and without green tea supplement led to significant decrease in body weight, BMI and triglyceride than control group (P <0.05). The effect of aerobic exercise with green tea supplement was more than alone aerobic exercise.

Discussions: Aerobic exercise with green tea supplement had a more significant effect than alone aerobic exercise on the triglyceride in obese women. The effect of aerobic exercise on the improvement of lipid profile and especially serum triglyceride levels is due to increased lipoprotein lipase activity by increasing epinephrine. Green tea polyphenols can inhibit the activity of catechol - methyltransferase and thus affect on the body composition. Therefore, the catechins in green tea stimulate fatty lipolysis due to increased sympathetic activity; reduce fat mass, especially visceral fat, in obese women.

Conclusion: As a whole, the use of green tea supplement with aerobic exercise has more and faster effects on the reduction of body fat in obese women. It is recommended to use supplements such as green tea when doing aerobic exercise for weight loss.

Keywords: aerobic exercise, green tea supplement, lipid profile, obese women, body mass index
A response to a continuous activity session on the level of serum adiponectin and insulin resistance in inactive women with type 2 diabetes

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Introduction: Sport activities have a significant impact on the factors affecting type 2 diabetes. But what’s the effect of a single-session continuous activity, is not clear. The purpose of this study was to evaluate the response of a continuous activity session on the level of adiponectin and insulin resistance in women with type 2 diabetes.

Methodology: 18 non-active women were randomly selected with a mean age of 52 ± 5.1 years, height 162.6 cm, weight 73 kg ± 6.6 kg, BMI without 28 ± 2 kg / m2. Were divided into two groups of continuous activity and control. Continuing activity practice protocol was a treadmill running session with 65% maximum heart rate for 45 minutes. Serum adiponectin, insulin, glucose and insulin resistance were measured immediately after the test. Independent t-test was used to analyze the data.

Results: The results of one session showed a significant decrease in glucose and insulin resistance. Serum levels of adiponectin were also significantly increased in the exercise group compared to the control group (p≥0.05).

Discussion: Given that serum levels of adiponectin in diabetic patients are usually lower than healthy subjects. In the present study, an increase in serum adiponectin level was observed with continuous exercise of one session. This type of exercise can be recommended in people with type 2 diabetes.

Conclusion : Reducing glucose and insulin resistance and increasing serum adiponectin can improve type 2 diabetes.

Keywords: Continuous Exercise, Adiponectin, Insulin Resistance, Body Mass Index, Inactive Women, Type 2 Diabetes.
Effect of Acute Date Seed Powder Supplementation on Performance of 200 and 400-meter Sprint in Healthy Young Men

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Abstract

Introduction: Chemical supplementation is effective in improving sport performance, but its side effects are not ignorable. So, researchers tend to use herbal supplements because of their lesser side effects. The aim of this study was to determine the effect of acute date seed powder supplementation on performance of 200 and 400-meter sprint in young healthy men.

Materials and methods: 20 young male students (age: 21±2.62 years, height: 177.38±6.23 cm, weight: 70.72±12.56 kg) volunteered to participate in this study. After signing a written consent, their performance was measured in pre-test in order to divide them into two homogeneous placebo (PC) and experimental (E) groups randomly. After a week, they consumed date seed powder in amount of 400 mg per kg of their body weight in 200 ml of water 30 minutes before the test. Like pre-test, they sprinted 200 meters and after 10 minutes of rest, they sprinted 400 meters. The performance was measured by stopwatch in accuracy of 0.001 of a second. For statistical analysis, paired samples T-test was used in the significance level of 0.05 in SPSS version 24.

Results: Findings show that there were significant improvements in 200-meter sprint ($t_7=4.347$, $P=0.005$; $t_9=-3.511$, $P=0.008$, respectively in E and PC groups) and 400-meter sprint ($t_9=3.405$, $P=0.027$; $t_8=-0.482$, $P=0.643$, respectively in E and PC groups), in effect of consumption of date seed powder compared to PC group.

Conclusion: It seems that acute consumption of date seed powder as herbal supplement can improve sprinting performance and maybe improve lactate threshold endurance significantly. In respect to high caffeine-like properties in date seed powder, affecting adenosine A1 receptors, serotonin and dopamine levels of hippocampus and even increasing myofibrils sensitivity to calcium can be possible mechanisms of date seed powder in improving exercise performance. However, for determining underlying mechanisms of the supplement, there is need for further researches.

Keywords: acute supplementation, exercise performance, date seed powder, 200-meter sprint, 400-meter sprint
Designing a novel automatic cryotherapy device

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Introduction: Cryotherapy is a common treatment during occurrences of acute sport injuries. The aim of the present study was to design a new automatic cryotherapy device.

Methods: Our novel automatic cryotherapy device was made from two TEC sensors. These sensors along with water source and water pump are able to create warm or cold status. The automatic cryotherapy devise has also a plate that will be placed on the injury part (muscular portion) of the body. The temperature of the plate will be demonstrated on a screen. Moreover, the examiner will be able to set the temperature (-10 °c; 50 °c) of the device. All parts of this device were produced by researchers.

Conclusion: Overall, this novel cryotherapy device is better than traditional cryotherapy methods such as using ice bags or ice sprays. The traditional cryotherapy methods did not provide all temperatures in different situations. The temperature of this device is completely changeable. This device has very light weight and therefore is portable.

Keywords: Cryotherapy, Novel device, Injury
The association between daily nutrition and soccer performance

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Introduction: Good nutrition is an important factor on improvement of daily and sport performance. The purpose of this study was to evaluate the relationship between daily nutrition and soccer performance in both male and female soccer players.

Methods: Ten male and ten female soccer players with age range between 19-23 years were volunteered to participate in the present study. Soccer performance was evaluated during 10 sessions. A researcher made questionnaire was used to record the nutrition status during 30 days (before of each performance assessing session). Independent sample t-test was used for statistical analysis. Pearson correlation coefficient was also used to calculate the relationship between nutrition status and performance scores. Alpha level was set at p<0.05.

Results: Our finding demonstrated a significant difference between nutrition status between both male and female soccer players (p<0.05). Moreover, a significant correlation were found between soccer performance and nutrition status (r=0.62, p<0.05). Furthermore, there was not any significant correlation between soccer performance and nutrition status in female soccer players (P>0.05).

Conclusion: Generally, a moderate relationship was found between soccer performance and nutrition statuses. However, further study with greater samples is needed to affirm these results.

Keywords: Nutrition, Soccer performance, Correlation
Investigating the effect of 3 weeks special resistance training on muscular strength during chest press

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Abstract

Introduction: Strength training is one of the most important parts of sport activities. The purpose of this study was to investigate the effect of 3 weeks (6 sessions) special resistance training on muscular strength during chest press.

Methods: In this quasi-experimental study, 24 healthy body building males were divided into experimental and control groups, randomly. Participants demographic characteristics in the control group include: mean age 25 ± 22 years, mass 65.41 ± 3.06 kg. Moreover, participant’s demographic characteristics in the experimental group include: mean age of 23.25 ± 0.62 years, mass 67.91 ± 2.90 kg. During both pre and post-test the values of 10 repeated maximum were recorded during bench press. The training protocols were as follows: Session 1 includes 10 sets with 6 repetitions (with weight equal 10 repeated maximum). Session 2 include 10 sets with 5 repetitions (with weight equal 10 repeated maximum+5 kg). Session 3 include 10 sets with 4 repetitions (with weight equal 10 repeated maximum+10 kg). Session 4 include 10 sets with 6 repetitions (with weight equal 10 repeated maximum+5 kg). Session 5 include 10 sets with 5 repetitions (with weight equal 10 repeated maximum+10 kg). Session 6 include 10 sets with 4 repetitions (with weight equal 10 repeated maximum+15 kg). In the present study, the control group has been done their normal daily training protocols. The rest between the first and second sets were 30 seconds. After that, the rest between other sets were added about 15 seconds for each extra set. Paired sample t-test was used for statistical analysis. Alpha level was set at 0.05.

Results: Results demonstrate significant increase in 10 repeated maximum in the experimental group (p=0.003). However, control group did not show any change in the 10 repeated maximum values during post-test compared to the pre-test (p>0.05).

Conclusion: Totally, the designed strength training protocols in the present study increased muscular strength during only 6 sessions. Further study with is warranted about this issue.

Keywords: Chest press, Resistance training, 10 repeated maximum
Effect of Acute Resistance Exercise with and without Blood Flow Restriction on Antioxidant Defense System in Active Females

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Abstract

Background: Resistance training has gained popularity over the last decade. Acute effect of resistance training with and without blood flow restriction on antioxidant defense has not been well considered. Therefore, the aim of the current study was to compare the effect of acute resistance exercise with and without blood flow restriction on antioxidant defense system in active females.

Methods: 30 active females aged 23-30 years were randomly divided into three groups: traditional resistance exercise (without blood flow restriction, intensity 80% 1RM), resistance exercise with blood flow restriction (intensity 30% 1RM) and control group. Training started with one set of 30 reps and ended with two sets repeated until exhaustion. Blood samples for measuring changes of antioxidant defense system took place prior to and immediately after the exercise training. For analyzing within-group and between-group data ANCOVA test and one way ANOVA was used, respectively.

Results: In within-group comparison, it was observed that total antioxidant capacity in both training groups was significantly increased compare to pretest (P\leq0.05), although it was higher in resistance exercise with blood flow restriction group rather than resistance exercise without blood flow restriction. And in between group comparison, there was a significant difference in total antioxidant capacity between the two training groups compare to the control group (P\leq0.05).

