

## Does Amateur Boxing Leads to Chronic Attentional Disorders?

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### **Abstract**

Boxing is one of the organized high-contact sports that requires purposeful punches to the head and body of the opponent in both amateur and professional levels, so traumatic head injury in boxers isn't impossible. In this type of injury, though intact cognitive functions, it is possible that total cognitive beneficiary become impaired as a result of distractibility, imperfect concentration, and aftermath fatigue. Thus, purpose of this study was to investigate attentional disorders in amateur boxing. Subjects of the study were 30 male experienced amateur boxers (more than 4 years background, age= 24±3.1) as experimental group, and 30 male novice amateur boxers (less than 1 year background, age=25±4.2) and 30 male 400 and 800 meter runners (age= 24±2.7) as control groups. We used DAUF continuous attention test to assess attentional component. In order to data analyzing was used MANOVA in the significance level of 0.05. Findings showed that in none of variables there were significant difference between groups ( $P>0.05$ ), meaning that amateur boxing periods even longer than 4 years doesn't lead to attentional disorders. Based on our findings, it is concluded that intensity of punches in amateur boxing doesn't reach to threshold that lead to brain damage at least in regions which control visual attention.

### **Keywords**

amateur boxing, attentional disorders, brain injury, chronic, concentration.

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## The Effect of Two Types of Exercise (Endurance and Resistance) on Attention and Brain Derived Neurotropic Factor Levels in Sedentary Students

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### Abstract

The vital role of exercise in many aspects of daily life and somewhat cognitive functions are acknowledged but a point that has recently gained researchers' attention is to investigate the effect of different types of exercises on cognitive functions and the mediating mechanisms of this effect. The aim of this study was to determine the effect of two types of endurance and resistance exercises on the levels of attention and BDNF of sedentary students. Therefore, 46 sedentary students from University of Tehran (mean age  $24.3 \pm 1.8$  yr) were assigned to three groups: endurance, resistance and control after the Stroop pretest. After blood samples had been collected, the subjects continued their exercise protocol for five weeks. Finally, at least 48 hours after the last session, the Stroop test was performed and blood samples were collected in order to eliminate the temporary effects of exercises. For data analysis, Kolmogorov–Smirnov test, paired sample t test, one-way ANOVA, MANOVA test, Dunnett's T3 post hoc test and Pearson correlation coefficient test were used ( $P \leq 0.05$ ). Results showed a significant improvement in the response time of Stroop test in both endurance and resistance groups while expression of BDNF significantly increased only in endurance group ( $P < 0.05$ ). The control group showed no improvement in any variables. In addition, there was no significant difference between the effect of two types of exercise on the response time of the Stroop test and expression of BDNF ( $P > 0.05$ ). There was no significant correlation between the variations of response time of the Stroop test and expression of BDNF ( $P > 0.05$ ). Finally, this research indicated that exercise can improve cognitive functions, but there was no significant difference between endurance and resistance exercises in response to this question that which activity was more useful.

### Keywords

attention, endurance exercise, neurotropic, resistance exercise, sedentary.

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## The Effect of Neurofeedback Training on Dynamic Balance of Young Men

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### **Abstract**

Physical balance is one of the important factors in daily sport activities. Dynamic balance helps maintain the balance of those forces imposed on body in sports and an increase in this balance improves motor and sport performance. The aim of this study was to determine the effects of neurofeedback training on dynamic balance of young men. 24 male undergraduate students voluntarily participated in this study and were involved in a double-blind design including control and experimental groups. The experimental group participated in neurofeedback training including the inhibition of brainwaves of 4-7 Hz and the reinforcement of brainwaves of 15-18 Hz at O1-O2 regions of the hindbrain for 10 sessions and 30 minutes per session. Participants in the control group were exposed to the same condition, but instead they were provided with sham feedback. EEG and dynamic balance tests were administered before, at the end of the fifth and tenth sessions of training for both groups. The results indicated that dynamic balance significantly improved in the fifth session and posttest. The findings demonstrate that neurofeedback training can enhance dynamic balance of young men. It is suggested that this training should be used to increase dynamic balance of athletes.

### **Keywords**

*beta rhythm, dynamic balance, electroencephalography, occipital lobe, theta rhythm.*

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## Comparing the Effectiveness of Water-Based Exercises and Yoga on Memory and Dynamic Balance of Elder People

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### Abstract

The purpose of this study is to investigate the effect of physical activity on memory and dynamic balance of elder people. Subjects (n=15) were selected as volunteers. The intervention was performed in an eighteen session period, three times a week (each session, 45 minutes). Yoga training was performed for mental relaxation. Wexler test was performed for memory evaluation. Seat up test was used to test the dynamic balance. The results suggested that water-based exercises and Yoga protocol have had a positive significant effect on memory (P=0.03) and dynamic balance. It was concluded that a selected physical activity program, especially water-based exercises has less potential for making people injured.

### Keywords

dynamic balance, memory, water- based exercises, yoga.

