

**Matej Bel University in Banská Bystrica  
Faculty of arts**



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MORES  
FUTURUM

KATEDRA TELESNEJ VÝCHOVY A ŠPORTU



FILOZOFICKÁ FAKULTA  
Univerzita Mateja Bela v Banskej Bystrici



**Student scientific activity 2014  
Science of sport  
Proceeding of abstracts**

**Banská Bystrica 2014**

Matej Bel University in Banská Bystrica  
Fakulty of Arts  
Department of physical education and sport

Student scientific activity 2014  
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Proceeding of abstractcs

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# **SECTION STUDENTS**

# **VPLYV KONDIČNÉHO PROGRAMU NA ZMENY ÚROVNE SILOVÝCH SCHOPNOSTÍ V BIATLONE**

## **EFFECT OF APPLIED CONDITIONING PROGRAM CHANGES IN THE LEVEL OF STRENGTH ABILITIES IN BIATHLON**

**Jakub FENDEK**

**Filozofická Fakulta, Univerzita Mateja Bela, Banská Bystrica, Slovenská republika**

### **ABSTRACT**

FENDEK , Jakub : Effect of applied conditioning program changes in the level of strength abilities in biathlon . Matej Bel University in Banska Bystrica . Faculty of Arts , Department of Physical Education and Sports . Supervisor PaedDr . Bozena Paugschová , PhD .

The objective of this thesis was to ameliorate the training process of young biathletes competing in youth categories by means of a fitness program we have developed. By means of the testing battery we tested their performance. The testing passed before the beginning and after the achievement of a fitness program we have developed. The conditioning program endured two mesocycles. The results of the final tests indicated that the fitness program that we propose had its relevance and a positive influence on dynamic power needed to making the athletic performance in biathlon. Following the information that we received, we will continue to apply the fitness program that we designed to achieve a higher quality of young biathletes in next annual training cycle.

**Keywords :** biathlon , fitness, motor skills , power skills

# **MIESTO TURISTIKY V SPÔSOBE ŽIVOTA ŠTUDENTOV UNIVERZITY MATEJA BELA**

## **PLACE OF TOURISM IN LIFESTYLE OF STUDENTS OF MATEJ BEL UNIVERSITY**

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republika

### **ABSTRACT**

The goal of the study is to provide analysis about the place of tourism in lifestyle of students of Matej Bel University in Banská Bystrica. Target sample (n = 200, out of it 86 male and 114 female, age between 18 – 25 years) consisted of student of I. and II. level of university study in various study programs and specialisations of different faculties of Matej Bel University in Banská Bystrica. For discovering inevitable data for identification of tourism was used the method of standardised questionnaire. Identification of tourism was realised through quantitative and qualitative methods. The outcome of inquiry shows, that the community at Matej Bel University in Banská Bystrica spends its free time mostly actively (73,50%) and is interested in motion and sport activities. The activities, which dominates mostly by young people are tourism (52,00%), cycling (51,50%) and swimming (41,50%). By motion and sport activities dominates short term tourism (85,50%). After final analysis and evaluation we found out, that university population likes the most hiking (60,50%), through which they want to get to know the nature (33,50%), develop physical ability (19,00%) and stabilize the health (14,50%).

**Key words:** motion activities, tourism, living in nature, university population

# **RÝCHLOSŤ A ÚSPEŠNOSŤ STREĽBY V BIATLONE**

## **FAST AND SUCCESSFUL SHOOTING BIATHLON**

**Nikola Hurajtová**

**Filozofická fakulta, Univerzita Mateja Bela, Katedra telesnej výchovy a športu, Banská Bystrica, SR**

### **ABSTRACT**

The author of the study dealt with the analysis of the rate of fire and its impact on accuracy and success in biathlon, hence a total performance in endurance, fighter, and speed racing at the Winter Olympics in 2010 and 2014. To achieve the objective, we used the comparative method. The author analyzes the speed, endurance and Pursuit at the Winter Olympics in Vancouver in 2010 and Sochi in 2014. When evaluating the results, we focus on substantive analysis of the best biathlon SR. We note that compared to the Winter Olympics in Vancouver in Sochi shooting performances in improved rate of fire but it is likely that the next Winter Olympics will accelerate these times again. Proband pH is compared to the Winter Olympics in Vancouver and Sochi better shooting performance. Endurance Shot about 7 s firing lying down faster at danger achieve the same results. In Pursuit improved his time shooting position LAH on line 4 at danger of 3 Rifle performance has improved by 2 penalty laps. The accelerated speed race 8 with all the shooting options.

