“Antropomotoryka” – “Kinesiology” to Advance Despite all Obstacles
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The aim of the work. The aim of this work is to examine the state and structure of youth motor fitness from the Upper Silesia and Nara regions (taking the three-factor Baltes’s model into consideration).

Material and methods. The material was gathered in 2000, within the framework of international research work called “Motorische Entwicklung in der Lebensspanne”, which was coordinated by the Universities of Heidelberg and Nara. The research was carried out among 1873 boys and girls from the Upper Silesia region, those between the ages of 10–17 and also among 1865 of their equals from Nara region. The empirical material was elaborated by the methods of descriptive statistics. Profiles of motor fitness were defined and the analysis of variance was put into practice with double classification, completed with the post hoc analysis (the RIR Tukey test).

Results. Motor profiles show that students from the Nara region surpass their equals from the Upper Silesia region in all the motor abilities. Japan–Poland cultural affiliation was indeed a factor that differentiated girls and boys from the Upper Silesia and Nara regions in all the motor tests. Their age had an essential statistical influence on results concerning speed, explosive strength, endurance, coordination under time pressure and flexibility amongst both populations of girls and boys that were examined. Japanese boys achieved better scores in speed, explosive strength, endurance, coordination under pressure for precision and coordination under time pressure in all age groups. Girls from the Upper Silesia region achieved essentially better results than their equals from the Nara region only in speed at the ages of 16 and 17, additionally flexibility at the age of 17.

Introduction. Presented paper is the third part of a series study concerning the sexual dimorphism of motor activities conditioned by strength and speed. Striving for simplicity in presentation of relationships between function and structure the analysis was limited to the basic somatic traits as the body mass and height. The review of many reports devoted the evaluation of strength abilities of men and women determined by their body size as well as anatomic condition causing the weaker women’s results in runs, jumps and throws was done. Aim. The basic objective of this study is to recognize the relations between the strength-speed tasks performance and the body build, first of all with reference to the sexual differences with simultaneous consideration of the weight of used equipment and the position (in throws and pushes) by their execution. Additionally to determine the diagnostic values of the indices which are designed for evaluation of the strength-speed abilities.

Sample and methods. Data used were several somatic and motor measures of 98 men and 79 women, students of University School of Physical Education in Wroclaw, which were presented in first and second part of this study, where also description of motor exercises and calculation of indices was done. Results of statistical data analysis were useful in determination of sexual differences. Three methods by Mollison, Fisher and Penrose were applied. Spearman correlation analysis led to elimination of Mollison’s method as being the least credible. The remaining two methods were completed by percentage proportion of men and women scores.

Results. The greatest difference in throw distances were find for one-hand throw of 1 kg ball. Such low scores in women are caused by genetic factors which manifest in anatomic features making difficult to obtain good results in throws. Distinct advantage of men was also noted in ball pushes from in front of chest and from side position. Taking into account the correlations between results of throws and pushes, the gender’s most representative exercises were found by calculation of average values. The highest assessment get exercises performed with the heaviest 3 kg ball. Amid the throw positions the pushes from a chest took top places while forward throws were located among the last places. In all depictions, closer connections were found in women, who preferred the backwards throws. In men, both pushes were preferred, while push from chest occurred convenient for both sexes. It turned out that the scores were influenced moderately by somatic traits. The greater body height was
Conductive to gain better results of long jump in women and of ball pushes from in front of chest in men. Greater muscularity, connected with bigger body mass, influenced the distance gained in long jump. An increased ability in persons from higher age categories was observed in pushes from in front of chest and forward throws. Comparison of correlation coefficients made possible to evaluate their efficacy. More efficient were indices of spurt force with the highest connections in women. Most valuable exercise was ball push from in front of chest performed with the heaviest ball.

**Conclusion.** From among the used methods of determination of between gender differences, the method of Fisher’s discrimination coefficients seems to be the most reliable. In evaluation of the strength-speed abilities in women the one-hand throws of ball has not to be used because of women’s anatomic conditions. The most valuable in motor ability assessment are exercises with use of the heaviest balls. In women profitable are throws from both positions, while in men such are the pushes. The universal from that point of view for both sexes is a push from in front of chest.

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**Włodzimierz Starosta, Tadeusz Rynkiewicz**

Lateral Differentiation of Level of Ability to Maintain Static Balance of Persons Aged 16–19 Depending on the Various Visual Information

**Introduction.** The ability to maintain balance is one of the crucially important components of the movement performance of a human being. It occupies a leading position among co-ordination abilities. The ability was the subject of numerous research works of many authors, however only a small part of them focused on investigating its level in the changeable conditions and lateral differentiation. Hence, the aim of the research was to: 1. Define the level of the ability to maintain static balance in changeable conditions. 2. Search for the lateral differentiation of the level of the ability depending on the various visual information.