Conclusion: Performing a session of exercise with and without blood flow restriction causes a similar response to the antioxidant defense system of active females.

Keywords: Resistance Exercise, Blood Flow Restriction, Antioxidant Defense System, Females.

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The effect of running activity with anaerobic Threshold intensity on first and five minutes
Recovery Heart Rate return in Inactive Men

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Abstract

Background and Aims: recovery heart rate return known as a cardiac health measurement. The purpose of the present study was to investigate the effect of a 6-month period of running exercise with the intensity of anaerobic threshold on recovery heart rate during the first and fifth minutes of recovery in inactive men.

Methods: For this purpose, 30 inactive men (control group: mean ± SD, 34.11 ± 4.35 years, height, 173.27 ± 7.65 cm, fat percentage, 29.61 ± 5.24; Experimental group: Mean ± SD age, 33.42 ± 6.47 years, height, 172.47 ± 7.86, fat percentage, 27.34 ± 5.75) were selected as the subjects of the study. In the pre-test and post-test period, the heart rate of recovery was measured at the first and fifth minutes of the recovery period after the graded GXT test. Experimental group performed running aerobic exercise on anaerobic threshold for 6 weeks (3 sessions per week). Paired T-test Independent t-test was used to analyze the differences within and between groups, respectively.

Results: Performing exercise for 6 weeks caused a significant reduction in recovery heart rate in the first (control group, pre-test, 155.36 ± 7.47, post-test, 154.42 ± 5.75, experimental group, pre-test was 155.91 ± 8.74, post-test, 148.69 ± 4.68, p=0.04), and fifth minutes (control group, pre-test; 123.21 ± 8.71, post test, 122.46 ± 6.18; experimental group, pre-test; 126.41 ± 6.75, post-test; 119.56 ± 6.84 bpm, p = 0.11); of recovery period in inactive males.

Conclusion: Exercise running with anaerobic threshold improved recovery heart rate return in inactive men.

Key words: Exercise Running, Anaerobic Threshold, Heart Rate, Recovery Period
Effect of an Aerobic Exercise Course with Aerobic Threshold intensity on Recovery Heart Rate return in Inactive Men

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Abstract

Background and Aims: Performing aerobic exercise can improve the health of the heart. The purpose of this study was to investigate the effect of a 6-month period of aerobic exercise with aerobic threshold intensity on recovery heart rate return in inactive men.

Methods: For this purpose, 30 inactive men (control group: mean ± SD, 34.11 ± 4.35 years, height, 173.27 ± 7.65 cm, fat percentage, 29.61 ± 5.24; Experimental group: Mean ± standard deviation of age was 35.71 ± 5.54 years, height, 171.87 ± 6.18 cm, fat percentage, 31.58 ± 4.63) were selected as the subjects. In the pre-test and post-test period, the recovery heart rate was measured at the first and fifth minutes of the recovery period after the graded GXT test. The experimental group performed aerobic exercise for 6 weeks (3 sessions per week). Paired T-test Independent t-test was used to analyze the differences within and between groups, respectively.

Results: Performing aerobic exercise for 6 weeks caused insignificant improvement in recovery heart rate during the first (control group, pre-test, 155.36 ± 7.47, post-test, 154.42 ± 5.75, experimental group, Pre-test, 153.38 ± 6.52, post-test, 149.69 ± 4.68 bpm, p = 0.09), and fifth minutes (control group, pre-test, 123.21 ± 8.71, post test; 122.46 ± 6.18; experimental group, pre-test, 124.56 ± 7.81, post-test, 120.68 ± 5.43 bpm, p = 0.11) of recovery period in inactive men.

Conclusion: Performing aerobic exercise at the aerobic threshold intensity in a 6-week alternative training period cause a small, but not significant, improvement in recovery heart rate return.

Key words: Aerobic Exercise, Aerobic Threshold, Recovery Heart Rate
The effects of cryotherapy with automatic cooling device after fatigue on running free moment in soccer players

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Abstract

Background and purpose: Soccer is one of the most popular sports in the world, where the injury is remarkably widespread. The purpose of this study was to investigate the effects of cryotherapy on a fully automatic cooling device at 11 ° and 8 ° C after fatigue on free moment on soccer players during running.

Methodology: 10 novice soccer players (20-30 years old) were volunteers. Free moment was recorded before and after using of automatic cooling device by Bertec force plate. Repeat measures test was used for statistical analysis. The significance level was set at 0.05.

Results: The findings of this study showed a significant increase in the positive peak free moment component during the running between post-fatigue and cryotherapy with a temperature of 11 ° C (23.43%) (P = 0.043; d= 0.90).

Conclusion: Except for the positive peak of free moment in other components, no significant differences were observed. The results may be due to the short-term use of an automatic cooling device or the use of two temperatures in this study. It is suggested that the effect of long-term use of an automatic cooling device after sports injury should be investigated and the effects of other temperatures should also be studied.

Keywords: Cryotherapy, Free moment, Soccer player
Eight-week Aerobic Training Reduced Oxidative Stress, MAPK Signaling Pathway and the Heart Dimensions in Middle-age Wistar Rats

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Objective: Cardiac hypertrophy which refers to an increase in volume of heart occurs in some physiologic and pathologic conditions such as aging and exercise training respectively. As the workload of the heart increases, its volume increases; a process that controls the body’s hemodynamics. This process when it occurs in healthy people particularly following participation in exercise is called physiological hypertrophy resulting in better left ventricular function and differs from pathological cardiac hypertrophy. Pathological Hypertrophy develops in two ways; Concentric hypertrophy caused by chronic pressure overload, and eccentric hypertrophy, which is caused by increased volume overload. There are some indicators that change their values as a result of aging and can affect pathological hypertrophy (1-5). This study aimed to investigate the effect of aerobic training on cardiac tissue levels of H2O2 and phosphorylation of ERK1/2 and P38 as well as left ventricular internal diameter (LVID), the left ventricle walls thickness (LVWT) and fibrosis in middle-aged rats.

Materials and Methods: Forty wistar rats, including young rats (n=10, 4 month-old) and middle-aged rats (n=30, 13-15 months-old) were enrolled in this experimental study. The all young and 10 middle-aged rats were sacrificed (randomly) under deep anesthesia without any exercise training as normal young control and normal middle-aged control respectively. The remaining 20 middle-aged rats participated in 4 (n=10) or 8-week (n=10) aerobic exercise training.

Result: p-ERK1/2 was significantly decreased after eight weeks and p-P38 was significantly decreased in the fourth (P=0.01) and eight weeks of training (P=0.01). A similar decrease was reported for aging-induced H2O2 in the fourth (P=0.016) and eighth weeks (P=0.001). LVID was significantly increased in eight weeks, but LVWT and fibrosis was significantly reduced in the eighth week (P=0.011, P=0.028, P=0.001 respectively).

Conclusion: Moderate aerobic training attenuates aging-induced pathological cardiac hypertrophy at least partially by attenuating oxidative stress, and reduction in the phosphorylation of ERK1/2, P38 and fibrosis.

Key words: Oxidative stress, MAPK, Cardiac hypertrophy
The effect of using a cryotherapy on the time to peak of reaction forces during stance phase of walking

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Abstract

**Background and Objectives:** Cryotherapy is used as a clinical and available therapies to relieve acute pain caused by soft tissue damage. The purpose of this study was to investigate the effect of using a cryotherapy on the time to peak of reaction forces during stance phase of walking.

**Methods:** In this study, 10 soccer players volunteered to participate in the present study. Experimental protocols were performed during four conditions of walking before and after fatigue with and without cryotherapy with two temperatures of 11 and 8 degrees. ANOVA with repeated measures test was used for statistical analysis.

**Results:** The findings of this study showed that at the time to peak of ground reaction forces in the anterior-posterior direction and during the heel contact phase after the fatigue test and post-test with a temperature of 11 ° C was significant (P = 0.018; d = 0.82) . Other time to peak components of ground reaction force did not show any significant difference between the four conditions (P >0.05).

**Conclusion:** The automatic cryotherap device had the most effect on the time to peak of the ground reaction forces in the anterior-posterior direction during the heel contact phase of walking.

**Keywords:** Cryotherapy, Soccer Player, Ground reaction Force
A comparison between local and functional physical fatigue on lower limb muscular power

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Introduction: Muscular fatigue is a complex phenomenon that leads to a reduction of the maximal voluntary force. In this study, we propose a comparison between local and functional physical fatigue on lower limb muscular power in active healthy males.

Methods: 10 active healthy males with age range between 18-25 years were volunteered to participate in this study. During both before and after local and functional muscular fatigue protocols, the lower limb muscular power was assessed. ANOVA repeated measure test was used for statistical analysis. Alpha level was set at 0.05.

Results: Our results showed a reduction in lower limb muscular power after both fatigue protocols (P<0.05). Results did not show any significant differences between local and functional muscular fatigue protocols (P>0.05).

Conclusion: Overall, there not any significant differences between local and functional fatigue protocols in lower limb muscular power. However, further study should be done on other biomechanical parameters such as joint power, muscular activity, and running and jumping economy.

Keywords: Fatigue, Power, Jump
Effect of cryotherapy on precise of kicking and dribbling time in soccer players

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Abstract

Introduction: Cryotherapy is one of the most used treatments for acute injuries. The aim of the present study was to assess the effect of cryotherapy on precise of kicking and dribbling time in male soccer players.