**Key words:** biathlon, shooting performance, speed, percentage



**VPLYV TRÉNINGU SUCHÉJ STREĽBY NA RÝCHLOSŤ STREĽBY V BIATLONE**  
**INFLUENCE OF DRY SHOOTING TRAINING ON SPEED OF SHOOTING AT**  
**BIATHLON**

**Lubomír LAPIN**

**Filozofická fakulta, Univerzita Mateja Bela, Banská Bystrica, Slovenská republika**

**ABSTRACT**

The aim of our research was based on the development and application of the model to assess the impact of dry shooting on speed shooting options sharp shooting. To achieve the objective, we used the following methods : comparative method and the method of teaching observation . The sample consisted of five probands. The results of our research have shown that the application of dry firing is justified and have positive impact on the speed of shooting . The probands at the total time items improved by : LL - 55.9 % at position prone and 55.3 % at standing , MK - 22.6 % at position prone and 24.4 % at standing , HL - 13 , 6% position prone and 51.3 % at standing , OK – 56,4% at position prone and 13.4% at standing, PK 2,2% at position prone and 26.5 % at position standing.

**Keywords :** biathlon , dry shooting , shooting rate.

**NÁCVIK A ZDOKONALOVANIE ÚTOČNEJ HERNEJ ČINNOSTI  
JEDNOTLIVCA – TEČOVANIE PUKU VO VEKOVEJ KATEGÓRII  
DORAST**

**REHEARSAL AND IMPROVEMENT IN ASSAULT GAME ACTION OF  
INDIVIDUAL – TOUCHING THE PUCK IN AGE CATEGORY OF  
SPRIGS**

**Lukáš Plešavský**

**Univerzita Mateja Bela, Filozofická fakulta, Katedra telesnej výchovy a športu, Banská  
Bystrica, Slovenská republika**

**Abstract**

The aim of this work on practical experience to create exercises and contribute to knowledge in the context of rehearsal and improving offensive game activities of individuals touched the puck and improve the level of gaming activities in the junior category in hockey. We have created exercises aimed at practicing and perfecting release a player with the puck appropriate age category. The next task is to verify these exercises in the training process.

**Key words:** ice hockey, touched the puck, striking gaming activities of an individual, drill book.

# **VPLYV PREDPLAVECKEJ PRÍPRAVY NA ZMENY PLAVECKÝCH ZRUČNOSTÍ DETÍ**

## **THE IMPACT OF THE SWIMMING TRAINING AT THE CHANGES SWIMMING SKILLS PRESCHOOL AGE CHILDREN**

**Marek Polomský**

**Katedra telesnej výchovy a športu, Filozofická fakulta, Univerzita Mateja Bela, Banská Bystrica, Slovenská Republika**

### **Abstract**

The main aim of thesis was the impact of the swimming training at the changes of swimming skills preschool age children. We focused on detection if the swimming lesson preparation affects changes of the children swimming skills. We focused on pre-school age of children it means children were 3 to 6 years old. The research was taken in swimming club named Husatka placed in Stiavnicky Banska Bystrica. The group of eight children were available for our research to study their swimming skills. The group of 8 people chosen by us had contained 3 boys and 5 girls. We have found out lower level of their swimming skills in the entrance tests. Our research method was realised two times by the identical rating scale. We had used 5 degree scale assessment. It means entrance tests of the basic swimming skills and their outgoing tests. The evaluation consist of the fact, swimming lesson preparation affects changes of the individual children swimming skills. This result was evaluated by a few methods such as the referral scaling, educational experiment, qualitative and quantitative methods. We could gain this result by our 3 months research focused on studying the progress of the children basic swimming skills.

