

**SEMMELWEIS UNIVERSITY
FACULTY OF PHYSICAL EDUCATION
AND SPORT SCIENCES (TF)**

**19TH INTERNATIONAL
CONFERENCE ON SPORT
SCIENCES FOR STUDENTS**



**BUDAPEST
8-10. APRIL 2010**

SPONSORS OF THE CONFERENCE



BUDAPEST SPAS
AND HOT SPRINGS



STUDENT UNION,
SEMMELWEIS UNIVERSITY
(TF)



Dear Participants,

Friendship is a fantastic bond between people, linking us across borders. Science is part of our culture, explaining universal rules, controlling our present and future well being and governing our lives. Friendships created with the help of science, based on our common interest, are very powerful, long-lasting and fruitful for those open enough to share knowledge and to give and accept new ideas.

The current international student congress provides an exceptional opportunity to form friendships and create bonds over oceans and mountains. At this congress you will be exposed to scientific research from Canada, Croatia, Japan, China, France, Russia, Denmark, Lithuania, Greece, Cyprus, Poland, Serbia, and Hungary. You have an opportunity to make friends far away from your home countries; friends who are working both in similar and quite different areas of sport science; friends who are eager to share ideas, information and knowledge with you. Please, don't miss this unique opportunity to learn and grow with the help of the new friends who are here in Budapest at the TF (this is the abbreviation of the Faculty of Physical Education and Sport Sciences) attending this scientific conference for students. Please, don't miss the opportunity to expose yourself to new ideas and approaches to solving scientific problems. Please, don't miss the chance to use science to make friends and don't neglect the possibility of using your friendship to be better at science!

Have a great meeting and enjoy your days in Budapest!

Prof. Dr. Zsolt Radák
vice-dean

MEMBERS OF THE ORGANIZING COMMITTEE

Dr. Zsolt Radák, professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Katalin Kovács, associate professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Tibor Kozsla, director (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Péter Berkes, assistant professor coordinator (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Péter Osváth, assistant professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. László Révész, (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Ilona Krajcz Varga, coordinator (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

MEMBERS OF THE SCIENTIFIC COMMITTEE

Dr. László Balogh, assistant professor (Eötvös Loránd University, Faculty of Pedagogy and Psychology)

Dr. Miklós Bánhidi, college professor (University of West Hungary, Apáczai Csere János Faculty)

Dr. József Bognár, associate professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Arlette Delamarche, professor (University of Rennes 2)

Dr. Paul Delamarche, professor (University of Rennes 2)

Dr. Peter Donelly, professor (University of Toronto, Faculty of Physical Education & Health)

Dr. Anna Farkas, research worker (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Erika Koltai, PhD student (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Mitsuru Higuchi, professor (Waseda University)

Dr. Karsten Froberg, associate professor, Head of RICH Centre (Institute of Sports Science and Clinical Biomechanics University of Southern Denmark)

Zsófia Mészáros, PhD student (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Csaba Nyakas, professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Kornél Sipos, professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Gyöngyi Szabó-Földesi, professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Tamás Dóczy, PhD student (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. Marina Sirko, teacher (Russian State University of Physical Education, Sport and Tourism, Moscow, Russia)

Dr. Tamás Sterbenz, associate professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Dr. József Pucsok, professor (National Institute for Sports Medicine, Budapest)

Dr. Erzsébet Rétsági, associate professor (University of Pécs, Institute of Physical Education and Sport Science, Faculty of Natural Science)

Dr. József Tihanyi, professor (Semmelweis University, Faculty of Physical Education and Sport Sciences, TF)

Walter Tokarski, professor (Deutsche Sporthochschule Köln)

Attila Velencei, PhD student (National Institute for Young Talents, Budapest)

Yan-chun Li, associate professor (Beijing Sport University, China)

PROGRAM

Thursday, 8. April 2010

Arrival to the Student Hotel of the Semmelweis University Faculty of Physical Education and Sport Sciences (TF) at Budapest. Address: Budapest XII. District, Alkotás utca 44.

19:00 Dinner at the Student Hotel

Friday, 9. April 2010

8:00 Breakfast at the Student Hotel

9:00 Registration (*Main Building, Room 39*)

10:30 Opening ceremony (*Main Building, Room 40*)

The official opening of the Congress by **Prof. Dr. József Tihanyi**, dean of Semmelweis University Faculty of Physical Education and Sport Sciences

Presentations:

Dr. Walter Tokarski, professor, President of the German Sport University Cologne

Dr. Mitsuru Higuchi, professor, Waseda University

12:30 Lunch at the Student Hotel

13:00 Late registration (*Main Building, Room 39*)

13:30 Rooms are open for participants

14:00 Sections

Sport & Quality of Life Section (*Main Building, Room 40*)

Social Sciences and Management of Sport Section (*Main Building, Room 43*)

Kinesiology & Sportmedicine Section (*Main Building, Room 37*)

17:30 Round-Table Introduction of Professors and their Universities (*Main Building, Room 37*)

19:30 Reception Dinner at the "Paulaner Pub & Restaurant"

Address: Budapest, 12. District, MOM Park, Alkotás utca 53.

1 glass beer or soft drink is included in the menu.

Additional food and/or drinks will be at your own cost.

Saturday 10. April 2010

7:30 Breakfast at the Student Hotel

8:30 Rooms are open for participants

9:00 Sections

Psychological & Pedagogical Aspects of Physical Movement Section (*Main Building, Room 37*)

Social Sciences and Kinesiology & Sportmedicine Ph.D. Section (*Main Building, Room 40*)

12:30 Closing ceremony (*Main Building, Room 40*)

Banquet (*Main Building, Room 43*)

15:30 Cultural program, sight-seeing in the Castle district

19:00 Dinner at the Student Hotel

20:30 Social Program Turkish Bath

Sunday 11. April 2010

8:00 Breakfast at the Student Hotel

**NOTE: THE TEXTS OF RESUMES ARE PRESENTED IN THE SAME FORM
THEY WERE SUBMITTED**

FRIDAY AFTERNOON

SPORT & QUALITY OF LIFE SECTION

(Main Building, Room 40)

Chair: **Dr. Peter Donelly**

Members: **Dr. László Balogh, Dr. Paul Delamarche, Dr. Anna Farkas, Zsófia Mészáros**