Methods: 10 healthy male soccer players (age range between 21-24 years) were volunteered to participate in the present study. Cryotherapy was done with ice bag on hamstring and quadriceps muscles. The cryotherapy time was about 15 minutes. The precise of kicking and dribbling time were recorded both before and after cryotherapy. Paired sample t-test was used for statistical analysis. Alpha level was set at 0.05.

Results: Our results demonstrated significant increase in dribbling time after cryotherapy (2.8±1.0 s) compared with before it (2.1±0.9 s) (p=0.01). Moreover, finding showed significant increase in precise of dribbling after cryotherapy (2.5±0.7) compared with before it (1.9±0.9) (p=0.02).

Conclusion: Cryotherapy could possibly decrease the dribbling velocity. However, cryotherapy increased the precise of the kicking ball test.

KeyWords: Cryotherapy, Kicking, Soccer players
Effect of Acute Thyme hydro-extract Supplementation on Performance of 200 and 400-Meter Sprints

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Abstract

Background: Different herbal supplements have been studied by many researchers to improve athletic performance and prevent or at least delay fatigue. The aim of this study was to determine the influence of acute thyme hydro-extract supplementation on performance of 200 and 400-meter running of young males.

Methods: After signing a written consent, a total number of 20 volunteer subjects (age: 21±2.62 years, height: 177.38±6.23 cm, weight: 70.72±12.56 kg) were divided randomly either into one of two groups considering their pre-test performance to fulfill the homogeneity of groups. After one week, they received 200 ml flavored and colored tap water (placebo group: n = 10) or thyme hydro-extract (experimental group: n = 10) 30 minutes before 200 and 400-meter running tests. At the first, participants completed 200-meter running test individually. 10 minutes after the end of first test, subjects tried 400-meter running test. The time needed to complete determined distances recorded by the researchers using a stopwatch. By the way, the rate of perceived exertion was controlled by Borg scale. Statistical analysis was performed using 23rd version of SPSS software at the significance level of 0.5 with paired samples t-test.

Results: Findings revealed that thyme hydro-extract supplementation couldn’t significantly improve the performance of 200-meter dash compared to the placebo group (t8=-2.27, P = 0.053; t8=-3.51, P = 0.008, experimental and placebo group respectively). But interestingly, acute thyme supplementation did significantly improve 400-meter running performance (about 4 seconds) (t8=2.5, P = 0.037; t8=0.482, P = 0.643, experimental and placebo group respectively). Also, there was not a significant difference in the rate of perceived exertion between two groups on both tests.

Conclusions: like the previous animal studies, it seems that we can use this supplement to improve athletic performance even by acute intake and in intense exercises. Different underlying mechanisms can be responsible to these findings. Adenosine A1 receptor, hippocampus serotonin and dopamine levels and even elevated myofibrillar sensitivity to Ca2+ might be candidate mechanisms. Even though, further studies are necessary to understand the mechanisms involved in the presence of thyme extract to improve endurance performance.

Key words: Endurance exercise, Performance, Supplementation, Thymus migricus Klokov & Desj.-Shost.
COMPARING THE EFFECTS OF LINEAR AND UNDULATING PERIODIZED RESISTANCE TRAININGS ON ANAEROBIC POWER IN SEDENTARY MEN

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Introduction: Periodization includes maximizing the overload principle and allowing a better relation between stress/recovery. Strength training periodization is a relevant tool in designing an exercise program for regular strength training practitioners (1). Because no studies comparing linear and undulating periodization resistance training performed with the aim of increasing anaerobic power have been found, the objective of the present research was to compare the efficiency of linear and undulating periodization resistance training on anaerobic power in previously sedentary men.

Methodology: Twenty sedentary men (aged 25.75±5.56; body mass index 22.98±2.98 kg/m²) were divided to equal groups of linear or undulating periodized resistance training. Subjects performed two types of resistance exercise trainings for 9 weeks, 3 sessions per week at intensity corresponding with 80 to 90% one repetition maximum. Running-Based Anaerobic Sprint Test (RAST) is used to measure anaerobic power. Data were analyzed by independent t-test at P<0.05 level.

Results: Our finding showed that maximal power (461±118 and 339±73 watts for linear and undulating groups, respectively) (P=0.012), average power (281±76 and 222±40 watts for linear and undulating groups, respectively) (P=0.046) and fatigue index (7.51±2.37 and 4.73±1.51 watts/sec for linear and undulating groups, respectively) (P=0.006) in linear group were significantly higher than undulating resistance training group after intervention. However, there was no significant difference in minimum power between linear (153±56 watts) and undulating resistance groups (129±29 watts) (P=0.252) after intervention.

Discussion and conclusion: It has been revealed that the improvement of anaerobic power parameters following general resistance training is less than ballistic resistance training (2). Hence, it has been reported that greater achievement in anaerobic power is gain following greater increases in intensity and speed. In reality, the increase in anaerobic power is due to the intensity and speed of the exercise (2). Therefore, it is believed that an increase in the anaerobic power observed in the linear group was due to the higher intensity of exercise during the last 3 weeks of the training period. Collectively, in order to develop anaerobic power, it is preferable to use linear periodization resistance training rather than the undulating periodization resistance training in sedentary men.

Keywords: Periodization, Linear periodization, Undulating periodization, Resistance training, Anaerobic power, Sedentary, Men.
EFFECT OF TRAINING ON CYCLOERGOMETER AT LOW- AND HIGH - INTENSITY ON BLOOD UREA NITROGEN AND CREATININE IN SEDENTARY OLDER WOMEN

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Introduction: Urea is produced in the body as part of the urea cycle from the oxidation of amino acids, indicating the catabolism of the proteins for energy production. Moreover, another marker involved in muscle breakdown is creatinine, which expresses the metabolism of creatine in the muscle (1). The effect of endurance training on blood urea and creatinine levels is not well defined in elder subjects. Therefore, the aim of the present study was to investigate the effect of low- and high-intensity endurance trainings on urea and creatinine levels in older women.

Methodology: Twenty five sedentary women (age 59.52±2.16 year-old) were recruited and randomly divided into control, low- and high-intensity training groups. Eight weeks of low- and high-intensity exercise training were conducted on the stationary cycle ergometer at intensity corresponding to 40-45 % and 80-85 % of heart rate reserve, respectively. Blood samples were taken before and 48 hour after the exercise training period. Data were analyzed at P <0.05 level.

Results: Our findings showed that there were no significant differences in blood urea nitrogen levels (18.61±5.76 and 16.61±3.48 mg/dl for pre and post exercise, respectively) (P=0.252) and creatinine (0.89±0.09 and 0.83±0.06 mg/dl for pre and post exercise, respectively) (P = 0.203) in the control group. Low-intensity exercise had no significant effect on blood urea nitrogen (17.48±2.74 and 18.61±2.89 mg/dl for pre and post exercise, respectively) (P=0.932) and creatinine (0.87±0.05 and 0.89±0.08 mg/dl for pre and post exercise, respectively) (P=0.512). In addition, high-intensity exercise had no significant effect on blood urea nitrogen (16.16±2.98 and 17.13±2.35 mg/dl for pre and post exercise, respectively) (P=0.492) and creatinine (0.86±0.11 and 0.91±0.15 mg/dl for pre and post exercise, respectively) (P=0.141). Furthermore, no significant differences were observed in blood urea nitrogen (P=0.437) and creatinine (P=0.370), between groups after the intervention.

Discussion and conclusion: Although, one study demonstrated that 12 weeks aerobic exercise in morning and afternoon significantly reduced 24 hour urine urea in diabetic women (2), however our findings showed that endurance training with low and high-intensity for 8 weeks had no significant effect on blood urea nitrogen and creatinine. These contradictory findings probably due to the different subjects and urine samples used in that study. Therefore, it is thought that low- and high-intensity endurance trainings had no dramatic effect on parameters involved in muscle protein breakdown in older women.

Keywords: Endurance exercise training, Urea, Creatinine, Aging, Women.
**THE EFFECT OF ROPE JUMP EXERCISE TRAINING ON LOWER AND UPPER BODY EXPLOSIVE POWER IN OBESE ADOLESCENT BOYS**

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**Introduction:** Rope-jump exercise can be used to develop the coordination of neuromuscular skills, muscular strength, and cardiovascular endurance. Rope jumping burns calories and builds strength in the upper and lower body (1). The effects of rope jump exercise on upper and lower extremity explosive power have not been researched very well. Therefore, the aim of this study was to assess the effects of rope jump exercise training on explosive power in obese participants.

**Methodology:** Twenty obese untrained adolescent boys (age 13.40±1.09 years, body max index 27.12±2.19 kg/m²) were divided equally into control and exercise groups. Subjects in exercise group performed rope jump exercise training for 8 weeks, 3 days per week. Upper and lower body explosive powers were determined using medicine ball chest throw (MBCT) and countermovement jump (CMJ), respectively. Significant level was set at P<0.05.

**Results:** Post-exercise CMJ height (22±3.88 cm) was significantly higher in the rope jump exercise group than pre-exercise (19.67±3.58 cm) (P=0.005). However, there were no significant differences in CMJ power (1994±468.76 and 2036±469 watts for pre and post exercise, respectively) (P=0.386) and distance of MBCT (3.39±0.35 and 3.48±0.47 m for pre and post exercise, respectively) (P = 0.278) in the rope jump exercise group. In addition, there were no significant differences in CMJ height (21.80±3.96 and 21.15±3 cm for pre and post stage, respectively) (P=0.169), CMJ power (2328±557.57 and 2300±533.95 watts for pre and post exercise, respectively) (P=0.175) and distance of MBCT (3.58±0.44 and 3.60±0.42 m for pre and post exercise, respectively) (P = 0.581) in the control group. Furthermore, no significant differences were observed in CMJ height (P=0.591), CMJ power (P=0.257) and distance of MBCT (P=0.573) between groups after intervention.