**Key words :** Swimming, Swimming training, swimming skills

# **VPLYV ZÁKLADNÉHO PLAVECKÉHO NÁCVIKU NA ÚROVEŇ PLAVECKEJ SPÔSOBILOSTI ŽIAKOV**

## **AFFECT THE BASIC SWIMMING TRAINING TO THE LEVEL OF THE SWIMMING CAPABILITIES OF PUPILS**

**Žaneta Slyšková**

**KTVSFF UMB, Tajovského 40, Banská Bystrica, Slovenská republika**

### **ABSTRACT**

For the last 10 years had statistics every year about 100 people drowned in the Slovak Republic. This fact implies that the swimming illiteracy is a serious problem today. Therefore, in our work we deal with the issue of the impact of basic swimming training, the level of the swimming capabilities of children.

**Keywords:** swimming ability, changes in swimming skills, swimming docility, younger school age.

# **PRESNOSŤ STREĽBY A STABILITA DRŽANIA ZBRANE U REPREZENTANTA SR V BIATLONE POČAS DŇA**

## **SHOOTING ACCURACY AND STABILITY OF POSSESSION OF A WEAPON BY A REPRESENTATIVE OF THE SLOVAK BIATHLON DURING THE DAY**

**Michal Šíma**

**Katedra telesnej výchovy a športu, Filozofická fakulta, Univerzita Mateja Bela,**

**Banská Bystrica, Slovenská republika**

### **ABSTRACT**

The aim of our study was based on our testing to determine proband shooting accuracy and stability of possession of a weapon in position prone in day. Proband M.Š. born 28.4.1992 performs sporting activity for more than 10 years and is representative of the Slovak Republic in the biathlon. Testing had been done in the gym at FF UMB. Testing took place at the beginning of the preparatory period 1 RTC in 2013/2014. Data acquisition, we used laser shooting machine skate. We used to evaluate qualitative methods and quantitative methods: arithmetic mean, standard deviation, minimum and maximum point value, paired t-test. We found that the proband had a better performance in the morning by 0.33 points. The difference in length of trajectory in time morning and afternoon time was 0.05 mm. We found that both measurements were not statistically significant ( $p > 0.05$ ). The achieved results can help to improve the quality shooting performance.

**Key words:** shooting accuracy, length of trajectory, SCATT, diurnal performance.

**VOLEJBALOVÁ PRÍPRAVA ZAMERANÁ NA ROZVOJ VÝBUŠNEJ  
SILY DOLNÝCH KONČATÍN U ŽIAKOV VOLEJBALOVEJ  
PRÍPRAVKY VO VK TATRAN BANSKÁ BYSTRICA**

**VOLLEYBALL PREPARATION AIMED AT DEVELOPING  
EXPLOSIVE STRENGTH OF LOWER LIMBS IN PUPILS  
VOLLEYBALL PREPARATION IN VK TATRAN BANSKÁ BYSTRICA**

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Banská Bystrica, Slovensko**

**Abstract**

The main goal of our thesis was to create suitable preparation aimed at developing explosive strength of lower limbs in pupils volleyball preparation in VK Tatran Banská Bystrica. We were observing the effect of our specific kinetic program on the development of explosive strength of lower limbs using Myotest device. We were testing 14 pupils at the age of 12 – 15 years old. They participated together in 84 trainings between entrance and exit evaluation and into 56 of them we enlisted trainings from our kinetic program. Using our kinetic program on pupils of volleyball preparation in VK Tatran Banská Bystrica we came to conclusion that it increased the whole level of explosive strength of lower limbs of pupils we tested, but some parameters which affect mentioned determinant were not statistically significant.

**Key Words:** Volleyball. Jumping explosiveness. Lower limbs. Pupils. Myotest.

# **CHRONOTYPY VYSOKOŠKOLSKÝCH ŠTUDENTIEK UNIVERZITY MATEJA BELA**

## **CHRONOTYPES OF UNIVERSITY'S STUDENTS OF MATEJ BEL UNIVERSITY**

**Dominika Vančová**

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Bystrica, Slovenská republika**

### **Abstract**

The aim of the study was chronotype's identification of university's students who have been practising the activity of aerobics during their free time. The experimental ensemble composed of probands ( $n = 62$ , age =  $21.2 \pm 1.4$  years) who attended I. and II. level of university's studies. The probands attended various study programmes and field of studies on particular faculties of Matej Bel University in Banská Bystrica. We identified chronotypes thanks to the method of standardised questionnaire. The identification was being done by quantification of score points of all questions. The scores were added together and the sum converted into a stated five point scale. The analysis has shown that 48 probands (77.4 %) tend to be the neither chronotype, 8 probands (12.9 %) are represented by moderately morning chronotype. Moderately evening chronotype is dominated for 5 probands (8.1 %). 1 proband (1.6 %) tends to be definitely evening chronotype. Definitely morning chronotype was not identified.