1. **Bence Cselik:** Health-Image and Health Strategy in Elementary School (13)
2. **Tamás Pinczés:** Comparing the Eating Habits of Hungarian and American Students between the Age of 8 and 12 (14)
3. **Zoltán Farkas:** Do we like organic food? (15)
4. **Emőke Benkő-Ákos Móra:** Sport and Eating Habits of Elite Hungarian Gymnasts (16)
5. **Tünde Szarka:** The Possibilities of Adapting the Movements of Taekwondo for Children with Cerebral Palsy (17)
6. **Bernadett Németh:** The Use of Swimming for Children with Missing Limbs Using the Halliwick Method (18)
7. **Melina Alexandrou:** Attention Deficit Hyperactivity Disorder, Physical Activity and the Case Study of Michael Phelps (19)
8. **Virág Patyus-Éva Kállai:** The Effect of Sport and Success on Self-concept of the Deaf. Comparative Examination Having Regard to the Deaflympics (20)
9. **Károly Cserjés:** Longitudinal Survey on the Lifestyle of Young Adults with Mental Disabilities (21)
10. **Adrienn Blocosz:** Objectively Measured Physical Activity of 9-12 Year-old Budapest Children (22)
11. **Anette Weke:** The Age-Related Changes in Body Composition from Childhood to Aging (23)
12. **Vanda Pintér:** Body Composition and Physical Activity of Cypriot, Malaysian and Hungarian Male University Students (24)
13. **Anita Király:** Fitness Level of Students in Győr (25)
14. **Aljoša Arlov:** Specific Strength in the Function of Pistol Shooting Precision (26)
15. **Kristian Traberg Larsen-Mathias Ried-Larsen-Anders Grøntved:** Childhood Determinants of Physical Activity in Young Adulthood: A Review (27)

SOCIAL SCIENCES AND MANAGEMENT OF SPORT SECTION
(Main Building, Room 43)

Chair: **Dr. Walter Tokarski**

Members: **Dr. Miklós Bánhidi, Dr. Marina Sirko, Dr. Tamás Sterbenz, Tamás Dóczy**

1. **Cheong Johnson:** Comparison of Water Polo in Malaysia and Hungary from a Sociological Perspective (28)
2. **Ardavan Ardeshiricham:** Social Status of Soccer Coaches in Iran (29)
3. **Adrienn Volák:** Comparison and Analysis of the Athletic Entrance Tests in the Traditional and in the BSc System (30)
4. **Paweł Zembura:** Barriers to Popularizing Outdoor Physical Activity in Warsaw (31)
5. **Péter Juhász:** Youth, Sport Consumption - from a Communicational Point of View! (32)
6. **Sarah Boyle:** Development and Preliminary Testing of a Sustainability Rubric for Development through Sport Organizations (33)
7. **Réka Veress:** Funding Opportunities for "Sports for All" Provided by the EU (34)
8. **Artiom Deyev:** "4 p's" Concept in Sport Management (35)
9. **Mihály Zsiros:** Operational Challenges and Possible Solutions of the Hungarian Athletic Clubs in the XXI. Century (36)
10. **Adam Ablonczy:** Stadium Architecture in Ancient World (37)

KINESIOLOGY & SPORTMEDICINE SECTION
(Main Building, Room 37)

Chair: **Dr. Csaba Nyakas**

Members: **Dr. Arlette Delamarche, Dr. József Pucsok, Dr. Yan-chun Li, Erika Koltai**

1. **Mihály Sáfrán:** Treadmill Examination of First Class Canoe and Kayak Competitors **(38)**
2. **Meiko Asaka:** Effects of Rowing Training on Abdominal Muscle and Fat in Elderly Men **(39)**
3. **Orsolya Marton:** The Effect of Aging and Exercise on Acetylation of Proteins in Cerebellum of Rats: Role of Sirtuins **(40)**
4. **Barbara Szendrei:** ACTN3 Genotype in Hungarian Top Athletes **(41)**
5. **Eri Mikami - Noriyuki Fuku-Takahashi Hideyuki:** Mitochondrial Haplogroups Associated with Elite Japanese Athlete Status **(42)**
6. **Alexandra Ruhr:** Hsp 72 Expression And Nf-Kb Activation In Rat Extensor Digitorum Longus Muscle Following An Acute Bout of Exercise **(43)**
7. **Biborka Kocs:** A Study on Bone Structure of Pre-Pubertal Children **(44)**
8. **Radoslaw Michalski:** Application of Artificial Neural Networks in the Assesment of Normal Gait Symmetry of People with Locomotive Dysfunctions **(45)**
9. **Anna Pottyondy-János Négyesi:** Transfer Effects of Neuro-Muscular Adaptation of Several Muscle Groups and their Relation to the Jumping Power **(46)**
10. **Aghabegloo, Mahmoud:** The Effects of Creatine Supplementation on Lactate, Nitrate and Nitrite **(47)**

SATURDAY

PSYCHOLOGICAL & PEDAGOGICAL ASPECTS OF PHYSICAL MOVEMENT SECTION

(Main Building, Room 37)

Chair: **Dr. Karsten Froberg**

Members: **Dr. József Bognár, Dr. Erzsébet Rétsági, Dr. Kornél Sipos, Attila Velencei**

1. **Attila Szendrei:** Sport as Coping Strategy in the Sphere of the Managers (**48**)
2. **Emese Márkus-Attila Tóth:** An Analysis of Coping Skills in Triathlon (**49**)
3. **Nadezhda Pakhamovich:** The Investigation of the Complex Coordination of the Second Part of Figure Skaters` Free Skating (**50**)
4. **Dóra Görögh - Attila Heim:** Comparison of Elite Handball Players Related to Attacking Positions on the Evidence of Psychological Investigation (**51**)
5. **Ágnes Kovács –Dániel Somoskői:** Smoking and Physical Activity (**52**)
6. **Aneta Guz-Maciej Laszuk:** Athletics in Awareness of Primary School Students in Municipal and Rural Regions (**53**)
7. **Péter Gabrovits –Sándor Török:** Practical Testing of Success Oriented and Failure Avoiding Behavior of Elementary School Students (**54**)
8. **Marcell Ipach:** Comparison of Motor Performance and Social Anxiety (SASC) of 10-12-Year-old PE Class and Music Class School Children (**55**)
9. **Anna Protzner-Dóra Lasztovicza:** The Effect of Additional PE and Music Education on the Elementary School Students Sociometric Status (**56**)
10. **Anna Szisz-Emese Megellai:** Social Concerns of Sport Motivation (**57**)
11. **Anna Lerch-Dóra Boldizsár:** Empirical Examination of Hungarian and French Athletes` Motivation and Feelings Connected with Sport (**58**)
12. **Katalin Szigeti-Lea Éva Tóth-Anna Szisz:** Comparative Analysis of Motivations for Recreation in Szeged and Budapest (**59**)

**SOCIAL SCIENCES AND KINESIOLOGY
& SPORTMEDICINE PHD SECTION**
(Main Building, Room 40)

Chair: **Dr. József Tihanyi**

Members: **Dr. Gyöngyi Szabó Földesi, Dr. Mitsuru Higuchi, Dr. Li Zhao,
Dr. Walter Tokarski**