**Material and methods.** The research involved 52 male subjects aged 16–19. In order to assess the level of the ability to maintain balance the posturographic method was applied. The tested individuals performed 3 tasks on a posture-graph in a standing position with eyes opened, closed and in conditions of a feedback. Each of the tasks lasted 32s.

**Results.** The most significant changes in the stability of the of the body position in a longer time span, produced the switch off of the visual control. This indicates a considerable deterioration in the precision of the functioning of the central nervous system when one of the main senses is excluded, which was exhibited by the lowering of the level of spatial orientation and a less accurate differentiation of movements. This affected the lowering of the level of the ability to maintain static balance. A similar tendency was observed by other authors. Those tested more frequently deflected the General Centre of Body Weight (OSC) in the positions: „forward-left” and „backward-right.” It is possible that the asymmetrical loading of the foot along the diagonal figure, whose edges are formed by the external parts of both feet, is typical for a human being. The biggest asymmetry was observed when executing the task with closed eyes. A considerably small asymmetry in the body position was revealed in the task with the „feedback”. It is most likely that those tested, when observing the dislocation of the centre of gravity of their body on the monitor, had more possibilities to correct its position, that is, to place it in the central part of the screen.

**Conclusions:** (1) Changes in the conditions in which measurements of the level of the ability to maintain static balance, that is, without eye control and during “feedback” were taken, considerably lowered the results. (2) Smaller deflections of the OSC were recorded in the frontal plane rather than sagittal plane. (3) The lowest level of the ability to maintain static balance was observed when performing the task with eyes closed. (4) The asymmetry of the ability to maintain static balance was exhibited in the diagonal displacement of the OSC in relation to the longitudinal axis of their body, which resulted in putting more load on the front part of the left foot or on the back part of the right foot by those who were tested.

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**Wacław Mirek, Edward Mleczko, Jerzy Januszewski**

Motor Activity of Cracow Students and Their Physical Fitness

**The aim of the work.** In their own research, the authors attempted to define interrelation between the level of motor activity of Cracow students and their somatic, functional and motor development. The other aim of the research was to recognize the influence that different forms of motor activities exert on certain compounds of physical fitness referring to the health (H-RF).
Material and methods. The basis of the article formed the data and sources collected through the research, performed in eight public universities in Cracow. In total, the results of tests conducted on 3453 first-year students (1744 women and 1709 men) were taken into account. Basic statistical characteristics were calculated in groups formed depending on the motor activity level of subjects (high, intermediate, low). Additionally 152 participants from University School of Physical Education and University of Technology were under continuous observation. Differences between distinguished groups were examined with the help of variance. The post hoc NIR test was the tool used to assess statistical significance.

Results. Analysis of data collected among the first-year students proves that increase in motor activity has a positive effect on functional and motor development level of participants. This statement refers especially to men, in spite of assumption that the results of previous pedagogical work are noticeable before starting regular university classes. The fact that both – direction and range of physical fitness development – in high schools depend on quality and quantity of obligatory gym classes in programme of studies, helps the authors to discover inversely proportional dependence between the level of somatic and functional features at the beginning of the research and the dynamics of its later development.

Conclusions. Motor activity plays an important role in students’ physical fitness development, especially when it is examined from health-related point of view. Obligatory gym classes are among the most important factors determining improvement in that sphere. That is why beyond doubt gym classes should be obligatory for all university students.

Jadwiga Szymura, Magdalena Więcek, Jerzy Cempla, Marcin Maciejczyk, Joanna Gradek, Marek Bawelski

The Level of Anaerobic Capacity in 9–10 Years Old Girls with Excessive Level of Body Fat

The aim of the study was to determine the level of anaerobic capacity in overfed girls.

Material and methods. The study was conducted on 41 girls (20 girls with excessive level of body fat (%) and 21 with normal level of body fat). The girls performed the Force-velocity test by the conception of Vandewalle et al. (1985).

Results and conclusions. Total values of MAP [W] were higher in group of overfed girls but relative to body mass values of MAP were significantly lower in these group. There was no difference between groups with relation to free fat mass values of MAP. Total and relative to free fat mass values of optimal braking force (Fopt) was similar in both groups, but the girls with excessive level of body fat was significantly lower Fopt in relative to body mass (23%). In both groups, maximal anaerobic power girls have achieved in similar time (tuz) and at approximated rhythm of pedalling. The results indicate that the anaerobic capacity estimated by the relative to body mass values of MAP was significantly lower in girls with excessive level of body fat. It shows that overfed girls have lower abilities to perform short, anaerobic supra maximal efforts.