**Key words:** aerobics, biorhythms, chronobiology, chronotype, university's students

# **POROVNANIE TELESNÉHO VÝVINU A VŠEOBECNEJ POHYBOVEJ VÝKONNOSTI CHLAPCOV MLADŠIEHO ŠKOLSKÉHO VEKU V ATLETICKOM KRÚŽKU**

## **COMPARISON OF PHYSICAL DEVELOPMENT AND GENERAL PHYSICAL PERFORMANCE OF BOYS YOUNGER SCHOOL AGE IN ATHLETICS RING**

**Tomáš WILLWÉBER**

**Katedra telesnej výchovy a športu, FF, UMB, Banská Bystrica, Slovenská republika**

### **Abstract**

In this report we present the results of general physical performance of children attending the first grade of Elementary school on Dumbierska Street in Banska Bystrica, which were obtained using six tests from test battery EUROFIT (Moravec et al., 2002). The group included 10 boys aged 9 – 10 years old, who in the academic year 20012/2013 attended athletics classes organized within project “Kids' Athletics“. Second group included 10 boys aged 9 – 10 years old, on the academic year 2013/2014. First measurement was performed on 16 October 2012 and second measurement on 22 October 2013. The all results obtained are compared with each other and used mathematical and statistical methods. The parameters are initially by the use of basic statistical characteristics, such as maximum, minimum, arithmetic average and standard deviation. We conclude that in the measurement 2012/2013 in the experimental group reported higher mean values for all tests. Furthermore, we also test sit and reach flexibility test and 10 x 5m shuttle run test reported statistically significant changes at the significance level  $\alpha = 0,05$ .

**Keywords:** athletic activities, general physical performance, younger school age, test battery EUROFIT



# **SECTION DOCTORAL CANDIDATES**

# **CHANGE OF ATTITUDE OF SECONDARY SCHOOL STUDENTS TOWARDS THEIR PHYSICAL EDUCATION TEACHERS AFTER PARTICIPATING IN A WINTER TRAINING COURSE**

## **ZMENA POSTOJA ŽIAKOV STREDNÝCH ŠKÔL K UČITEĽOM TELESNEJ A ŠPORTOVEJ VÝCHOVY PO ABSOLVOVANÍ ZIMNÉHO VÝCVIKOVÉHO KURZU**

**Boris Beťák**

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Matej Bel University in Banská Bystrica, Slovakia**

### **Abstract**

In this study, the author presents the results of a research, analyzing possible changes in individual components of attitude (cognitive, conative and affective) of secondary school students towards their sports and physical education teachers after participating in a winter training course (skiing and snowboarding course). The research was conducted within 3 secondary schools in Žilina district. 113 students stated their opinions about 9 sports and physical education teachers. Total number of completed questionnaires and tests of a semantic selection was 205. Data collection methods used are: attitude questionnaire created specifically for this study (cognitive and conative components of attitude) as well as a semantic selection test (affective component of attitude). Based on the results of this research, the author states that there has been a positive change in attitude in all three components. The change marked in statistical significance testing is as following: for cognitive component reached level of  $p < 0.05$  and for conative and emotional component was  $p < 0.01$ . The author believes these results are adequate enough to serve as the basis for further study with a more representative sample size.

### **Key words**

Secondary school students, attitude towards teachers, sports and physical education teachers, training course of outdoor physical activities with main focus on winter sports.