1. **Norbert Kovács-Levente Vágó:** Importance of Running Speed, Jumping Ability and the Jumped Result in Long Jump **(60)**
2. **Dino Sourek:** Metric Characteristic of New-Constructed Tests Valuating Specific Explosive Strength at Fencers **(61)**
3. **Attila Heim-Dóra Görögh (MSc):** Different Phases of Norwegian and Hungarian Women Junior Handball Matches. (A Comparative Analysis) **(62)**
4. **Péter Szájer-Mátyás Szeiler (MSc):** The Effect of the Hand Paddle and Tempo Coordinator on Young Swimmer's Kinesthesia **(63)**
5. **Alma Kisielienė:** Expression of Self-Esteem and Aggression by Adolescent Judo Athletes **(64)**
6. **Ryo Kakigi - Hisashi Naito - Yuji Ogura - Yuto Fukai - Toshinori Yoshihara - Noriko Ichinoseki-Sekine - Shizuo Katamoto:** Different Tesponse of Alpha-Actinin Isoforms to Muscle Damage in Rat Skeletal Muscle **(65)**
7. **Anna Udvardy-Zsolt Komka-Vince Szőke:** The Role of ADRB2 Polymorphisms in Sport Selection **(66)**
8. **Le Douairon Lahaye S.-Avril F.-Krasniak T.-Zouhal H.:** Comparison of 2 Strategies of Relay on Team Time Trial Cycling Performance **(67)**
9. **Le Douairon Lahaye S.-Malardé S.-Zguira MS.-Rebillard A.-Vincent S.-Lemoine Morel S.-Delamarche P.-Carré F.-Rannou Bekono F.:** Combined Effects of Type 1 Diabetes and Exercise Training on Cardiac Function: Study of Nos1, Ryr2 and B3-Adrenoceptor **(68)**
10. **Svetlana Averina:** Trends of the Ultras Subculture Advancement in the Russian Reality **(69)**
11. **Diana Déri:** Football Academies: Development and Competencies in the Talent Development Program **(70)**
12. **Eszter Szabó:** Comparison of Development Trend in 7-11 Year old Children **(71)**

SPORT & QUALITY OF LIFE SECTION

Bence Cselik

University of Pécs, Institute for Physical Education and Sport Sciences, Hungary

Supervisor: Dr. Erzsébet Rétsági, associate professor

Health-Image and Health Strategy in Elementary School

Introduction The main focus of our research is to observe the functions of the ongoing health strategy in elementary education. Questioning partners we consider one measurement of realization for our aim. I analyzed the data collected from the institute, interpreted the results, and examined some possibilities of operative planning that lead to strategy aims, that are the experience based short-term aims.

Hypothesis We suppose that already in elementary school it is important to begin health related education in order to have it as a skill at adult age. We believe that efforts of an enthusiastic group of teachers, through health related education, can lead to the successful design and realization of a strategy. We further hypothesize that with regular data collection we could be able to predict if we are heading to the right direction and see what needs to be modified.

Purpose of the study 1. With a follow up study it was the aim to obtain a wide picture of nutrition and the physical activity related habits of the students. 2. To explore the changes of the healthy lifestyle of the students. 3. To prove that it is worth inventing a health related education strategy even at basic level. 4. To show that all strategy works only if participants are interested in the realization of the program. 5. To provide recommendations for future steps.

Subjects One hundred and seventy-four elementary school students, aged 11-14 years participated in the study. From the topics of the health related education strategy only physical activity and life style related points were analyzed.

Methodology Subjects voluntarily filled out a questionnaire that contained both multiple choice questions and questions requiring written answer. The questionnaire was prepared based on the 1999 and 2005 questionnaire with special respect to nutrition and physical activity. The questions were related to the aspects of health and physical activity, and the internal and external environment of the students and the geographical area. We also investigated the nutrition habits and their individual opinion about: what kind of food they think to be healthy; what are their nutrition habits; and whether they require more sport activities in school.

Result In conclusion it can be stated that we achieved positive results regarding nutrition and physical activity habits. We found that student have sufficient knowledge about the importance of health and physical activity. The sport activity itself is judged positively. For some reasons, however, they practically do not realize them. Health education, beside the contribution of the family, primarily should be and must be established in school. Together with the help of family, schools could develop and refine health conscious behavior with higher chance in early elementary school age. To reach the aims of health related education it is important to develop health consciousness. This requires a beneficial relationship between the educators and the children as well as a good example of a healthy lifestyle from the teachers themselves.

Tamás Pinczés

College of Nyíregyháza, Hungary

Supervisor: Dr. Klára Batta, college professor

Comparing the Eating Habits of Hungarian and American Students between the Age of 8 and 12

I spent the last two summers in the United States of America where I worked with young students in a summer camp. Here I could inspect the cultural life of this country and get to know students' eating habits. My experience and the information from the media incited me to research the eating habits of American students and to compare them with Hungarian ones from the same age.

My hypotheses were the following:

I supposed that

- there are differences between the frequency of nourishment with Hungarian and American students
- there are significant distinctions between American and Hungarian students considering having meals in fast food restaurants
- Hungarian students have much more dairy products than American ones.

My questionnaire has been filled by 450 students from an American summer camp and by 450 students from three different schools in Debrecen.

This questionnaire contains 25 questions and tries to focus on the following areas:

- frequency of nourishment
- consumption of meat
- frequency of having meals in fast food restaurants
- favorite fruit
- favorite vegetable
- how much water our body contains
- how the body gains energy during doing sports or moving

The elaboration and interpretation of the questionnaire has been done with the help of a statistics program called Spss.

The results are the following:

- During examining the frequency of nourishment we tried to focus on having breakfast and dinner. American students have breakfast in much bigger per cent, so there are significant distinctions, while in having dinner there are no significant distinctions, the results are almost the same.
- My supposition on the frequency of having meals in fast food restaurants has been verified. American children eat fast food much more frequently than Hungarian ones.
- Examining the consumption of having dairy products I supposed that Hungarian students have more dairy products than American ones from the same age. Our hypothesis is also right in this aspect since there are significant differences.
- In the course of research we have got a question about the habit of having snacks between meals (chips, coke). Do the American kids have snacks more often than Hungarian kids? The question is relevant because we have significant differences.

According to the results there is an opportunity to make suggestions and give advice on healthy nutrition.

Zoltán Farkas

University of Pécs, Institute for Physical Education and Sport Sciences, Hungary
Supervisor: Dr. Márta Wilhelm, associate professor

Do we like organic food?

Organic food is more and more important in modern societies. People caring for their natural surroundings and health look for these products. In my study I was interested in the knowledge and consumption of organic food among university students. I invented a questionnaire, and asking Hungarian, Romanian and non-Hungarian students living and studying in Hungary. 150 Hungarians, 50 Romanians and 110 resident non-Hungarian students answered fully. The international students were coming from many different countries. Questions in three categories asking about (1) shopping habits, (2) consumption of organic food and (3) about physical activity, preferred sports of the students were invented. I was testing if there is any correlation between physical activity and healthy eating habits. The question in this respect rises if a student is eating organic food or not, if organic food is preferred instead of regular food products, and if the answering person is doing any regular exercises or not. A randomised control group (pedestrians on the streets) were also asked. In Hungary both resident and Hungarian students know the word and meaning of organic (above 80%), while Romanian students miss general knowledge, only 28% said they know the word. In each country those who know the word also buy organic products (78%), and choose them instead of regular goods. From those who do not buy organic goods, do for one special reason (62-80%). Most of consumers of organic products buy meat and dairy goods. 81% of Romanian students cook their own meal from the organic goods, while in Hungary only 38% of the students cook at home. While is most question the resident non-Hungarian students seemed to choose bio-products, they did not know that organic food has positive effects on the health status (only 41% said, it correlates with health, while 70% of the Hungarians, and 50% of Romanians correlated these terms with each other). Most of the students exercise, but the resident students exercise only regularly, and often (91%). For the question if they use organic products in case of a sickness 72% of Romanian students answered with yes, while only 40% of resident non-Hungarian students choose healthy food or organic products in curing sicknesses.