**Discussion and conclusion:** It has been reported that leg strength increased following 10 weeks of rope jump exercise training in 10-12 year old boys (2). Moreover, rope jump exercise training resulted in maximal speed during eccentric contraction in volleyball players than weighted rope jump training (1). Hence, part of the observed increase in lower body explosive power of the present study can be due to the cumulative effects of this type exercise training on speed and strength of muscle contraction. Collectively, rope jump exercise training increases lower body explosive power in obese adolescent boys.

**Keywords:** Rope jump exercise training, Explosive power, Countermovement jump, Medicine ball chest throw, Adolescent, Obese, Boy.
Effect of cryotherapy on quadriceps and hamstring muscular strength

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Abstract

Introduction: Quadriceps and hamstring muscular strength is one of the most important parameters in preventing muscular strength. The aim of the present study was to assess the effect of cryotherapy on quadriceps and hamstring muscular strength in both male and female athletes.

Methods: 10 healthy male athletes and 10 healthy female athletes (age range between 18-24 years) were volunteered to participate in the present study. Cryotherapy was done with ice bag on hamstring and quadriceps muscles. The cryotherapy time was about 15 minutes. Quadriceps and hamstring muscular strength was recorded before and after cryotherapy. Two way ANOVA with repeated measure was used for statistical analysis. Alpha level was set at 0.05.

Results: Our results demonstrated significant effect of Group (p<0.001) and also Time (p<0.001) factors on both quadriceps (51.2±26.5 versus 56.2±26.9) and hamstring (42.7±21.5 versus 48.1±22.1) muscular strength.

Conclusion: Cryotherapy could possibly increase the muscular strength in both male and female athletes.

KeyWords: Cryotherapy, Strength, Male, Female
Aim and Background: Morning exercise is a branch of outdoor workouts which has been given special emphasis on military centers (1). The current study was aimed to assess the 8 weeks of Morning Exercise effects on the body composition and heart function of NEZAJA personnel.

Methods: In this study, 30 personnel’s of NEZAJA were chosen using an availability sampling method. Subject randomly divided into 2 groups (training and control). Morning exercise sessions were performed by training group three times per week, with each exercise session lasting for 45 to 60 minutes with an intensity of 50-60%. Body composition (BMI) and heart function (VO_{2max}, Queen Steps test and resting heart rate) were assessed before and after 8 weeks of morning exercise. T-test was used to statistical analysis.

Result: There was no difference in BMI between groups before and after 8 weeks of training. Also 8 weeks of morning exercise didn’t affect the heart function. There was significant decrease in the resting heart rate.

Discussion: Military personnel need to be accepted in physical test for entering NEZAJA, so they have to be in good condition. Maybe the initial good condition of the subjects, and also special training of NEZAJA personnel’s disabled the morning exercise effects on BMI and VO_{2max}. Probably decrease in Blood viscosity and increase heart muscle endurance and power, lead to decrease resting heart rate.

Conclusion: Because of military personnel good physical condition, usual morning exercises has limited effects, but could keep up this condition and affect psychological features and consequently lead to a better mental and health state (2, 3).

Keywords: Morning exercise, Body composition, Resting heart rate, Heart function, NEZAJA personnel
COMPARISON OF HEMODYNAMIC RESPONSES AFTER AEROBIC TRAINING WITH AND WITHOUT VASCULAR OCCLUSION OF YOUNG NON-ATHLETE MEN

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Introduction: Research has shown that an aerobic exercise session reduces the average resting blood pressure. However, the effect of aerobic training with vascular vascular occlusion on hemodynamic responses has not been well studied. Therefore, the aim of the present study was to compare hemodynamic responses after aerobic training with vascular obstruction without vascular occlusion of young non-athlete men.

Methodology: 14 overweight men (age $27 \pm 4/3$ years, body mass index: $29.29 \pm 1.04$ kg / m\textsuperscript{2}, weight: $90.14 \pm 3.1$ kg) at intervals of one week and in the form of Randomized in one of the aerobic exercise groups with and without vascular occlusion. Practice protocol included Cycling for 5 minutes (6 times) with 70 percent of maximum heart rate and 1 minute's rest between sets. pressure of 160 mmHg was applied to limit blood flow and And at the time of one minute of rest between the turns, the pressure of the tourniquets was completely removed to maintain cardiac output. Blood pressure, heart rate and myocardial oxygen uptake were measured and recorded every 15 minutes, up to 90 minutes, after the activity. Data were analyzed using correlated T-test, repeated measure ANOVA and Bonferron's test at a significant level of 0.05.

Results: No significant difference was found between systolic blood pressure immediately after exercise and time of 15, 30, 45, 60.75 minutes after an aerobic exercise session with vascular obstruction compared to aerobic exercise session without vascular occlusion ($P <0.05$), but there was a significant decrease in arterial obstruction during 90 minutes after aerobic training ($p <0.05$). Diastolic blood pressure was not significantly different at any time of measurement in each activity and between the two different activities. Heart rate after aerobic exercise without vascular occlusion was significantly lower than vascular occlusion ($p <0.05$). Also, in aerobic training with vascular occlusion, myocardial oxygen cost was higher than without vascular occlusion ($0/05 > p$).

Conclusion: Therefore, it can be said that aerobic exercises (with or without blood) cause hypotension.

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Effect of 12 weeks elastic band resistance training on mir-34a expression and cardiovascular risk factors in obese elderly women

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Abstract

Introduction: Obesity is a global epidemic and a risk factor for many diseases. miRNAs are increasing as pathological molecular determinants of pathologic processes. The aim of this study was to investigate the effect of 12 weeks elastic band resistance training on mir-34a expression and cardiovascular risk factors in obese elderly women.

Method: In this single blind randomized clinical trial (RCT), 49 elderly women with obesity (based on the results of the DEXA test, age 64.13 ± 3.68, fat percentage 45.4 ± 6.56, BMI 33.1 ± 3.71) were divided into two groups: control (n=22) and training (n = 27). The training group performed elastic band resistance training for 12 weeks and three sessions at week for all major muscle groups. 48 hours before and after 12 weeks of intervention, a DEXA test was performed. Paired-samples t-test or Wilcoxon tests were used for within group comparisons and independent-samples t-test and ANCOVA tests were used for comparison between groups.

Results: The results of the intergroup comparisons indicated a significant decrease in mir-34a expression and LDL levels and a significant increase in HDL in the training group compared to the control group (P = 0.05, P = 0.03, P = 0.03, respectively), whereas there was no significant difference in body weight, body mass index, fat percentage, total cholesterol and CRP (P≥0.05).

Conclusion: It seems that 12 weeks elastic band resistance training have been able to modulate and reduce the serum concentration of mir-34a in obese elderly women, which was associated with a decrease in LDL levels and increase levels of HDL, although body mass index, fat percentage, total cholesterol and CRP Significant changes were not observed, which may be due to the type and intensity of the exercises, which requires further investigation in this field.

Key words: obesity, Resistance training, Elderly, woman, mir-34a.
ASSESSMENT ROLE OF BRAND SPECIAL VALUE ON CUSTOMER CITIZEN BEHAVING OF WEST AZERBAIJAN SPORT CLUBS

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ABSTRACT: Customers citizen behavior has influenced on gain and promote social invest of organizations. Path of this survey is descriptive and has practical purpose. Statistical population of this research was sport clubs customers in West Azerbaijan province. The sample size based on Morgan table are 400 person in statistical population. The results shows that all dimensions of brand special value has significant effect on citizen behaving.

KEYWORDS: West Azerbaijan province, Brand, Citizen Behaving, Brand Awareness, Quality of Brand

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EVALUATING PROCESS SPEED, VISUAL SEARCHING SPEED AND PROBLEM SOLVING IN TABLE-TENNIS PLAYERS USING PSYCHOLOGICAL TESTS, CORRELATION DIMENSION AND ENROPY DERIVED FROM EEG SIGNAL

Emad Omouri Sarabi\textsuperscript{25}, Mohammad ali khalilzadeh\textsuperscript{26}, Saleh lashkari\textsuperscript{27}

Abstract:

By the development in science and the industrialization of athletic sports, it was found that without a suitable plan and policy exploiting the direct and indirect advantages of the sport will not be possible. Besides, finding and choosing preferable elite people always has been a challenge in every context. Good talent with the usage of practice and applying the necessary skills and having the spirit in people can have a great influence on achieving success in professional sports. According to the nature and the necessities of ping pong, three cognitive skills of " Processing Speed", "Visual Searching Speed" and " Problem Solving" were used to evaluate the players' performance.

17 people including 9 athletes and 8 non-athletes aged between 18 to 26 were evaluated in this study. The "Trail Making Test" were used to measure the speed of visual searching speed, the "Tower of London" were used to evaluate the problem-solving skill and the "Digit Symbol Substitution Test" were used to evaluate the processing speed. Also, the EEG signal was obtained from these people within the psychological tests and in rest. The signal’s simple rate was 256 and took from the Cz channel.