# **THE LEVEL OF COORDINATION ABILITIES IN OLDER SCHOOL AGE HOCKEY PLAYERS**

## **ÚROVEŇ KOORDINAČNÝCH SCHOPNOSTÍ HOKEJISTOV STARŠIEHO ŠKOLSKÉHO VEKU**

**Michal Blanár**

**Department of Physical Education and Sport, Faculty of Philosophy,  
Matej Bel University Banská Bystrica**

### **Abstract**

In this paper we present cognitions of level of coordination abilities of older school-aged hockey players. Level of coordination abilities of players of MHK Dubnica nad Váhom were detected by the application of test battery of motor tests recommended by Hirtz et al. (1985) and taken over by Šimonek (1997). We assessed a reached level of coordination abilities with the standards (norms) for ice hockey – boys in accordance to Šimonek et al. (2008). Within the results we can conclude that from 7 tests we have not recorded any significantly above-average level, in three tests we recorded an above-average level, in three test an average level in three tests and a below-average in one test. Obtained results are valuable and useful on optimalization of the training process of older school-aged hockey players of MHK Dubnica nad Váhom.

**Key words:** ice hockey, coordination abilities, motor tests, older school age.

# **THE STUDENTS' ATTITUDES TO THE PHYSICAL EDUCATION AT ELEMENTARY SCHOOLS IN THE DISTRICT PRIEVIDZA**

**Boris Cipov**

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Matej Bel University in Banska Bystrica, Slovakia**

## **Abstract**

This paper presents the results of research aimed at finding ninth grade students' attitudes to physical education at elementary schools in the district Prievidza. The sample included 62 boys attending ninth grade at 2 rural and 4 urban elementary schools. Author found that positive attitudes predominate. Negative attitudes were reflected in negligible quantities. The highest score obtained by the respondents is in the cognitive component of attitudes. The author also expressed his belief that a positive attitude toward physical education does not necessarily mean active involvement in extra-curricular physical activities.

**Key words:** attitudes, physical education, elementary school pupils, ninth grade

# **DEVELOPMENT OF SPECIAL ENDURANCE USING ALTERNATIVE METHODS FOR RUNNERS**

**Ondrej Ďurják**

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Banská Bystrica, Slovak republic**

## **ABSTRACT**

The aim of our work is to find if it is possible to develop a special endurance by using alternative methods. Alternative methods can be described as an exercise with different movement structure but the same physiological profile as specific exercises. To find out we decide to assemble a 6 week training program. We split our research subject in two experimental groups. One group performed specific (running) training twice a week and the second group performed nonspecific (strength) training with the same extent. We carried out two tests before and after training program: 300 m sprint (maximal effort) and Wingate test.

We found that both of groups improved in 300 m test and in Wingate test - maximal power. The nonspecific group improved in 300 m test by 0, 79 s in comparison to 0, 65 s improvement in specific group. We find out that nonspecific group greatly improved in reached maximal power during Wingate test by 8, 31 % compared to 1, 32 % improvement in specific group. We haven't found enough differences between specific and nonspecific training in the 300m test after six week training program. Both groups improved approximately in the same level. The results from Wingate test suggest that non-specific training may cause more physiological response than the specific training. It suggests that nonspecific training can be used in training as a replacement or as an equal to specific training for 400 m in some specific conditions.

**Key words:** anaerobic lactate training, special endurance, response of the organism, alternative training method

**VIEW OF THE WINTER OLYMPIC GAMES SOCHI 2014 PERCEIVED  
BY THE PUPILS OF THE SECOND GRADE OF ELEMENTARY  
SCHOOLS IN BANSKÁ BYSTRICA**

**POHĽAD NA ZIMNÉ OLYMPIJSKÉ HRY SOČI 2014 OČAMI ŽIAKOV  
DRUHÉHO STUPŇA ZÁKLADNÝCH ŠKÔL V BANSKEJ BYSTRICI**

**Tomáš Kolofík**

**Department of Physical Education and Sport, Faculty of Arts, Matej Bel University,  
Banská Bystrica, Slovak Republic**

**ABSTRACT**

In his work, the author deals with the retrospective of the Winter Olympic Games Sochi 2014 perceived by the pupils of the second grade of the elementary schools. Based on the analysis of the questionnaire filled by the pupils of elementary schools of Banská Bystrica 10 days after the end of the Winter Olympic Games, he concluded that the topic of the Olympics, namely Winter Olympic Games plays a significant role among their hobbies. However the level of knowledge of this area is various in cases of some pupils, sometimes very diametrically.

**Key words:** Olympic education, Olympism, Winter Olympic Games Sochi 2014, pupils of the second grade of the elementary schools.