Altogether it is safe to say that in Europe organic products are generally known, but their usage and importance is not equal in different cultures. Some people use them regularly, without knowing their effects, while in other societies preferences are very important in regular consumption.

Emőke Benkő - Ákos Móra

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Pál Hamar, associate professor

Consultant: István Karsai, research worker

Sport and Eating Habits of Elite Hungarian Gymnasts

Introduction: With regards to healthy lifestyle habits, gymnastics is very contentious. Contrary to popular belief, many gymnasts fail to live a healthy lifestyle due to the pressure of size stipulations. In this particular study, it is necessary to emphasize the low number of participants. As previous literature has shown, this is a result of a limited number of elite-class gymnasts in Hungary. (Hamar 1996, Karácsony 1997, Petrou, Bognár 2003, Pápai, Szabó 2004, Kiss, Bognár, Fügedi and Honfi 2006, Benkő, Kiss and Bognár, 2008).

Aim and hypothesis: The purpose of our study is to analyze the sport and eating habits of Hungarian elite gymnasts. It is hypothesized that these athletes possess an eligible lifestyle, exceeding that of the average individual. It was also believed that fast food restaurants do not play an important role in their life. Moreover, we have analyzed the eating habits of first class athletes, who have also spent a total of three months of the year at the Tata training camp. Two other important topics that are studied are diet-keeping and vitamin intake. Gaining weight is a significant factor (relative power), therefore, we assume the vast majority of the subjects keep a persistent diet in order to enhance performance.

Subjects and methods: The subjects are athletes from various gymnastic clubs of Budapest and other cities (n=50), including all national teams, as well as the champion program members. The age of the subjects varied between 11 and 24. Because the Gymnastics European Championship occurred during our study, this created an unequal men to women ratio, whereby more woman participated. We chose the questionnaire-method, but only 50 were returned of the 62 distributed. A modified version of the 3 part questionnaires of Ottília Szabadsné Hollanda (1997) and Pál Hamar (2005) were utilized. The first one represents a personal profile; the second with the family's role of the sports and healthy lifestyle; and the third of the connection between the gymnast and health. All the necessary information attached to the questionnaire is presented personally.

Results: We can clearly see from the answers, that the athletes' parents have an impact in sport regarding their child's lifestyle choices. Most parents do not expect a great success in sport. Majority of the families do not attend sport events together. The sleep hours of subjects vary between 6 and 10 hours daily. The younger the athlete, the less amount of sleep received. By examining eating habits, no difference between gender and age were found. They eat frequently in fast food restaurants, not only with friends, but even with their parents. Vitamin intake only occurred with the suggestion of the trainer or parents, but not permanently, and rather among the older generation. We received positive feedback about the food in Tata, where subjects preferred to eat warm and multifarious food.

Summary: In conclusion, the eating and sport habits of the subjects are not proper, irrespectively of the gender or the age group. Therefore, we find it necessary to send the elite gymnasts to medical examinations more often than every half a year.

Tünde Szarka

The András Pető Institute of Conductive Education and College for Conductor Training,
Budapest, Hungary

Supervisor: Dr. Zsuzsanna Szilárd, college associate professor

The Possibilities of Adapting the Movements of Taekwondo for Children with Cerebral Palsy

The method of physician and educator Pető opened up a new way for the rehabilitation of motor disordered children and adults whose dysfunction was due to damages to the central nervous system. Kinetically they are at a lower level than the healthy children of the same age: it depends on their diagnosis but the tone of their muscles is usually hypotonic, hypertonic or spastic which means they are rigid. They can also have coordination problems or excessive movements. It is not only a motoric disorder for them, they have secondary symptoms like synergism that means if one hand or leg moves, the other one pathologically does the very same. We can also talk about cognitive disorders as well. Therefore they especially need conductive education that teaches them how to execute movements that are ordinary for us but not for them. Conductive education is based on the concept that despite the damage, the nervous system still possesses the capacity to form new neural connections. Its essence is in the complex development of the personality based on an active learning process. As a part of this process train in the Pető Institute can do swimming, horse riding, boccia, rowing, play with they had the chance to meet a new self defense sport, a Korean martial art called Taekwondo. We started to teach 15 children of different age (from 8 to 14), diagnosis (tetraparesis spastica, hemiplegia spastica, diplegia spastica), different mental and physical status. We taught them the leg and hand techniques 45 minutes a week in different ways because of the different diagnosis and physical, mental levels. We used medical aids to learn how to make it easier as well. I wrote a diary and recorded lots of trainings to see the differences between the trainings at the beginning and the trainings later. After a year according to my diary and the videos we can say that it is possible to adapt the movements of Taekwondo for children with cerebral palsy. After practicing a lot of hand techniques especially hitting, the secondary symptom synergism hasn't been a problem anymore. The kicking techniques have become a lot stronger as well. Their stamina, endurance, muscle, discipline, attention and a lot more have also developed. Their Taekwondo knowledge shows such an improvement that we are planning to take more belt exams and to go to competitions as well.

Bernadett Németh

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

The Use of Swimming for Children with Missing Limbs Using the Halliwick Method

Supervisor: Gábor Ramocsa, assistant lecturer

Consultant: Dr. Zoltan Bejek, orthopedic doctor

Introduction: The topic of my presentation is the use of the Halliwick method with children who „suffer” from missing limbs. The Halliwick method was developed by James McMillan in London with the goal of teaching children to swim by having them practice a series of movements consisting of 10 basic exercises.

Nowadays, teachers in Hungarian schools are required to teach children swimming and other sports (physical education), so it is important for them to have access to more information about additional effective teaching methods. One of the advantages of the Halliwick method is that the teacher is able to motivate the child more successfully.

Goal: With the implementation of the Halliwick method, I proposed that children with missing limbs could learn to swim and that muscle tone and control would increase.

There is a lot of information and research available regarding the use of the Halliwick method with people who have had brain injuries. I believed it was time to study the effects of this method on children with missing limbs.

Hypothesis: The use of the Halliwick method would result in more intensive development of range of motion, as well as enable children to develop swimming skills.

- It would have a positive effect on muscle balance and control.
- The method would provide the basics of swimming to children with missing limbs.

Research circumstances:

- 15 children with missing limbs (9-11 years old) took part in our clinical trial.
- With the help of Dr.Zoltán Bejek had been to compartmentalized the children. The research group consisted of 8 children and the control group was 7. By research group we used Halliwick method.
- The Halliwick Wasserterapie Assessment questionnaire was used during the clinical trial and to process the outcome.

