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# PROCEEDINGS МАТЕРИАЛЫ



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EPAS STAVROPOLIS

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The most important causes of those injuries were using wrong technique in practicing, using unsafe machines, absence of application on training, randomly training, early return to training before completely curable wrong, bad behavior from players, flexibility training is not enough, techniques in the training and using unsuitable training programs

The study recommended using enough time for flexibility training, and the medical examination to players by the specialist and also treatment as belong to the nature of muscular part of the injury.

### 282. Physical activity and aerobic capacity among medical students

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Physical activity is undoubtedly one of the most important components of healthy lifestyle. Physical inactivity is identified as an important public health concern for youth. Movement is an indispensable part of any intellectual work. Physical activity, physical performance at young people is related to adult health habits.

**Purpose.** The aim of study was to evaluate physical activity and aerobic capacity of medical students.

**Methods.** Study group comprised of 140 female medical students of Vilnius University Medical Faculty, age range 19–26 years (mean 21,77, SD 2,51). The data about physical activity in daily life was gathered by questionnaire. The spirometry was made using cardiopulmonary diagnostic system  $V_{max}$  to evaluate the complex aerobic capacity. The anaerobic threshold was determined from relation of  $VCO_2$  and  $VO_2$  (V-slope method) according  $V_{max}$  program's algorithm.

**Results.** At time of interview only 40 (28,6%) students have physical activities on a regular basis. The main factor preventing the respondents from participation on a regular basis is the lack of free time (according to 51,6% of respondents), the lack of desire or laziness (according to 16% of respondents). Respondents were more physical active at school time. Participation in physical activity declined at university.

The data of our study showed that female's aerobic capacity functional index – maximal oxygen uptake – was  $81,03 \pm 11,14\%$  of foresaw by Jones reference.

**Conclusion.** Physical activity of young people is insufficient. Although medical students are taught the benefits of regular physical activity they stress difficulty finding the time to participate in physical activities. It is important to educate young people to have physical activities on a regular basis. Young people have to train aerobic endurance, to increase anaerobic threshold in order to maintain and to increase functional and physical capacity.

### 283. Peak cardiorespiratory responses during maximal exercise in individuals with chronic spinal cord injury

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**Purpose.** The aim of the study was to determine response of cardiorespiratory system during maximal exercise and relationship with physical and social activity in individuals with chronic spinal cord injury (SCI).

**Methods.** Study group comprised of 70 males, age range 18–50 years, median 33 years, injury level from C<sub>5</sub> to L<sub>2</sub>, who were examined at Physical medicine and rehabilitation centre of Vilnius University Hospital Santariskiu Klinikos. The time after spinal cord injury was 1–20 years. We evaluated  $VO_{2peak}$ , peak heart rate, pulmonary ventilation and the data of physical and social activity in daily life. The cardiopulmonary diagnostic system  $V_{max}$  of the US "Sensor Medics Corporation" was used for examination. The data of physical and social activity in daily life was gathered by questionnaires. For quality of life measurement we used Ferrans and Powers Quality of Life Index (QLI).

**Results.** SCI patients with additional physical training and social activity in daily life reached higher  $VO_{2peak}$  than SCI patients with routine activity. The QLI of trained tetra – and paraplegics was higher than untrained.

**Conclusion.** Individuals with SCI have low aerobic capacity, which is related to lesion level and daily activity level. The routine daily life activities of tetra – and paraplegic individuals without additional physical training are not intense enough to maintain a satisfactory level of physical fitness. The social and physical activity can improve the quality of life of para – and tetraplegics.

### 284. A comparison of anthropometric characteristics and rate of physical activity between Greek and foreign grade school children

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The purpose of this study was to compare various anthropometric characteristics of grade school children according to ethnicity and gender. Another purpose was to assess differences in rate of physical activity on the basis of ethnicity and gender as well as differences in relation to body mass index through the use of a pedometer (Omron walking style II) and a questionnaire assessing physical activity. The sample consisted of 375 students (184 girls and 191 boys, 270 Greek and 105 foreign) aged 11–13, enrolled at various Greek primary schools. T-test for independent groups, one-way ANOVA, as well as descriptive statistics were employed for the analysis of the data. The results did not reveal significant differences

between genders for height, weight and body mass index, while significant differences were observed between ethnicities, with the Greek students having higher values. Also, results did not reveal significant differences between ethnicities in the rate of physical activity, although foreign students had a higher rate. It is noteworthy that Greek students were found to be more active than foreign students during the weekends. Statistically significant differences were detected between genders, where boys appeared to be more physically active than girls. No significant differences were observed in the rate of physical activity among students when they were divided in three groups according to their body mass. Finally, sport participation was found to be independent of body mass index. It was concluded that obesity was probably due to nutrition habits and not to physical inactivity.