# **THE CHANGES IN THE LEVEL OF SELECTED MOTION ABILITIES OF THE STUDENTS KTVŠ FF UMB BANSKÁ BYSTRICA**

**Julián Krull**

**Department of Physical Education and Sport, Faculty of Arts, Matej Bel Univerzity,  
Banská Bystrica, Slovak republic**

## **ABSTRACT**

The goal was to determine the status and changes in the level of selected motion abilities of first year students. They studied at the Department of Physical Education and Sport in Faculty of Arts, University of Matej Bel. The paper presents the differences in motion abilities of 38 probands at the beginning and end of the summer semester in academic year 2012/13, when they realized input and output measurements. The research group consisted of students of study programs: Teaching physical education and Teaching physical education in combination with teaching another subjects. The probands were improved with statistical significance ( $\alpha = 0.05$ ) in the five tests, but in one test worsened with statistical significance ( $\alpha = 0.05$ ). Comparison of the results with previous research we observed different outputs. The results of our research point to the fact that the level of motor abilities of students of different study programs is different.

**KEYWORDS:** Motion ability, Teaching of physical education,

# **RESPONSE TO TRAINING LOAD AT THE COMPETITOR IN THE HAMMER THROW IN THREE MESOCYCLES IN THE PREPARATORY PERIOD**

**Nikoleta Kušnírová**

**Department of Physical Education and Sport, Faculty of Arts, Matej Bel University,  
Banská Bystrica, Slovak republic**

## **ABSTRACT**

This study is based on monitoring the response to training load of optimization the training period in athletic throws. The starting point for the analysis of the wave for „super compensation curve" on the basis of the ongoing state competitor in weekly and monthly microcycles, mesocycles implemented in response to training load. At the beginning of each training unit once a week we observed in response to different training load. Testing character had two reps in selected strengthening exercises before training through the device Fitro Dyne Premium. Using individual training mesocycles we evaluated the changes that have occurred in each endpoint with competitor. During the mesocycles the training was crucial for us parameters of performance, speed and mechanical work. During the our work we endpoint values performance and speed in the market and relocation achieve increasing and decreasing trend with a peak in the second and third mesocycles. This we have achieved a cumulative medium-term training effect, which is the result of momentary connections and late effects of longer-term training. File monitor response to training load, which we acquired through the application of one of the major fitness exercises in throwing disciplines and transfer it in us evidence indicates that the training load in terms intra-individual approach was adapted appropriately and effectively with respect to the performance of the studied female athletes. Based on the findings, we can say that the training load at the end of mesocycles in the first part of the preparatory period reflected in the values of endpoint performance, speed and mechanical work by increasing the level of explosive strength of lower and upper limb compared with the level at the beginning of the first reference of mesocycles.

**Key words :** training load, preparatory period, mesocycles,



# **THE EFFECTIVITY OF THE TRAINING LOAD OF THE SPECIAL TRAINING PARAMETERS ON THE CHANGES OF THE AEROBIC AND ANAEROBIC TRESHOLDS DURING THE TWO YEAR'S TRAINING CYCLE**

**Svetlana Liparova**

**Department of Physical Education and Sports, Faculty of Arts, Matej Bel University in Banska Bystrica**

## **ABSTRACT**

Monitoring of athletes and assessment of their current performance capacity is an integral part of the training as well as the whole training process. It requires an individual approach of the coach and the athletes who should know their assets as well as their limits.

Testing provides us with the opportunity to assess the current state of an athlete's body and their resistance to the load. These findings subsequently represent the basis for the evaluation of the training effect of the load, for adaptation of the training units and setting further course of the training process (Cillik & Tataruch, 2013).

In our study, we discuss the resistance of a cross triathlete's body to the load. We used a lactate test – 4x2 km with gradually increasing load. All the tests were performed in laboratory conditions at Matej Bel University in Banská Bystrica.

We were able to identify the triathlete's individual thresholds (aerobic threshold = AeT, anaerobic threshold = AT) by using the lactate test outcomes as a base. Our findings were subsequently correlated with the selected parameters from the training logs. The main research method was the regression and correlation analysis of the time series. The results obtained by mathematical statistics were subjected to the substantive analysis. The results and findings show that it is necessary to adjust the ATC and to time the increase of the AT towards the peak of the season. Training zones of various sports had different impact on the changes in the AT curve with different time lags as well as various levels of statistical significance.