Results:

- The Halliwick method was shown to be useful for both rehabilitation and teaching children to swim.
- It proved to be valuable for both teachers and children.
- Even though both the research and control groups showed development, we can declare that the research group showed a significantly higher degree of development.

The resulting development was in both the physical and emotional areas.

Melina Alexandrou

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Judit Farkas, quality assurance and accreditation adviser

Attention Deficit Hyperactivity Disorder, Physical Activity and the Case Study of Michael Phelps

Introduction The purpose of the study was to examine through a famous athlete's personal life experience how the methods of treatment of ADHD worked in reality. ADHD influences millions of children's and adults life in today's society.

Attention Deficit Hyperactivity Disorder, as it will be proven in this presentation is with the same importance it also influences the top athletes of the 21st century. Sometimes this disorder is the reason why successful athletes began any sport activity.

The treatment includes physical activity as the first and in highest importance advise given by psychologists, medication that should be given only after a certain, sure and secure medical research with results that show no other choice but those, and last but not least, medical diet.

There are more and more findings, which emphasize the importance of physical activity for people diagnosed with ADHD.

Research methods A qualitative method was chosen with categories of document analysis of the related scientific literature as well as reviews and revealing interviews.

Like many children with ADHD, Michael Phelps's treatment was medication and behaviour modification. His mother quickly realized that tightly scheduling Michael's time proved effective in calming his behaviour, as did one of his favourite sports: swimming.

By 11, Michael was managing his ADHD without medication. Now, more than a decade after learning of her son's problem, the mother is sharing her insight with other mother through a website called ADHD Moms.

Case study Attention Deficit Hyperactivity Disorder is still sometimes called ADD (Attention Deficit Disorder). The term ADD was changed to ADHD in the late 1980'. During the 1960's and 1970' Children with ADHD were often referred to as *Hyperkinetic*. It can have serious effects if it is not adequately treated. It was early labeled as *Minimal brain Dysfunction*. This disorder is specifically a problem with persistence towards the feature. The ability to sustain behavior over time toward a task what people call sustained attention. ADHD in Michael Phelps' life was an important issue that played an important role in his today career and leaded to a wider view of childhood disorders in sports.

At age 9, his doctor diagnosed Attention Deficit Hyperactivity Disorder, which affects more than four million children in the U.S. ADHD children don't respond to social skill training or very unimpressive it does not generalize outside the training environment. The case study of Michael Phelps explains how well scientists understand, consider as important and treat this disorder improving gradually with the years. The diagnosis that were made and the treatments, became so advanced and studied in medicine today, that made sport and Physical activity in general, a highly recommended issue in our society.

Conclusions and recommendations It is concluded that every physical education teacher should be informed and interested about the basics of this disorder in order to be able to work with those people that are advised to be involved and gradually treated through physical activity. It is a medical and scientific proof that physical activity is a successful treatment for ADHD.

Virág Patyus-Éva Kállai

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Irén Acsai, associate professor

The Effect of Sport and Success on Self-concept of the Deaf: Comparative Examination Having Regard to the Deaflympics

Introduction Nowadays we can hear more and more about Paralympics and Special Olympic besides Olympic Games, however we have very few information about Deaflympics, said this topic is not enough newsworthy. The 21st Summer Deaflympics was organized in September 2009. Our aim is to present how well the Hungarian people informed about the persons with hearing disability. Even to draw attention to the importance of the sport in case of the deaf, and show that physical activity can shape the self-concept, through assisting their integration into the majority society. After analyzing the literature found that as time goes we focus on the person rather than the disability (Lányiné, 2004).

Hypothesis Our conception is that the physical activity – focusing on successful sport activity - may help to accept the otherness and overcome prejudices and that is the reason why sport activity leads to more positive self-image. Based on our experiences, we suppose that Hungarian people have slight information about Deaflympics.

Methods The Deaflympics survey was based on our own questionnaire. The test persons (n=324) filled out the questionnaire over the Internet. 81 deaf people at different age took part in the self-concept test who had different sport-experiences. The members of Hungarian deaf water polo team filled out the test before and after their Deaflympics victory. We have divided the test group (n=81) into 3 teams: not doing sport, regularly sportsmen, and Deaflympics medalists. We examined the participants' self-image by the Hungarian variant of the Tennessee Self Concept Scale. We used Statistica 8.0 Software ($p < 0.05$) for the statistical data processing – basis statistics indicators, K-W test.

Results Compared the non-athletes' and the regularly-athletes' self-concept, we only found significant difference in the moral-ethical self concept dimension. Between the regularly-athletes' and Deaflympics medalists' data there was a significant difference in the following dimensions: identity, self-satisfaction, moral-ethical, and social self. These differences also could be found between non-athletes' and first-class sportsmen's self-image, except for the moral-ethical self dimension. Compared the earlier and later result of the water polo team (n=12) we found significant difference in the familiar -, identity-, personal-self and the self-satisfaction.

In the knowledge survey only the 33% of the participants heard about Deaflympics. The majority (55%) thought that the deaf compete on the Paralympics. The 54% of asked persons were interested in this topic, and they would like to read/hear more about it in the media. 44% of them were on neutral opinion.

Summary Based on the results of the self-image survey we can state that the regular sport activity does not influence significantly the development of self-image in the case of deaf people. Only the outstanding success can positively affect the self-image. Finally, it is really provoking that the deaf sportsmen's successes are not newsworthy enough ...

Károly Cserjés

University of West-Hungary, Faculty of P. E. and Sports Sciences, Győr, Hungary
Supervisor: Dr. Miklós Bánhidi, college professor

Longitudinal Survey on the Lifestyle of Young Adults with Mental Disabilities

In our research program we have been monitoring the lifestyle of young adults with mental disabilities, who are living in a public institution in dáka western hungary. We wanted to find out about their lifestyle and how active they live how much calories do they intake and burn every day. We were curious how open are they towards physical active programs. How long are they motivated doing physical activities?

For the research we have been using a lifecorder monitor, developed by kenzo company in Japan. This tool allowed us to measure the physical activity and the calorie expenditure of the trials (7 males and 6 females) 1 week long. The monitor recorded datas in every 5 seconds, which has shown us an exact picture about lifestyle changes during the week. To understand the results of the trials, we were consulting with the local nurses and the psychologist. We tried also to offer for the trials spinning exercises.

The results of the monitor have shown us that the disabled people in the institution live a very inactive life, compared to the normal population. They don't do enough physical activity by themselves. When we organized a training program for them, they were happy and motivated, but when we left, they didn't continue the initiative alone. Their endurance capacity of them was very low, we think not only because of the physiological background. We think the reason is the lack of organized physical activity or the lack of coordination abilities related to the level of the disabilities.

We suggest in the institution disabled people should get more organized exercises to reach at least the minimum activity to keep them healthy. Because they have few experience in training they stop earlier, that's why they need much more motivation.