### 285. The effect on physical activity in the bone mass and fitness in middle aged and elderly women

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We know that the highest level of bone mass is achieved in males and females during adulthood under the effect of sex hormones.

**Aim:** The main aim of this study was to examine the role of exercise as a means of secondary prevention of osteoporosis and related injuries by studying its effect on bone mass and the physical condition of middle and third age females.

**Population-Method:** A sample of 30 healthy post-menopause females aged 55-65, which had never received osteoporosis treatment, were divided into two groups of 15. Height and weight were measured, the body mass index was determined, the waist-hip analogy was measured and the sum of four skin folds was taken (triceps, infrascapular, suprilliac and thigh). The two groups underwent a bone density check with the method of double energy X-rays absorption. The study group underwent a systematic six-month program of supervised exercise, four times a week. (Two weight-lift sessions and two aerobics sessions per week).

The females in the control group did not take any exercise. All women received 1000 mg of calcium and 800 IU of vitamin D daily so as to ensure dietary sufficiency. Upon completion of the exercise programs the women were measured for bone mass in the same laboratory and were evaluated for t-score achieved. They were also evaluated for exercise time in the cardiac tolerance test, flexibility and muscle strength.

**Results:** In the statistic analysis there were significant statistic differences among all factors measured between the study group and the control group.

**Conclusion:** Exercise is the best way to maintain physical condition indirectly to prevent injuries in the third age. Its effect on bone mass has not been established yet. We need more studies to determine whether it can be useful as a secondary prevention method.

### 286. Provision of "places of exercise" to elderly people - A case using vacant rooms in a primary school in Japan

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**Introduction.** In Japan, the population has been increasing. The number of births has been decreasing while the percentage of the elderly in the total population has been rapidly increasing. Recently, due to this decrease in the number of children, rooms not used in primary schools have become conspicuous. Each municipality in Japan is considering the effective utilization of such vacant rooms. A primary school in Kanagawa Prefecture remodelled vacant rooms into activity places for the elderly and established a bathroom there. We report a bathing exercise class given in this bathroom.

**Japanese bathing style.** In Japan, people fill a bathtub with water at 38°C-40°C and soak in the water, generally for 10-15 min. In the warm water, people receive physical support provided by the resistance of the water. Due to heating effects, blood circulation improves, and the muscles and tendons relax. In addition, buoyancy reduces the physical stresses on the body such as the joints. Therefore, an exercise class using these effects of bathing as a daily habit was given.

**Place of exercise.** In Primary School H in Kanagawa Prefecture in Japan, vacant rooms resulting from a decrease in students are used as a community plaza for the elderly. In vacant rooms on the first floor, there is an office, saloon equipped with a television and sofas, and a large bathtub, which was constructed by remodelling the 2nd floor, 2 vacant rooms are used for culture schools such as computer, calligraphy, flower arrangement, haiku classes. The place of exercise is the large bathtub on the first floor. The size of this bathtub (length×width×depth: 8,2×2,2×0,6 m) is about 5 times that of the general home bathtub (1,2×0,7×0,5 m), allowing relaxation by bathing even if the arms and feet are stretched to maximum, which is impossible in general home bathtub. Many elderly people visit this institution to enjoy relaxation by bathing.

**Muscle strength training using water resistance.** An exercise class using this large bathtub is regularly held in each season. Participants attend a lecture on health and bathing (30 min - 1 hour) and subsequently perform resistance training using water pressure under the guidance of instructors. Before and after bathing, water pressure is measured, water is supplemented, and exercise is initiated. The exercise time is about 15-20 min. Participants are often in their 60s-80s. For exercise, the water temperature is set at 37 °C.

**Conclusion.** We reported a case of "a place of exercise" for the elderly established by effectively using vacant rooms in a primary school in Japan. Elderly people appeared to be looking forward to not only exercising but also socializing with participants. In the future, valuable data should be collected to increase participants' motivation.



This is to certify that the abstracts "A Comparison Of Anthropometric Characteristics And Rate Of Physical Activity Between Greek And Foreign Grade School Children" By Kampitsis C., Gerani C., Harahousou Y., Maria Vairli were presented by Christos Kampitsis at the III International Congress "People, Sport and Health".

Executive Director of the  
III International Congress "People, Sport and Health"  
Mr. Andrey Yushin



ΑΚΡΙΒΕΣ ΦΩΤΟΑΝΤΙΓΡΑΦΟ  
από το επιδειχθέν πρωτότυπο

Σέρρες, 23/4/2007

Ο/Η ΓΡΑΜΜΑΤΕΑΣ

ΔΗΜΗΤΡΑ ΓΚΙΜΠΙΡΙΘΗ-  
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