Irena Momola

Morphological Advancement and Motor Skills Level of Boys Practicing Various Sport Disciplines

The aim of the work. To show the differences in body build and motor skills level of boys practicing Team Sport Games (volleyball and football) and winter sports (speed skating, ice hockey) as well as to specify the differences in studied values of motor parameters between examined boys and their peers from Cracow and peers participating in the country-wide test. Mutual relationship between studied parameters was also characterized.

Material and methods. The research was carried out among 118 boys at the age of 11 coming from Sanok and its district. Tested boys were practicing various sport disciplines in clubs like: Sanoczanka Sanok, Górnik Sanok, Gimmball Tarnawa Dolna, Młodzieżowy Klub Hokejowy Sanok, Stal Sanok and Komunalni Sanok at least for one year. The research, to which Eurofit test was used (Physical Fitness European Test), was carried out in 2006 and 2007. During the research not only skin and fat folds thickness, body height and weight were measured but also physical fitness was tested. Statistic analysis, to which measured results were put, included variable singe-factor analysis, rectilinear correlation analysis and main components analysis.

Results and conclusions. Speed skaters, hockey players, volleyball players and football players body height and weight remains standard, however skaters, hockey players, volleyball players and football players physical fitness varied. Speed skaters were the only group, which scored low level in general balance, whereas hockey and volleyball players flexibility was evaluated as high. In most physical fitness test boys, who took part in research, scored slightly higher than peers from Cracow and those participating in country-wide test.
The author points to two bases of all sensorimotor performances efficacy: physical efficiency and the mode of information processing (co-ordination abilities). The latter is decisive of the efficacy in controlling the power flows in a living organism and it is just this aspect that the author has concentrated upon. Discussed is the problem of enhancing the efficiency of all sensorimotor performances resulting from automation. Increased efficiency results from decreased necessity of conscious information processing which needs making use of feedback. Thus, such a process relieves some resources of short-term and working memories (in the author’s opinion they make separate systems of memory) which as a matter of fact are rather limited. Consequently, the time necessary to perform an action grows shorter. The problem has been presented taking into account the structure of memory, the rules of general theory of systems and the Bernstein’s theory of movements’ construction. The author introduced a widened model of information processing which occurs in humans while performing a sensorimotor action. It has been proved that all the theories mentioned above might make solid basis for a coherent pattern of movements’ control, explaining the improvement of efficiency as due to automation. The problems of chunking, coding, priming and automation have been presented as a coherent system. There has been produced a general scheme of automation process as well as significant difference between the notions “exercisability” and “trainability”. The processes of automated movement control have been associated with psychological phenomena resulting from the Yerkes-Dodson Law (inverted U-hypothesis). The five-level model of movements’ construction has been proved to make solid basis for a coherent pattern of movements’ control. The achievements of other scholars may be inscribed into the pattern, too, even if they did not avail themselves of Bernstein’s attainments.

DISCUSSIONS

Wacław Petryński

It’s a Long Way to Philadelphia!

The article is designed as a brief presentation of a dark side of one of the best-known academic publications’ rankings. The author polemicizes with the stereotypic approach, which is not only typical for our opinion-forming environment, but also based on Polish sense of inferiority. Recognizing the danger that foreign patterns constitute to sciences of physical culture in Poland, he makes the reader familiar with Polish glorious traditions. He draws our attention to the fact, that there is the need for clamping down the overflow of information, which seems to be dangerous for the international academic research, by the consistent theory.

Józef Drabik

On the Trace of Rubbish and Commonplaces in Physical Culture Sciences on Habilitation Level

In the submitted text, the fragments from habilitation theses are quoted. The quotations are prepared hoping to point out the physical culture studies’ danger symptoms. According to this fact, the written text links to the state of the Rehabilitation, Physical Culture and Social Integrity Committee, April 28th 2005.

ANNOUNCEMENTS

Anatol Gierasiewicz, Edward Mleczko, Alla Danilenko, Włodzimierz Starosta


On October, 24–28 2007 under the reduced name: Health–2007 IV International symposium The East – Belarus – The West. Cooperation on problems of the formation and strengthening of health took place. The audience had the opportunity to listen to nine performances at four plenary sessions, about 100 research messages at six section sessions in conformity with two scientific directions: educational and prophylactics and rehabilitation. Among messages authors there were scientists from six areas of Belarus, eight regions of Russia, ten voivodeships of Poland, six provinces of Ukraine, as well as specialists from Lithuania and Latvia. The organization of this prestigious forum was a collective work of a team of scientist from Department of Improving
and Medical Physical Training of the Brest State University named after A.S. Pushkin (Belarus), partners from the Siberian State Space University named after academician M.F. Reshetnev, Krasnoyarsk State Medical Academy (Krasnoyarsk, Russia), Grodno State University named after J. Kupala (Belarus).

Włodzimierz Starosta, Jan Konarski

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