The most significant positive correlations of volume indicators and speed changes in the AT appeared during the second time lag. In addition to the cycling discipline, positive correlation of volume indicators appears also five months before the ascent of the AT curve. On the contrary, negative impact of the volume indicators appeared with the lag of one mesocycle.

The periodization of the training load was the most important factor in the ATC. Our proband got the specified value in no spotted parameter. We noted the better results in the periodization in the second ATC but it is still deficient.

**Key words:** triathlon, anaerobic threshold, aerobic threshold, special training parameters

**VPLYV TRÉNINGOVÉHO PROGRAMU NA STABILITU  
STRELECKÉHO POSTOJA A DRŽANIA ZBRANE V POLOHE STOJ  
U BIATLONISTOV**

**EFFECT OF TRAINING PROGRAM FOR STABILITY OF SHOOTING  
POSITION AND RIFLE STABILITY DURING STANDING SHOOTING  
OF BIATHLETES**

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**Abstract**

The aim of experimental research was to verify the efficacy of the training program aimed to strengthen the deep stabilizing system to increase stability of shooting position ( $S^{SP}$ ) and rifle stability ( $R^S$ ) at standing shooting during the preparation period of the year training cycle 2013/2014 realized for biathletes. The studied group consisted of one youth man and two youth girls aged 15-18. Stability of shooting position was diagnosed using the device *FiTRO Sway check* and rifle stability by the laser system *SCATT Professional* in laboratory conditions. Effectiveness of the training program was evaluated in rest shooting ( $T_0$ ) and after load ( $T_{ANP500}$ ) in the anaerobic threshold intensity on running ergometer. The core part of the research was pedagogic experiment. Experimental stimulus  $E^S$  was exercises to strengthen the deep stabilizing system. The number of stimuli (12 weeks x 4 days per week = 48) and duration (20 min. x 48 stimuli = 960 min.) of the experiment were the same for all probands. In rest shooting ( $T_0$ ) we observed significant ( $p < 0.05$ ) improvement of performance in the  $S^{SP}$  by more than 20% in all subjects. Probands P. S. and V. M. reached significant changes ( $p < 0.05$ ) also in  $T_{ANP500}$ . On the other hand, proband K.K. was the only one who reached significant changes ( $p < 0.05$ ) in  $R^S$  in both tests. In  $R^S$  all probands due to training program improved their performance by more than 10% in tests  $T_0$  and  $T_{ANP500}$ . A correlation analysis between the values of the  $S_{SP}$  and the  $R^S$  has shown low to high positive dependence with higher dependency in the test  $T_{ANP500}$  (proband P.S. -  $\rho = 0.71$   $p < 0.05$ ; proband V.M. -  $\rho = 0.38$ ; proband K.K. -  $\rho = 0.45$ ) compared with  $T_0$  (P.S. -  $\rho = 0.67$ ; V.M. -  $\rho = 0.25$ ; K.K. -  $\rho = 0.26$ ). The results have shown that the training program had a positive effect for the  $S_{SP}$  and the  $R^S$ , which resulted in improvement of all stability parameters.

**Key words:** biathlon, FiTRO Sway check, deep stabilization system, Scatt Professional.

**EFFICIENCY COMPARISON OF THE SLOVAK WOMAN NATIONAL TEAM  
MEMBERS WITH THE WORLD'S BEST WOMEN BIATHLETES WITHIN SPRINT  
COMPETITION DURING ONE YEAR TRAINING CYCLE OF THE SEASON  
2013/2014**

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**ABSTRACT**

An aim of the presented work was to analyse and thereafter to compare the running and shooting efficiency of the members of the Slovak woman national team with the world top athletes within one year training cycle 2013/2014. The object of the investigation were two members of the Slovak national woman biathlon team – A.K. and J.G. The performances of these two national team members were analysed and thereafter compared with an average efficiency of the five most successful women competitors being in the result list. We have chosen for analyse the pure running losses, shooting time, staying on the shooting range, percentage of the shooting success in the sprint competitions within seven Biathlon World Cups and in the sprint competitions within Olympic Games during the said YTC 2013/2014. The entire average of the running losses for A.K. makes 16 sec. The loss against the world top women in the time of the shooting range staying was 11 sec and in the shooting speed 7 sec. Average of the shooting fruitfulness of the world top women athletes made 91%. The A.K. with her average of 80% loses against them 9%. The entire average of the running losses for J.G. made 48 sec. Her loss in the time of the shooting range staying against the world top women was 8 sec and in the shooting speed 7 sec. She achieved the entire average of the shooting fruitfulness 78% what was loss by 13% against the world top women athletes.