In first, the results of the psychological tests and EEG signal features that concluded Entropy and Correlation dimension (CD) compared with the use of correlation coefficient. Then in the first level of the "Trail making Test" the athletes and non-athletes respectively made an average of 38.44 seconds (CD w/ Time=-0.33012, Entropy w/ Time=0.027679) and 51.87 seconds of time (CD w/ Time=0.057927, Entropy w/ Time=0.120115). In the second level, at the same test athletes get an average of 55.22 seconds (CD w/ Time=-0.52569, Entropy w/ Time=-0.38188) and non-athletes get an average of 76.62 seconds of time (CD w/ Time=-0.08038, Entropy w/ Time=0.304666). On the "Tower of London" Test, two factors of time and number of acts were considered, in which athletes reached to an average of 166 seconds (CD w/ Time=-0.69493, Entropy w/ Time=-0.36698) and 71 acts(CD w/ Move=-0.68143, Entropy w/ Move=-0.1964) but the non-athletes reached to 192 seconds(CD w/ Time=-0.4505, Entropy w/ Time=0.406009) and

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73 acts (CD w/ Move=0.069345, Entropy w/ Move=0.495256). At the last stage, "Digit Symbol Substitution Test" the athletes reached to an average of 131 seconds (CD w/ Time=-0.67924, Entropy w/ Time=0.027848) and non-athletes get an average of 155 seconds (CD w/ Time=-0.24534, Entropy w/ Time=0.415159).

Based on the results, it is obvious that non-athlete, non-professional ones could not get a better result than the professional athletes. Also, the correlation coefficient shows good inverse relationship between CD and "Tower of London" outputs that helps with the determination of cognitive performance in ping-pong players.

**Keywords:** problem solving, processing speed, visual searching speed, psychological tests, Electroencephalogram, Correlation dimension, Entropy

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**Measure trends in sport sponsorship market in Esfahan, with emphasis on demographic variables**

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Market orientation as a set of processes and activities of the task, directed toward maintaining customer satisfaction through continuous assessment of needs are defined (Cornwell, Howard-Grenville & Hampel, 2018). Managers tend to seek market by different markets, including the market leaders in the sports industry. Advocates pushing them to study characteristics different markets with high profitability will, the growth and development of the world of sports, attention of the government privatization, the growing support for the exercise causes media coverage, the difficulties of communication with corporate clients, advertising costs and its target markets factors that may attract the of supporters into the sports (Joo, Miller & Fink, 2019). In international level, the sport has a eleventh place among the industries in different sports industry, sectors such as, marketing, professional sports, sports apparel, sports media, sports and entertainment, etc. and is growing (Woisetschläger, Backhaus & Cornwell, 2017).

The study of suggests that demographic characteristics as determinants of trends in industry sponsored sports. Descriptive and correlational and the study was conducted; questioner market trends exercise of market orientation with reliability, Cronbach's alpha (0/84) was obtained at the semantic level 0/05. The research community the city of Esfahan (16 companies, Private Bank Institute), respectively. Due to limited data, the sample equal to population. Selected data statistical software SPSS 21 and descriptive tests (frequency, mean) and inferential statistical test and Point by Serial, Spearman Kolmogorov - Smirnov, were analyzed.

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Study in sports sponsorship market in Esfahan, with emphasis on the demographic variables measured, indicate Supporters with that gender orientation is related positively to market and communicate, and the degree of customer orientation -Competitor is negatively correlated with the amount and type of activity, there tends to be highly correlated with market research Joo and et al (2019) are consistent. The most important factor in attracting and sex education as well as the market absorbed the least important factor in the market. Sports industry, sectors such as, marketing, professional sports, sports media, sports and entertainment Covers and is growing (Woisetschläger and et al, 2017). Results of our understanding of demographic trends and market sponsors and their willingness to support the sports industry to increase it .managers would assume that in order to attract manufacturers to the sport the industry consultations to fulfill different.

**Keywords:** Market orientation, financial aid, Orientation to exercise market, Sport, Sponsorship, Industry

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**The effect of eight weeks of interval anaerobic training on some of the respiratory parameters in sedentary students**

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**Abstract**

**Introduction:** One of the methods for improving performance is intense interval training that have attracted the attention of sports science researchers in recent years, which are usually attributed to relatively short intermittent repetitive patterns of intensity or intensity close to the maximum. The purpose of this study was to investigate the effect of eight weeks of anaerobic interval training on respiratory parameters of sedentary students.

**Methodology:** The subjects of this study were 20 healthy sedentary male with a range of 20-30 years old who were selected among students of Payame Noor University of Ardebil. Independent variable of this study was an anaerobic interval training, which lasted for eight weeks and every week for four sessions and each session consisted of 10 minutes warm up, 9-6 repetitions of 30
second dash-run and 5 minutes of cooling down. Prior to administering independent variable, all subjects went through preparatory phase including 30-minute low intensity aerobic training (3 sessions a week with intensity 65-60%). Some respiratory indices were measured before and after the training program by a spirometer. Descriptive statistics were used to determine the mean and standard deviation of each variable and Shapiro-Wilk test to determine the normal distribution of data. T-test was used to examine intra-group variations and covariance analysis was used for intergroup variations. All calculations were performed using SPSS software version 23 and the significance level of the tests was less than 0.05.

Results: Anaerobic interval training increased 21% IRV, 13% vital capacity (IVC), 49% expiratory volume (ERV), 33% current volume (VT), 32% peak tail flow (PIF) , 55% of the maximum expiratory flow of 25% (MEF25), 63% of the maximum expiratory flow of 50% (MEF50), 89% of the maximum expiratory flow 75% (MEF75), 78% peak expiratory flow (PEF) and 93% 75% (85-MEF75).

Discussion and Conclusion: It seems that anaerobic interval training can increase the performance of the respiratory muscles in sedentary male and improve lung function by increasing some respiratory parameters.

Keywords: Interval training, respiratory indexes.
Effect of eight weeks interval aerobic exercise on liver enzymes in men’s with nonalcoholic fatty liver disease

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Abstract

Introduction: The aim of this study was to determine the effect of eight weeks interval aerobic exercise on liver enzymes and plasma triglyceride in men’s with nonalcoholic fatty liver disease.

Methodology: For this purpose, 24 men with non-alcoholic fatty liver disease with features (Mean± SD; age 51.31±4.57 year, weight 84.08±5.18 kg, height 173.44±5.03 cm, body mass i, age; 53/86 ± 4/61 (years), weight; 94/04 ± 4/00 (kg), height; 177/42 ± 4/25 (cm), Body mass index 28/21 ± 2 /19 (kg/m²), who were selected through a call and them were divide to two groups (aerobic and control) voluntary. Moderate-intensity interval aerobic exercise Program include walking increasingly 50 percent heart rate reserve three sets at 7 minutes to rest for 5 minutes between sets continued to75 percent heart rate reserve three sets with 10 minutes, and three times in a week. This study was pretest-posttest and its implementation period lasted eight weeks. The dependent variables in the plan include liver enzymes (ALT, AST).

Result: Student's t-test results indicated significant effect of Moderate-intensity interval aerobic exercise on reducing variable plasma AST (P=0.009) and also a significant impact on reducing levels of the enzyme ALT (P=0.018), respectively.

Conclusion: The most effective Moderate-intensity interval aerobic exercise training can help to be used as supplement in the treatment of non-alcoholic fatty liver disease.

Keywords: non-alcoholic fatty liver, aerobic exercise, liver enzymes.
The study of the effects of sources of stress before competition in elite athletes

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Abstract

The purpose of this study was to identify sources of stress before competition in elite wrestlers. In this descriptive-comparative study, which was a phenomenological method based on purposeful sampling, Medal athletes attended the championship in the country with an average age (22.4 ± 3.7 years). It was evaluated with 10 selected wrestlers who ranked first to third in the tournament. The Stress Resource Questionnaire completed the DASS 21 test. According to the findings, participants' stress sources were identified in the form of 3 explanatory codes (audiences and media, experience of participation in the competitions, and the members of the technical committee and coaches). The results showed that if elite shipmen devote less of their energy to coping with the stress caused by stressful sources, they would increase the likelihood of their sport by taking the psychological distance from the prohibition of acute stress.

Keywords: wrestlers, stress, anxiety, media

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The effect of creatine supplementation on anaerobic power and muscular endurance of elite wrestlers

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Abstract

Many athletes use supplements to enhance and improve exercise performance. Therefore, in view of its widespread use among athletes, this study examined the effects of the consumption of a creatine period on the body composition, anaerobic power, and muscular endurance of practicing wrestlers. For this purpose, 18 elite wrestlers with a minimum history of the championship (average age of 20 years, weight 75.4 ± 3.7 kg, height 178.25 ± 19.4 cm) were randomly divided into two experimental groups (n = 9) and control (n = 9). Subjects in four groups received either 20 grams of creatine or placebo for 5 days in each of the scheduled supplements and placebo groups. Anaerobic powers of upper and lower trunk, muscular endurance of abdominal muscles and bone muscles, and BMI of subjects were measured in three stages (pre test, after 5 days and after 25 days) and statistical analysis using the test Variances were performed with repeated measurements. The results showed that in the experimental group, after taking keratin supplements, there was no significant change in muscular endurance of the wrestler, but it increased the anaerobic power of the upper body. According to the results, it seems that the use of a supplement of creatine to improve the performance of the fermentation capabilities of wrestlers and recommended that athletes use a creatine supplement for a period of time.