Adrienn Blocosz

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Martina Uvacsek, assistant professor

Objectively Measured Physical Activity of 9-12 Year-old Budapest Children

Introduction: Antal et al. (2009), in a representative study reported that the Hungarian children's prevalence of overweight and obesity was 18.1% and 7.4% in boys and 19.6% and 6.3% in girls respectively. Little objective data exist which defines the physical activity level of school-children or the whole day habitual activity (Ridgers 2009). The spontaneous activity/habitual physical activity is the main determinant of energy consumption (Thurborn & Proietto 2000). The purpose of the study was to measure the whole day physical activity of children for 3 weekdays and on the weekend days. According to the international activity reports we hypothesized that the boys are more active than girls, and the measured activity is higher on weekdays compared to weekend days.

Methods: Sixty-three children from 2 schools, 35 boys (11.5±1.1 yr) and 28 girls (10.9±1.0 yr), with previous parental permission participated in the study. Physical activity was quantified using uni-axial accelerometry for 3 consecutive school days and 2 weekend days. The accelerometer was worn mounted on the right hip using a fitted elastic belt during all waking hours except for water-based activities. Epoch length was set at 5 seconds. Time spent in sedentary, light, moderate, vigorous and very vigorous physical activity was determined using existing age-appropriate cut-points (Freedson et al. 1997). Children who did not achieve minimum 480 minute wear time/day were excluded from the statistical analysis. Differences in body dimensions between boys and girls were assessed using independent samples t-tests. Differences between means of daily activity were analysed by ANOVA. Statistical significance was set at $p < 0.05$.

Results: The boys were significantly older than the girls, but they did not differ in stature, body mass, BMI and percentage body fat. Altogether 9.5% of the children were overweight according to the Cole (2000) age-appropriate cut-offs. Boys were consistently more active than girls but the differences were not significant on weekdays and on weekend days. Generally the children's moderate-to-vigorous physical activity was double the international 60 min./day recommendation on weekdays (boys=129.4±44.5 min, girls=116.±27.3min) and significantly decreased by weekend (boys=103.65±82.4 min, girls=100.65±70.2 min).

Conclusion: The objectively measured PA of boys and girls did not differ significantly, which might be the result of the mixed groups on PE lessons and afternoon clubs. Activity measured on weekend was significantly lower than on weekdays, because the organized daily routine on weekdays produced daily physical activity opportunities compared to the weekend.

Anette Weke

University of West-Hungary, Faculty of P. E. and Sports Sciences, Győr, Hungary
Supervisor: Dr. Ferenc Ihász, associate professor

The Age-Related Changes in Body Composition from Childhood to Aging

Introduction: It is generally accepted that obesity is a health hazard because of its association with numerous metabolic complications such as dyslipidaemia, type 2 diabetes, and cardiovascular diseases. Paper is to present the status of development of the Hungarian population in body composition from childhood to aging.

Methods: 2008 - and 2009, nearly 2800 people, men and women of different ages examined InBody720 type based on the principle BIA scanner. The tests were conducted on several occasions, typically in the western region of Hungary. The measurements of participants in each case and urine after a meal have been minimal clothing.

Results: The analysis of the data there are many evidences found that the change in body composition and age relations have appeared. Novel appears, however, for women, specifically in the muscle and fat ratio and especially those against the change in speed. Frightening picture of the steep increase in total fat mass in young adulthood. Charming phenomenon has been treated very elderly group; return again, the optimal direction of change in body composition. The visceral fat area is concerned that young adults are unstoppable (?) growth.

Conclusions: The different rates of age-related changes in components examining questionable determinedness genetic and dominance effects are suspected in the ways of life, the emphasis will be placed. The obesity is characterized by increased adipose tissue formation, which in most cases a little physical activity and the consequence of increased food intake. The age of the sex hormone-dependent morphological structures of regression results in loss of sexual determine muscle mass, tone and strength, while an increase in body fat percentage, which is behind the negative dyslipidemic processes which in turn significantly increase the risk of coronary heart disease.

Vanda Pintér

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Martina Uvacsek, assistant professor

Body Composition and Physical Activity of Cypriot, Malaysian and Hungarian Male University Students

Introduction: Most of the contemporary health problems appear to be associated with our habits of living, including low levels of physical activity. The lack of regular physical activity (PA) increases the prevalence of overweight and obesity which is known as a risk factor of many diseases. Overweight problems might be prevented and reduced by physically active lifestyle (Antal, 2009; Photiou, 2008). The aim of the study was to compare body composition and physical activity of male students from different nations; to estimate the prevalence of overweight and obesity and to establish relationships between percentage body fat and physical activity indicators (MET, active days, sitting time).

Methods: 76 male volunteers of different Faculties of Physical Education or Sport Science (36 Malaysians, 22 Cypriots, 18 Hungarians) took part in our study. Body dimensions were measured according to ISAK (Merfell-Johnes M., 2006) method and physical activity level was estimated using the short form of IPAQ (Craig, 2003.) Differences among the three nations were analysed by Kruskal-Wallis ANOVA ($p < 0.05$). Relationships were investigated using linear correlations.

Results: Body dimensions and PA level of Malaysian, Cypriot and Hungarian students differed significantly. Independently of the BMI and body fat, the rate of obesity was significantly lower ($BMI = 23.5 \pm 1.6$; $F\% = 13.9 \pm 2.8$) and the PA level higher for the Hungarian students. Strong negative correlation was found between percentage body fat and the number of active days per week ($r = -0.60$) and strong positive relationship between fatness and sitting time ($r = 0.63$). Altogether the sedentary lifestyle explained 39.7% of the variance in fatness.

Conclusion: The significant differences in body composition and levels of PA in male students from different countries suggest that there might be differences among the physical activity programmes and (or) other unmeasured life-style factors. Unfortunately, factors like food consumption or cultural behaviour was not investigated in the present study.

Anita Király

University of West Hungary, Faculty of P. E. and Sport Sciences, Győr, Hungary
Supervisor: Dr. Károly Ozsváth, associate professor

Fitness Level of Students in Győr

The Eurofit test system (EUT) was basically made for the characterization of one's fitness level. In Hungary the reference scores of the Hungarian undergraduates were published by Szabó and Frenkl (1997), later Ozsváth published the results of the teacher training students of Budapest (1998, 2004), these were followed by last data of the Hungarian University of Physical Education by Ozsváth and Oláh (2007,2008,2009).

In my presentation I am about to compare the above mentioned reference scores to the EUT scores of undergraduates of Győr measured this year.

The purpose of our research was to determine the initial EUT reference scores and to characterize the fitness level of the students of NYME-AK. Our aim was also to use a solid "unisex" sum score evaluation system in the course of determining the fitness levels.