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## The Effect of Attentional Instruction on Table Tennis Players' Performance under Pressure

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### ***Abstract***

The aim of the present study was to evaluate the effect of pressure and attentional instruction on table tennis players' performance. For this purpose, 16 table tennis players were tested in 4 conditions with different attentional instructions and pressure conditions. The test included a table tennis task: the ball color signified the target where the ball had to be hit and the player had to perform topspin drive against backspin balls that were thrown by the machine. Attentional instructions were different in task-irrelevant and task-relevant cues. Pressure conditions were manipulated through a competitive ranking and money prize. Participants' performances were assessed through accuracy in hitting definite targets and verbal reaction time to attentional instructions. Data were analyzed by two-factorial ANOVA with repeated measures for each variable. The results showed no significant difference in performance in different phases of the test ( $P>0.5$ ). The only significant difference was related to the main effect of pressure on verbal reaction time, that is to say verbal reaction time increased under higher pressure ( $P<0.5$ ). In total, the results indicated that under pressure, regardless of the type of attentional instruction, performance efficiency decreased.

### ***Keywords***

attentional instruction, choking, motor performance, pressure condition, relevant cues.

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## The Reliability and Validity of Balance Performance Clinical Tests in Hearing Impaired Persons with Moderate Hearing Level

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### **Abstract**

The aim of the present study was to examine the reliability and validity of balance performance clinical tests for hearing impaired persons with moderate hearing level. In this descriptive-survey study with repeated measures, 220 hearing impaired subjects with normal intelligence and moderate hearing level were selected as the statistical sample from all deaf and hearing impaired subjects who had participated in national competitions in Arak city. The scale (3) of Cattell Culture Fair Intelligence Test and motor performance clinical tests were used to collect the data. After checking the data normality, data were analyzed with intra-class and interclass correlation coefficients and factor analysis tests. The results revealed that finger-to-noise test with dominant hand (ICC=0.79), and with non-dominant hand (ICC=0.81), time-up and go test (ICC=0.76), and tandem gait test (ICC=0.87) were reliable. But, the dominant and non-dominant single leg stance tests with open and closed eyes were not reliable (ICC<0.75). The validity of balance performance clinical tests was confirmed with factor analysis test. Overall, the finger-to-noise with dominant and non-dominant hand, the time-up and go, and the tandem gait tests were the most stable tests to assess balance and coordination of hearing impaired participants.

### **Keywords**

*balance, clinical tests, hearing impaired persons, reliability, validity.*

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## The Effect of a Period of Regular Exercise Activity on the Improvement of Adaptive Behavior in Educable Mentally Retarded Students

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### **Abstract**

Psychological findings show that a lower IQ score than the normal level is not enough to recognize someone as mentally retarded. In addition they have visible and specific difficulties in their adaptive behaviors. Research on adaptive behaviors is useful for those with specific needs and if mentally retarded children want to adapt themselves to social life, they should improve their adaptive behaviors. The current study aimed at determining the effect of a period of regular exercise activity on the improvement of adaptive behavior in 9-15-year-old educable mentally retarded students in Lordegan city. From 156 educable mentally retarded students, 28 students were selected randomly and divided into two groups of experimental (7 boys and 7 girls) and control (7 boys and 7 girls). Vinland adaptive behavior Scale (1965) was used as the pretest. Then, the experimental group took part in a period of exercise activity as an intervention program for 2 months, 3 sessions every week, 45 minutes per session. The data were analyzed by covariance using SPSS software ( $P < 0.05$ ). The results showed a significant difference between the performance of the two groups in adaptive behavior and sub-skills of socialization, communication, locomotion, dressing self-help, general self-help and eating self-help ( $P < 0.05$ ) while there was no significant difference in sub-skills of occupation and self-direction which showed that a period of regular exercise activity had an effect on the improvement of some sub-skills of adaptive behavior in experimental group. This approach can be used in rehabilitation and instruction of mentally retarded children.

### **Keywords**

adaptive behavior, educable, exercise activity, mentally retarded, students.

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## The Effect of Different Sport Stress Coping Styles on Sources of Acute Stress and Salivary Cortisol in Wrestlers

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### **Abstract**

Coping style is one of the substantial factors influencing sport achievements in sport competitions. The main aim of the present study was to examine the effect of sport stress coping styles on sources of acute stress and salivary cortisol in wrestlers. With regard to the criteria and variables of this study, 30 out of 270 active national wrestlers participated according to the cut-off point of coping styles questionnaire in two approach and avoidant coping groups. The participants were asked to complete Sources of wrestling acute stress questionnaire and to collect the saliva to measure salivary cortisol levels. Multivariate analysis of variance results indicated that sources of acute stress were significantly higher in approach coping wrestlers than avoidant coping group ( $P=0.001$ ). Also, salivary cortisol level was significantly lower in avoidant coping group than the approach coping group ( $P=0.012$ ). According to the results, different stress coping styles influenced perceived stress of acute stress and salivary cortisol levels in wrestlers. The findings of this study can be used in instruction of different sport stress coping styles in wrestlers in order to reduce their mental pressure in the competitions.

### **Keywords**

acute stress, coping, salivary cortisol, source of stress, wrestlers.

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