Keywords: wrestlers, creatine supplement, anaerobic power, muscular endurance

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Investigating the readiness of wrestlers in weight lifting by a new "2-day" method on their sport performance

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Abstract

The purpose of this study was to describe the wrestlers’ mental readiness to hold the two days of the tournament. Characteristics related to the twelve factors of mental skills using the omsat test 3, the three factors of the control location using the Levenson test, the seven factors of sport motivation using the sport motivation scale, and the three factors of mental strength using the breastfeeding test and The colleagues were evaluated in 85 wrestlers who participated in the youth championship. The results showed that the standard scores of participants' basic psychological basics were high, but the scores of their psychological skills and their cognitive skills were low. The internal and external motivation of the majority of participants was high, and their low level of anxiety was low. From the findings of this study, it can be concluded that the status of young wrestlers is desirable in terms of places of control and motivation, but in terms of psychological control, there is a need for more training for the improvement and success of the sport. Also, the design of training programs and various competitions seems to be necessary for mental adaptation and strengthening their prognostic skills.

Keywords: wrestlers, mental skills, control locations

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THE EFFECT OF 8 WEEKS AEROBIC TRAINING AND INTERMITTENT HYPOXIA ON EXPRESSION ANGIogenic FACTORS IN CARDIAC MALE WESTAR RATS

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Background: Hypoxia and exercise training increase the capillary density of the muscle and the heart and is one of the important reasons for the development of aerobic exercise and the prevention and treatment of many diseases. Therefore, the purpose of this study was to investigate the effect of aerobic training and intermittent hypoxia on the expression of PGC-1α angiogenesis-related proteins in the cardiac tissue.

Materials and Methods: In an experimental study, Forty male Wistar rats weighing 220±20 gr were randomly divided into four groups; control (C), hypoxia (H), training (T), and Hypoxia + training (H+T) groups. Hypoxia group exposed to chronic intermittent hypoxia (PiO₂≈106 mmHg, simulated altitude ≈3400 m, 14% oxygen for 8 weeks). And exercise group ran on a treadmill for 8 weeks, 5 session/week. Then, relative protein density of PGC-1α, p-AMPK, ERRα, and VEGFA were measured with Western blot method.

Results: The result showed that (H), (T), and (H+T) groups significantly increased relative protein density of PGC-1α, VEGFA, AMPK compared to the control group (P= 0.001). Although, PGC-1α index was significantly different between the exercise and hypoxia groups (P= 0.017). But, VEGFA index was not significantly different between the exercise and hypoxia groups (P= 0.496). However, significant increased relative protein density of VEGFA in the H group compared to the T+ H groups (p≤0.001). Also, the relative protein density of ERRα was significantly different between the control and hypoxia groups (P= 0.40), but there was no significant difference between the control group with exercise (P= 0.552) and exercise with hypoxia (P= 0.465). Moreover, phosphorylation levels of AMPK in the (T) group showed an increase compared to the control (H) group (p≤0.001).

Conclusion: Although hypoxia was an effective stimulator to induce the expression of PGC-1α and VEGFA and aerobic exercise was a potent phosphorylation inducer of AMPK, their combination did not have a synergistic effect.

Keywords: Hypoxia; Angiogenesis; Aerobic training
The effect of aerobic training period and oral intake of Fenugreek seed on HbA1c and levels and ICAM-1 some glycemic indices in type II diabetic women

**Backgrounds:** High levels of lipids, glycated hemoglobin, fasting blood glucose, ICAM-1 and resistin as a risk factor for cardiovascular disease in diabetic patients is discussed. The aim of this study was to investigate the effect of the implementation of an exercise protocol on the protection of heart resistin, insulin resistance index and some cardiovascular risk factors in obese women with type 2 diabetes.

**Materials and Methods:** In a semi-experimental case-control study, Among the the non-active obese women with type 2 diabetes mellitus in Ardebil City, which comprise the statistical population of this study, 28 subjects (Mean age 54.39 ± 4.64, height 162.09 ± 3.38, duration of disease period: 4.10 ± 1.91) were selected as the sample and randomly divided into four equal groups (each group, n=7). The experimental group for 12 weeks (three sessions per week, each session 60 minutes) aerobic exercise with 40 to 70 percent of maximum heart rate did. Two days before and after intervention was measured. In SPSS software was used to analyze the variations and intra-group differences within the group of paired t-test was used. In order to investigate the results between the groups, one-way ANOVA test was used with LSD follow-up test and Cohen's D test to estimate the effect size.

**Results:** The results showed that after 12 weeks of intervention, weight, body fat percentage, glucose, insulin resistance, resistance to resins, HbA1c, and ICAM-1 were significantly different in the exercise + supplement group compared to other groups (P = 0.05).

**Conclusion:** Regarding the results of this study, regular aerobic exercise along with complementary supplementation of Fenugreek seed in the exercise+supplementary exercise group resulted in a reduction in muscle mass in the studied variables, which is probably due to the synergistic effect of aerobic exercise and Fenugreek supplement. Therefore, the results of this study are suggested. In addition to administering aerobic activity to diabetic patients, it is recommended to use seed of the plant of Fenugreek.

**Key words:** aerobic exercise, Glycosylated hemoglobin, ICAM-1, resistin, type 2 diabetes.
The effect of vitamin D supplementation on improving muscle strength, muscle volume and cardiorespiratory fitness through resistance training in male athletes with vitamin D deficiency

Abstract:

Backgrounds: The purpose of this study was to investigate the effect of 8 weeks of resistance training with vitamin D injection on muscle strength, muscle volume, and cardio-respiratory fitness in futsal men with vitamin D deficiency.

Materials and Methods: For this purpose, 40 male futsal players (mean age: 25.95 ± 3.61, height: 176.82 ± 4.9 cm, weight: 70.26 ± 5.34 kg, body mass index: 1.67 ± 22.09%, body fat percentage: 13.31 ± 3.97) which according to the American Cardiology Association Index (with a mean serum level 19.24 ± 15.5) had high vitamin D deficiency, were selected through convenience sampling and randomly divided into 4 groups of 10 subjects: exercise, exercise-complement, supplement and control. The supplement and supplement-exercise groups received injections of vitamin D3 supplementation (intramuscular injection of 50,000 units) for 8 weeks, once every two weeks. The exercise and supplement-exercise groups for 8 weeks, performed resistance training with intensity of 75% 1RM, 3 sessions per week. One day before and after intervention, blood sampling was collected to measure 1.25 (OH) 2D levels. Muscle strength and volume as well as Vo2max were measured and recorded before and after the training and supplementation period.

Results: The results of this study showed that muscle strength in all three experimental groups had a significant increase from pre-test to post-test, and significant increase in muscle volume was observed only in exercise and supplemented exercise groups. The cardiorespiratory fitness increased in all groups were so small that the increase was not significant (P≥0.05). ANOVA's test output showed between supplement-exercise group with supplemental and exercise groups, no significant difference was observed in any of the measured variables (P≥0.05).

Conclusion: Based on the findings of the present study, it seems that simultaneous application of vitamin D supplementation and resistance training for eight weeks does not have a significant effect on the improvement of the performance of futsalists. Perhaps the type of sporting activity tested, the level of physical fitness, and the type of sport of subjects will have an impact on the effectiveness of supplementation.

Keywords: Resistance training, Vitamin D, cardiovascular fitness, muscle mass and muscle strength
THE IMPACT OF FAST AND SHORT-TERM WEIGHT LOSS ON THE HORMONAL AND PERFORMANCE OF IRANIAN YOUNG ELITE JUDOS


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Abstract

Purpose: To evaluate the effects of fast weight loss (FWL) and short terms weight loss (SHWL) on the salivary free testosterone and cortisol and performance of young elite Judos.

Methods: 14 judos (mean age of 17.79 ± 0.75 years, height of 172.06±4.61 cm, weight of 70.04 ± 8.72 kg, and BMI of 23.21 ± 2.09) who were randomly assigned into two groups: fast-term weight loss group (FWL) (performed exercises with conventional method during 24 hours, with severe food restriction and water and using thick clothing) and short-term weight loss group (SHWL) (performed the exercises in a 10-day program with a daily calorie reduction from 4 to 5% and exercise program included 3 sessions in which each session lasted 40 minutes) participated in this study. Exercise program by weight was also similar in both groups. The salivary free testosterone, cortisol and function indicators were measured in two phases (pre-test and post-test).

Results: The results showed that SHWL had no significant impact on hormone and functional variables (p≥0.05). Although in the FWL, time of Rockport test improved, causing to reduce aerobic fitness compared to pretest (p≤0.05), it had no significant effect on other variables (P≥0.05). Also the percentage of inter-group changes showed no significant difference between the groups (P≥0.05).

Conclusion: SHWL has some advantages over FWL, since it leads to less reduction in functional indices and athletes can participate in competitions with high confidence.

Keywords: weight loss, Testosterone, Cortisol, Judos
Comparisons of the effects of squat and leg press exercises on the EMG activity of quadriceps femoris muscles during step ascending activity

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Abstract

Background & Purpose: The Squat and Leg press exercises are methods that be used for lower limb muscular reinforcement. The aim of this study was to compare the effects of open versus closed kinetic chain exercise on the EMG activity of quadriceps femoris muscles during step ascending.

Methodology: Twenty healthy male students of between 20 - 28 years old were divided into two equal groups’ namely as squat group and leg press group. Squat and leg press groups underwent a 12 sessions of the Squat and Leg press exercises respectively. In synchronization with the EMG system, a Vicon motion analysis system (200 Hz) was used to separate the stance and swing phases. Measurements were repeated before and after the exercise program. Statistical analyses were done by independent and paired sample T tests. Alpha level was set at p<0.05.