In our faculty we started the EUT assessments in fall, 2009. The number of subjects in the sample was $N=64$ ($n_{\text{♂}}=34$ and $n_{\text{♀}}=30$), with an average age of 19.5 years. The EUT consists out of 8 tests: Flamingo Balance (FLB), Plate tapping (PLT), Sit and Reach (SAR), Standing Broad Jump (SBJ), Sit Up (SUP), Bent Arm Hang (BAH), Handgrip (HGR) and a Shuttle Run (SHR). Moreover the students' height and weight were recorded and the BMI was calculated. The unisex sum score was evaluated by standardized values according to the recommended methods of EUT protocol (Barabas, 1993), where 20 points can be obtained in each test item and 1 point embraces 0.25 extent of standard deviation. Data were cleaned, checked, and the means between males and females were compared by a discriminant analysis.

Scores of students in our faculty proved to be better in all EUT tests than the reference scores of the Hungarian undergraduates and teacher training students ($p<0,001$). The discriminant analysis showed implicitly a significant difference between male and female achievements ($p<0.001$). This difference is dominantly caused by strength tests (HGR, BAH, SBJ). To our surprise the results are nearly the same as the scores of students of the year 2006-2007 at HUPE (females proved to be a little bit better at HUPE). The achievements will be shown in standardized star-diagram. On the whole the measurement refers to a better physical condition of the students than that we would have expected. The reason for that is temporarily unknown. The measurements will be resumed and extended to the differentiation of the level of fitness.

Aljoša Arlov

University of Novi-Sad, Serbia

Supervisor: Janos Kopas, professor

Specific Strength in the Function of Pistol Shooting Precision

Firearms are a legitimate means of coercion available to police officers, but also a sports requisite in shooting disciplines. Short firearms are the most represented in practical shooting and the shooting precision is one of the important elements in defining the complete successfulness of a shooter. This research has made an attempt to determine the contribution of monitored motoric capability to defining the characteristics of groups formed based on the precision of shooting from CZ99 pistol. The sample included 158 basic police trainees, divided into five groups according to the achieved shooting precision. Maximum muscle force achieved at isolated movements was established for all groups:

- hand grip of both non-dominant and dominant hands – respectively;
- both hands grip in the position of simulated double-hand pistol grip;
- dominant hand index finger bending in the position of simulated pulling of the trigger;
- hip joint stretching and
- knee joint stretching, as an indicator of specific strength of the trainees – shooters.

The results of the analyses suggest the existence of statistically important differences ($p=.000$) among the groups formed according to the precision criterion and with reference to the monitored motoric capability. The features of maximum muscle force detected at the non-dominant hand grip (29.598%), the force of dorsal-lumbar musculature (28.753%) and the detected force of dominant hand index finger bending in the position of simulated pulling of the trigger (16.279%) contribute the most to defining the characteristics of the respective groups. Higher levels of quality of the monitored motoric capability are the dominant characteristics of precise trainees – shooters.

Kristian Traberg Larsen - Mathias Ried-Larsen - Anders Grøntved

University of Southern Denmark, Faculty of Health Science

Supervisor: Dr. Karsten Froberg, professor

Childhood Determinants of Physical Activity in Young Adulthood: A Review

Introduction The knowledge of which determinants in childhood that influences the habitual physical activity level later in life is sparse. Many studies have investigated this in cross sectional designs, but little is known about the longitudinal associations. The main goal of this review is to summarize the existing literature on determinants in childhood for physical activity in young adulthood.

Method An internet based search was conducted on Pubmed in the English language on literature publicized up till February 2010. All titles and abstracts were searched for potential correlations between determinants in childhood and physical activity level in young adulthood in longitudinal designs. Search strategy included different variations of potential correlates and physical activity measures. Both quantitative and semi-quantitative reports were included.

Results The search strategy revealed 22 longitudinal studies in the specified age span. 4 demographic/biological, 4 psychological/cognitive/emotional, 7 behavioral attributes/skills and 5 social cultural correlates were evaluated and were significantly associated to physical activity level but the associations were only weak to modest. The strongest correlates for later physical activity level were childhood sports participation, childhood physical inactivity and previous physical activity level.

Conclusion The findings of this review reveal that only a limited number of high quality longitudinal studies have been conducted. Most of these are based on subjective measurements of physical activity and could thus explain the weak correlations between physical activity level and the correlate in focus. Future research should focus on improving the restricted knowledge in the field by conducting longitudinal study designs based on objective measures of physical activity.

SOCIAL SCIENCES AND MANAGEMENT OF SPORT SECTION

Cheong Johnson

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Gyöngyi Szabó Földesi, professor

Comparison of Water Polo in Malaysia and Hungary from a Sociological Perspective

Water polo was brought to Malaysia only in the 1960's. From the beginning the national teams were good enough but till 1998 it did not get any medal from any international games. In Hungary water polo has much longer traditions; actually it is one of the most popular and most successful sports in the country. The national teams won gold medal several times in world championships and in Olympic Games. The objectives of this paper are to compare the social background of water polo players in Malaysia and in Hungary. The methods used for data collection were in depth-interview made with some water polo players in Malaysia and Hungary. The results are presented according to the following dimensions: history of water polo in the two countries, the age and the way the players are selected in their teams, the benefit the players get from their sporting career. In conclusion it can be stated that on the one hand water polo is a body contact game, and the body size in Malaysia is smaller than players' in Europe (especially Hungary), therefore Malaysian players are in a disadvantageous situation. On the other hand, the differences in their achievement are also rooted in the different social and economic support given to water polo and their players in the two countries. It is unambiguous that in Malaysia much less attention is paid to this sport than in Hungary.

Ardavan Ardehshiricham

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Gyöngyi Szabó Földesi, professor

Social Status of Soccer Coaches in Iran

By the way of introduction it is necessary to mention that soccer is one of the most popular sports in Iran. However, the situation of this sport and its coaches has not been studied yet from a sociological aspect. The goal of this paper is to discuss the social background of this important issue in Iran. More specifically, the objective of this presentation is to discover the social background and roots of soccer and coaches in Iran. The methods used for collecting the data are the following: in- depth interviews and document analysis. The results are studied according to the following dimensions: education, license in coaching, sporting past, income and social prestige. The findings show that some of the Iranian soccer coaches are non-educated. Coaching soccer in Iran is mostly based on practice. Most of the coaches were player, so they did not see many points in being educated. With a few exceptions, they would use their experiences rather than attending special coaching classes. Nowadays they must hold an appropriate coaching degree to be able to work legally in the Iranian National Football League. Therefore there are many soccer coaching courses in soccer held by the Iranian Football Federation to promote the coaches' knowledge. In contrast, most of the coaches do not believe in the importance of knowledge and science in football. They just take part in the classes for getting degree, and not for improving their knowledge which has become a really big issue in Iran. The majority of the coaches get high income that cannot be compared to other professions. Their prestige is not so high, they are often criticized by colleagues, fans or reporters. In conclusion it is stated that the coaches in Iran have great influence on players, reporters and fans, their behavior has an important effect on society.