**Key words:** biathlon, year training cycle, sporting efficiency, running speed, shooting fruitfulness.

# **POWERSKATING AS A METHOD OF SKATING DEVELOPMENT IN VARIOUS CATEGORIES**

## **POWERSKATING AKO METÓDA ROZVOJA KORČUĽOVANIA V RÔZNYCH KATEGÓRIÁCH**

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### **Abstract**

The aim of the report is to point out the positive influence of powerskating in the development of skating in various categories. We have included powerskating exercises into training process of experimental groups. These exercises were not made in control group. We performed skating test of Slovak Ice Hockey Federation in each group and we compared the obtained results between the experimental and the control group. The obtained results were written in scoreboard of the Slovak Ice Hockey Federation. The obtained results were written in scoreboard of the Slovak Ice Hockey Federation. For the assessment we used methods of mathematical statistics – arithmetic mean ( $\bar{x}$ ), median, maximum, minimum, standard deviation and percentage. The results have shown, that powerskating which was implemented into the training process of experimental group, was important for improving the level of chosen game activity of an individual – for the ice skating. Our assumptions of positive influence of powerskating on skating of players were confirmed. We hope that positive results of our research will contribute to the improvement of training and development of the game activity of an individual in the area of ice skating.

**Key words:** Ice skating, Ice Hockey, powerskating, older students.

# **THE CHRONOTYPE AND SPEED ABILITIES OF DIURNAL RHYTHM IN JUNIOR TEAM HOCKEY PLAYERS**

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## **Abstract**

Study results in a different level of morning and afternoon levels of speed abilities. At up to 17 probands we observed a higher level of speed abilities in the afternoon, thereof in 7 probands the difference was in the level of statistical significance. Only in 3 of probands we observed a higher level of speed abilities in the morning. Based on analysis of chronotype in the file, we found that 15 (75%) probands of research group consisted mostly balanced types, 3 (15%) probands were mild evening and type 2 (10%) probands slightly early type. Evaluating the level of speed abilities of probands in terms of chronotype, we concluded that chronotype does not correlate with the level achieved speed abilities.

**Key words:** diurnal preference, speed abilities, chronotype, ice hockey

# **SHOOTING ACCURACY DEPENDING ON THE WAY OF SHOOTINGS FOR HOCKEY PLAYERS**

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## **ABSTRACT**

The study presents the results of research, where we analyzed and compared the accuracy of shooting, depending of our research was to analyze and compare the accuracy of shootings depending on shooting position (static or dynamic) and depending on the type of shootings and player position while shooting in HC 05 Banská Bystrica hockey club. The sample included 20 ice hockey players ( $n = 12$  forwards, defenders  $n = 8$ ). Level of precision shooting we investigated using non-standardized test for accuracy. The significance of differences precision shooting from a place of fire and accuracy of movement we investigated expertise substantive analysis whose criterion of significance was the value of the standard deviation (SD).

The overall save percentage in the test firing of the movement of the reference group was 18.9 %. The analysis of the accuracy of the shooting motion, we noticed that players at the position forwards reached an average of 1.58 goals 9 experiments, representing 17.6 %. The defenders were given the test is successful when the number of goals 1.88, representing 14.8 %. The overall save percentage in the test firing of the reference interest group was 15.6 %. When analyzing the shooting of place where players at the position forwards had an average of 1.33 goals 9 experiments, representing 20.9 %. The defenders were given the test is successful when the number of goals 1.5, which represents a percentage of 16.7 %.

Based on the analysis of substantive expertise, we did not find significant differences when comparing the average shooting success in the test shooting of the movement and test from the site under to the average position of the reference shooting level file.

**Key words:** Ice hockey, accuracy of shooting, shooting on location, shooting from moving

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