Results: In Squat group, after the exercise training, during stance phase, the EMG activity of the left vastusmedialis muscle was decreased (P=0.040) significant. In Leg press group also, the EMG activity of the right vastusmedialis in swing phase and the left vastusmedialis muscle in both phases was decreased after the training program (p≤0.05). Range of reduction of vastusmedialis muscular activity in Leg press group was higher than that in Squat group (p=0.050).

Conclusion: Leg press exercise showed better outcome than the Squat for the strengthening of the vastusmedialis muscle measured in step descending task. It is suggested to use Leg press exercise with abducted hip for selective strengthening of vastusmedialis muscle.

Keywords: EMG activity, Stair ascent, Squat, Leg press
The effect of 12 weeks of combined training on metabolic syndrome indexes and insulin resistance in middle-aged obese women

Abstract

Background and Aim: Metabolic syndrome is a risk factor for the spread of cardiovascular disease and diabetes, and its prevalence is increasing alarmingly. The purpose of this research was to investigate the effect of combined training on Metabolic Syndrome Indexes and insulin resistance in middle-aged, obese and inactive women.

Materials and Methods: 24 patient female volunteers were selected. After the complement of questionnaires, they were randomly divided into two groups; a) combined training group (n=12) and b) control group (n=12). Combined training was performed 12 weeks, 3 times a week and each times was 45 to 50 minutes. For Observation Overload and continuing adaptation, intensity and duration of training has been considered increasingly during the 12 weeks. Anthropometric characteristics (BMI, WC) and risk factors of metabolic syndrome such as blood pressure, glucose, triglycerides and HDL were measured in the beginning and end of the research. T-test was used for intra-group comparisons and one-way ANOVA was used for between-group comparison in significance level of P<0.05.

Results: The Result indicated normal data distribution in pre-test and there was no significant difference at this level. Combined training significantly reduced the BMI, WC, blood glucose, blood pressure and insulin resistance (p<0.05);

Conclusion: The Combined training is more effective on BMI, lowering blood pressure and abdominal fat and provides improvements in Metabolic Syndrome Indexes in in middle-aged, obese and inactive women.

Keywords: metabolic syndrome, combined training, obese, middle-aged women.
Effect of 12 weeks elastic band resistance training on nitric oxide levels in obese elderly women

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Abstract

Introduction: Obesity is a global epidemic and a risk factor for many diseases. Endothelial function is an important factor in the assessment of atherosclerosis, lipid deposition in the inner walls of the arteries, high blood pressure, and heart failure. Vascular endothelial cells play an important role in regulating vascular activities by producing substances such as nitric oxide to stimulate vessels. The aim of this study was to investigate the effect of 12 weeks elastic band resistance training on nitric oxide levels in obese elderly women.

Method: In this single blind randomized clinical trial (RCT), 49 elderly women with obesity (based on the results of the DEXA test, age 64.13 ± 3.68, fat percentage 45.4 ± 6.56, BMI 33.1 ± 3.71) were divided into two groups: control (n=22) and training (n = 27). The training group performed elastic band resistance training for 12 weeks and three sessions at week for all major muscle groups. 48 hours before and after 12 weeks of intervention, a DEXA test was performed.

Results: The results of the intergroup comparisons indicated a significant increase on nitric oxide in the training group compared to the control group (P = 0.04), whereas There was no significant difference in body weight, body mass index, and fat percentage (P≥0.05).

Conclusion: It seems that 12 weeks elastic band resistance training have been able to increase the serum concentration of nitric oxide in obese elderly women, although body mass index, and fat percentage Significant changes were not observed, which may be due to the type and intensity of the exercises, which requires further investigation in this field.

Key words: obesity, Resistance training, Elderly, woman, nitric oxide.
The effect of 6-week training protocol with 20 percent weight increase on 10-RM in lift motion

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Introduction: Bodybuilding is a prevalent sport in the world. Strength training is most important part of the bodybuilding. The purpose of this study was to evaluate the effect of 6-week training protocol with 20 percent weight increase on 10-RM in lift motion.

Methods: 20 male powerlifter athletes (18-25 years) were volunteered to participate in the present study. The subjects were randomly placed into two equal sized groups (Control group versus Experimental group). At the first step, the 10-RM during lift motion was assessed. The training protocol in the experimental group was done with 20 percent increase in 10-RM. In the experimental group, the height of lift motion was increased during each session. The training protocol was done during 6-week. Participants in the control group done their normal daily training protocols.

Results: There was not any significant difference between both control (105±13 kg) and experimental (104±14 kg) groups during pre-test (p>0.05). However, the 10-RM in the experimental group (120±14 kg) was greater than that control group (107±12 kg) during post-test (p=0.044).

Conclusion: The training protocol that was used in the present study could improve muscular strength greater than that traditional training protocol.

Keywords: Powerlifter, Weight training, Lift motion
The effect of 10 weeks of resistance-endurance training on some physical fitness-motion and cardio-respiratory parameters in young wrestlers

Running title: Combined training on body characteristics in wrestlers

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Abstract

**Background and Aim:** Endurance-resistance exercises create special adaptations in young wrestlers. The aim of study was to investigating the effect of 10-week endurance-resistance training on some indicators of physical-motor and cardiovascular fitness in young wrestlers.

**Methods:** The subject were consisted of 30 eight weights classes wrestling in freestyle and Greco Roman wrestlers (Age: 19.63±2.1 year, Height: 175.63±5.12 cm, Weight: 81.46±18.42 Kg) and won first to third place in provincial competitions and invited to the Iranian national team squad. Mean±standard deviation and dependent t test were used for data analysis.

**Results:** 10-week endurance-aerobic training improved the number of resting heart rate, 8-minute semi-endurance running time, 20-m speed running time, the number of heart rate in step test, the number of horizontal bar, the throwing distance of medicine ball, the number of horizontal pull-ups and sit-ups, the number of reversed vertical pull-ups and sit-ups, 4×9m agility test time, Illinois test time, the parallel number, the number of jump rope (5 minute), long jump (broad jump), side jump (1 minute), the first, second, third and fifth station test time, swimming in horizon level (1 minute), flexibility, the travelled distance in jumping up and down (5 meter) in elite wrestlers.

**Conclusion:** Because of 10-week endurance training improved the physical and cardiovascular fitness variables in young wrestlers. So, it is recommended to wrestlers, coaches and care takers of wrestling including the Wrestling Federation wrestling, provincial and town councils, schools and parents to use the results of this study in order to maintain and increase physical and cardiovascular fitness.

**Key words:** Combined exercise, Physical and cardio-respiratory fitness, wrestling.
Heart rate variability and Sport

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Heart rate variability is a non-invasive, practical, and repeatable indicator of the function and level of activity of the autonomic nervous system of the cardiac heart, which implies the impact of hit to hit changes the heart during the successive heart rate and responds to environmental changes. The purpose of this study was to review the heart rate variability and exercise. Recent researches has shown that cardiac pacemaker recovery rates or cardiac pacing rates after exercise tests have a high correlation with mortality after cardiac events. In recent years, many researchers have examined the outcomes of the various types of clinical population. Evidence suggests that reducing heart rate variability is necessary for people with myocardial infarction, chronic heart failure, unstable angina and diabetes. However, interventions to increase, such as exercise therapy, have also been studied. The findings of this study suggest that exercise therapy can increase the rate of heart rate in myocardial infarction, chronic heart failure and cancer patients. One hypothesis is that a change in the direction of further modulation of the vagal may affect the prognosis of these individuals.

Keyword: Heart rate variability, Sport.
Effects of 6 Weeks vascular occlusion Low-Intensity Resistance Exercises on Muscle Hypertrophy and Strength

Abstract

Aim: The purpose of this study was to examine the acute and chronic effects of low-intensity concentric or eccentric resistance training with blood flow restriction (BFR) on muscle hypertrophy and strength.

Methods: Eight young women performed 30-40% of concentric one repetition maximal dumbbell curl exercise (three sets) 3 days/week for 6 weeks. One arm was randomly chosen for concentric BFR (CON-BFR) exercise only and the other arm performed eccentric BFR (ECC-BFR) exercise only at the same exercise load.

Results: During the exercise session, EMG for biceps brachii muscles increased progressively during CON-BFR, which was greater (p<0.05) than that of the ECC-BFR. Immediately after the exercise, muscle thickness (MTH) of the elbow flexors acutely increased (p<0.01) with both CON-BFR and ECC-BFR, but was greater with CON-BFR (11.7%) (p<0.01) than ECC-BFR (3.9%) at 10-cm above the elbow joint Following 6-weeks of training, MRI-measured muscle cross-sectional muscle volume (12.5%) of the elbow flexors were increased (p<0.01) with CON-BFR. Increases in muscle CSA and volume were lower in ECC-BFR (5.1%, 0.8% and 2.9%, respectively) than in the CON-BFR and only muscle CSA at 10-cm position increased significantly (p<0.05) after the training. Maximal voluntary isometric strength of elbow flexors was increased (p<0.05) in CON-BFR (8.6%), but not in ECC (3.8%).

Conclusion: These results suggest that CON-BFR training leads to pronounced acute changes in muscle size, an index of muscle cell swelling, the response to which may be an important factor for promoting muscle hypertrophy with BFR resistance training.

Keywords: vascular occlusion, young women, Muscle Hypertrophy, Low-Intensity Resistance Exercises
Investigation and comparison of heart rate variability (HF&LF index) in active and passive male students of Mohaghegh Ardebil University

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Introduction: Heart rate variability (HRV) is an important physiological factor that can be expressed in various cardiovascular and health issues. Therefore, the purpose of this study was to compare the HRV (LF and HF) Heart rate variability of active and sedentary male students of University of Mohaghegh Ardabili.

Methodology: The subjects were randomly selected from among students of Mohaghegh Ardebili University and divided into two groups (N= 30) active and sedentary male. An active group of physical education students and a sedentary group were selected among students of other disciplines who did not regular sport activities for at least six months. The Vx3 + monitor was used to measure the heart rate variability. Fourier axis frequency method was used to detect changes in different frequencies. In the measurement process, all guidelines for measurement were strictly observed; for bonding the labels to the subjects, the standard method recommended was used by the manufacturer of the relevant Holter system. Descriptive statistics were used to describe the findings. In the inferential statistics, Shapirovailk's test was used to determine the natural distribution of the data. Then, for comparison, the data of both groups were analyzed using independent t-test (0.05). Data analysis was done using SPSS-22 software.

Result: The results of this study showed that there is a significant difference between active and passive students in LF and HF indices.

Conclusion: Sport exercises have a significant positive correlation with the improvement of heart rate variability and show the effect of sports activities on improving autonomic nervous system function.

Keyword: HRV, Active and sedentary students.
Effect of two month aerobic training and pomegranate peel extract (PPE) supplementation on Insulin resistance index levels in obese rats

Abstract
Introduction & Objectives: The aim of this research was to investigate the Effect of two month aerobic training and pomegranate peel extract (PPE) supplementation on Insulin resistance index in obese rats.

Materials and Methods: Forty aged Wistar rats were randomly divided into four groups including Control, aerobic training (AT), PPE and PPE+ AT. Aerobic training groups participated in 8 weeks of aerobic training, five sessions per week on an automatic treadmill. Administration of pomegranate peel extract (130 gr daily) was done by oral gavage solution method, 20 to 30 minutes before breakfast meal for eight weeks. Blood samples were taken to analyze Insulin resistance index levels and lipid profile and the data were analyzed by descriptive statistics and ANOVA.

Results: The results showed that aerobic training (AT) reduced body weight, insulin and insulin sensitivity, and pomegranate peel extract had no significant effect. However, none of the interventions had a significant effect on plasma glucose.

Conclusion: Exercise alone cannot reduce glucose in obese people, and in order to provide general health in these people, regular exercise programs along with nutritional controls should be introduced to avoid the consumption of simple carbohydrates regardless of physical activity status.

Key words: training, pomergranate peel extract, obese
Special training improve straight-right and jab endurance time in male boxers

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Introduction: Straight-right and jab motions commonly used during box sport. The aim of this study was evaluate the effect of special training protocol on straight-right and jab endurance time in male boxers.

Methods: 24 male boxers (18-25 years) were volunteered to participate in the present study. The subjects were randomly placed into two equal sized groups (Control group versus Experimental group). In the experimental group, special training was including both muscular strength and power training protocols for glenuhumoral flexor muscles. The training protocol was done during 8-week. Participants in the control group done their normal daily training protocols.

Results: There was not any significant difference between both control (48±8 s) and experimental (58±6 s) groups during pre-test (p>0.05). However, the Straight-right and jab endurance time in the experimental group (62±8 s) was greater than that control group (55±6 kg) during post-test (p=0.044).

Conclusion: The training protocol that was used in the present study could improve muscular endurance time than that traditional training protocol.

Keywords: Endurance time, Special training, Box
The Effect of Active Recovery VS Baking Soda on Blood Lactate Clearance after Simulated Competition in Young Wrestling

Aim: Active recovery has proven an effective means in reducing blood lactate concentration after various activities, yet its effects on performance are less clear. The aim of this study was the effectiveness of active recovery and sodium bicarbonate to removal of lactic acid after a wrestling match simulation (WMS) and Specific Wrestling Fitness Test (SWFT).

Material and Methods: The sample consists of 8 male wrestlers aged 21.12±3.36 years, body height 170.54 ±5.58 cm, body weight 75.32 ±7.56 kg, body mass index 25.12 ±2.55 kg/m², percentage of body fat 14.80 ±5.48 %. The examinees were highly trained wrestlers, with the training experience of 5.56 ±2.56 years, and a weekly number of training 7.00 ±2.00. All examinees voluntarily participated in the research. In this study, the WMS with a duration of 5 minutes was used as well as SWFT.

Results: There are significant differences on all lactate levels between the active recovery and sodium bicarbonate variables during WMS and SWFT. In all measurements, lactate levels were significantly higher (p<0.001) when athletes used sodium bicarbonate intake versus active recovery.

Conclusions: Overall results in this research suggest that levels of lactic acid were significantly lower when athletes used active recovery versus sodium bicarbonate intake this may be due to the difference in effectiveness of the aerobic system during active recovery and the system in which sodium bicarbonate removes the excess hydrogen ions.
The effect of an acute resistance training with 2 loading patterns (double-pyramid, reverse step) on some anti-oxidant markers in judokas

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Purpose: Considering the role of resistance training on athletes preparation, the loading patterns on improvement of training achievement have got more attentions recently. So the purpose of this study was to evaluate the effect of 12 weeks of resistance training with 2 loading patterns (double-pyramid, reverse step) on some anti-oxidant markers in judokas.

Methodology: 36 young healthy male judokas were randomly assigned to double-pyramid (n=12), reverse step (n=12) and control group (n=12). The exercise training consisted of 12 weeks, 3 sessions per week in both groups as mentioned above. Before, after and 24 hours after the last training session blood samples were collected. Data analyzed using repeated measure anova with bonferroni post hoc test.

Results: The results indicated that an acute resistance training with 2 loading patterns (double-pyramid, reverse step) has significance effect on total anti-oxidant capacity and plasma glutathione peroxidase quantity in judokas (p< 0.05).

Conclusion: Despite the fact that after the intensive exercise free radicals increase in body and cause cellular damages, it is believed that moderate and regular training can improve the anti-oxidant capacity and reduce free radicals which have been produced in body and can control cellular damages. But there are less information about the effects of resistance training on plasma anti-oxidant variations and the inconsistent about that. So due to the importance of resistance training on physical fitness and the differences on studies and lack of enough information about that, it seems more studies are needed.

Keywords: resistance training, anti-oxidant situation, judoka.
The effect of eight weeks of resistance and plyometric training on immunoglobulin A changes in soccer men

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Purpose: Regular and proper sports activities increase immune and reduce the immune problems caused by a heavy exercise session. The purpose of this study was to investigate the effect of eight weeks of resistance and plyometric training on immunoglobulin A changes in soccer men.

Methodology: This semi-experimental study was performed in pre-test and post-test in three groups. The statistical sample of this research was included 45 Ardebil footballers. Subjects were randomly divided into 3 groups (resistance, plyometric and control). The movements of the circular resistance exercises included: foot press, chest press, extension of the shin, head, back of the arm, squat, front of the arm. But the movements of the plyometric exercises include skating, ski jumping, jumping to the sides, jumping using the box, jumping horizontally, jumping sideways from the obstacle. Paired t-test was used to compare the pre-test and post-test results in the groups. Also, the results of the three groups were compared using one-way ANOVA and post hoc test at alpha level less than 0.05.

Result: In-group outcomes of the present study showed that the implementation of the weeks of resistance training and plyometric results in significant changes in immunoglobulin A levels. The results of post hoc test (LSD) showed a significant difference between the control, the plyometric and the resistance groups, but there was no significant difference between the resistance group and the plyometric group.

Conclusion: Regarding the results of this study, the performance of the resistance and plyometric activity due to the pressure exerted by the training on the body and the reduction of immunoglobulin A due to damage and inflammation and the production of free radicals.

Keyword: Resistance training, plyometric, IgA.
The Effect of 10-Weeks Endurance Training on Blood Pressure and Nitric Oxide Levels in hypertensive elderly men

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Background: The aging process drastically reduces muscle mass, strength and power, decreasing the capacity to perform the activities of daily living. Hypertension is a modifiable risk factor for cardiovascular morbidity, with 68% prevalence in elderly persons (1). The purpose of the present study was to identify the variability of blood pressure and Nitric Oxide response to a 10-week Endurance training program in hypertensive elderly men.

Methods: In this research, eighteen untrained hypertensive elderly men (age: 66.87±2.07, BMI=27.94±3.71 mean±SD) participated and divided in to control (n=9) and endurance training (n=9) groups randomly. The training program consisted of 10 weeks of endurance training with 50-75% maximum heart rate. Study variables were measured and recorded before and 48 hours after the 10 weeks exercise. Dependent t-test and independent t-test were used for comparison within the group and between groups (p <0.05).

Results: The results revealed that 10 weeks of endurance training had a significant effect on nitric oxide levels (P=0.01) and systolic and diastolic blood pressure (P=0.001, P=0.02) in hypertensive elderly men.

Conclusion: According to the results of this study, Ten weeks endurance training with present study characteristics can reduce both systolic and diastolic hypotension and increase plasma nitric oxide levels, and therefore is recommended for prevention of cardiovascular diseases, atherosclerosis, and hypertension in hypertensive elderly men(2).

Keywords: Endurance Training, Blood Pressure, Nitric Oxide, Hypertension

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