Adrienn Volák

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: László Szalma, associate professor

Consultant: Dr. Etele Kovács, associate professor

Comparison and Analysis of the Athletic Entrance Tests in the Traditional and in the BSc System

Introduction The idea of the Hungarian University of Physical Education was born at around the turn of the century, but the actual preparations started only in the beginning of the 1920s. The first academic year dates to 1925, thanks to Kunó Klebelsberg, the minister of culture at that time. The requirements for admission was defined at the beginning, as the applicants had to succeed in a written exam, than participate in a medical examination, and finally perform physical exercises and meet the pre-defined athletic levels. The entrance procedure put strict requirements to the applicants year by year, but the written exam was excluded after some time. These requirements were modified in 2006, when the so-called “Bologna System” was introduced in Hungary. This new admission procedure resulted in a unified and simplified system.

Theory and hypothesis In the research, it was examined if there is a difference between the traditional and the new BSc system, supposing that the changes can be proven by mathematical and statistical methods.

Methodology The sample of 2851 people applied to the University between 2003 and 2007. The applicants performed the athletic exercises on the field of Koltai. The requirements consisted of a 60m, long or high jump, triple jump, shot put or javelin throw and 2000m flat race until the academic year of 2005/2006. The BSc system brought about changes, and the number of tests decreased to three challenges: long jump, shot put and 2000m flat race. That is why the data of these three sports are used the analysis. The data was examined based on genders and years with mathematical and statistical calculations (such as average, minimum-maximum value, deviation) in order to get the most appropriate result. The differences between groups were defined using the “Welch-method.” In this research, the tests of the applicants were analyzed; another research could be done to see what the ratio of applicants who were accepted is and how they performed during their studies.

Results and conclusions It can be concluded, that the evaluation of the admission tests is an important issue, because they measure basic conditional abilities that are crucial for the coaching program of the TF. The statistical calculations have highlighted the differences, spotting the advantages and disadvantages of the traditional and BSc system.

Pawel Zembura

Józef Piłsudski University of Physical Education in Warsaw, Poland

Supervisor: Janusz Mastalerz, professor

Barriers to Popularizing Outdoor Physical Activity in Warsaw

Introduction: Improving a participation in physical activity is a crucial task for local governments, since it influences the society's well-being, being a tool against the effects of sedentary lifestyle. Outdoor physical activity should play an integral part in it. In Warsaw overall city budget the investments in sport and recreation facilities and programs in the last few years have remarkably increased. As a result of the running strategy the city was awarded the prestigious European capital of Sports Award in 2008. In short period of time the great sport event, the Euro 2012, will be taking place here. Analyses of areas where programs promoting physical activity were situated show that only a small percent took place outdoors. Effects of such marginalization might have consequences like infrastructure planning without taking into consideration the society's recreational needs. The research purpose was to diagnose the barriers preventing the use of outdoor in popularization of physical activity in Warsaw.

Research: The main method of research was conducting 23 semi-structured interviews with representatives of organizations planning physical activity strategies and taking care of non-motorized transport. These include public sport leaders in town and districts, companies organizing recreational events, promoting alternative means of transport as well as representatives of green spaces and forests in Warsaw. The second method used was the analysis of documents and data concerning sport and leisure planning in the capital city.

Results: To divide barriers mentioned in interviews the modified Ishikawa Diagram has been used. Four groups were separated: management (policy, strategies), people (manpower, individual barriers), infrastructure (areas, transport) and external factors (weather, image of outdoor spaces). Value has been put down to every quoted barrier. The most important group of barriers turned out to be the management. Highest value has been attributed to not including the outdoor environment in recreational strategies by decision makers and also to the lack of contact between the administrative units taking care of green spaces, communication and sport planners. Important role has been also assigned to the divided structure of management over green areas, forests and parks within the city.

Conclusions: The main barrier to the promotion of the outdoor physical activity is the low importance given to the subject by city-planners, which is connected with quick development of indoor facilities. Outdoor environment including cycle and pedestrian routes isn't treated like an integral part of the urban planning, influencing the society's attitudes towards active life. Many investments in sports halls, stadiums and sport fields cause situating most constant recreational actions in it. Districts sport departments are usually connected with units administrating them, so they have to place all kinds of events and programs there. On the other hand they have to deal with many separated green spaces administrators, which make the process of developing the strategies more complicated. The urban planning, including constructing the cycling routes and green spaces, isn't consulted with the departments taking care of sport and recreation.

Péter Juhász

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Péter Berkes, assistant professor

Consultant: Dr. Zsuzsanna Gósi, assistant professor

Youth, Sport consumption-from a Communicational Point of View!

Problem: In the past decade, spectacular changes took place in the sport of the advanced market economies, which yielded effective demand on the part market of spare time sport. In this societies sport consumption increased, which resulted in the increase of the economic weight of the sector. In Hungary, the social-economical processes in years after the transition affected negatively the demand for sport, which was basically influenced by the following factors: the availability of spare time, income, cultural attitude, purpose of spare time, the variety of supply, and communication. The research aims to find out the role of communication in shaping the attitude of the target group of the 18-25 aged youths. During the research we used the nomotetical approach to find out what the relevant professionals and consumers' views about the well-known communicational campaigns that encourage sporting activity.

Hypothesis: Based on the current literature and market theorist we expect the verification of the following hypothesis: we suppose that, according to the professionals of the sport market, the national and international, attractive campaigns standing in the centre of the public attention may influence effectively the sporting actively among the young consumers.

Methodology of the research: The communicational campaigns can be evaluated from several points of view: the advertising spending, effectiveness, creative capacity of the idea, and the cultural effect on the consumers. Our theory includes the following components: innovation, attractiveness, the success of delivering the message, creativity.

We chose the qualitative (deep-interview) process from the primary marketing research method. Our research aimed two different group of persons. Firstly, we interviewed 8 persons (from the side of the advertiser, agency and media) who were professionals in practice with relevant knowledge in the field of commercial communication. Secondly, we focused a group of consumers to collect data about their perceptions about the different sport commercials. The reason why we chose this method of collecting data was the fact that it helps to improve creative conceptions, to collect the reactions of the consumers, and to test commercials.

Results: Our results justify the role of communication in changing the attitude of young people towards sport. When it comes to elaborating communicational strategy for the target group, the (media-)consuming profile of the target group defines essentially the style and the core message of the communication. We made a comparison between the consumers' opinions with the professionals' ones. According to our analysis there is no big difference between the opinions of the two researched groups.

Conclusion: Summing up the results of the research we could stay that the communication campaigns are necessary to improve young people's awareness of the importance of a healthy lifestyle. We think that due to the correlations covered by our research, the central idea of the communication aiming to improve the sporting activity of the target group can be defined more precisely. More research are needed to observe this scientific problem deeply.

Sarah Boyle

University of Toronto Faculty of Physical Education and Health, Toronto, Canada
Supervisor: Dr. Peter Donnelly, associate professor

Development and Preliminary testing of a Sustainability Rubric for Development through Sport Organizations

The recent acknowledgment of sport as a powerful tool in addressing the United Nation's Millennium Development Goals has resulted in an increase in development through sport (DTS) initiatives. A concern with the flux of DTS initiatives over the past decade is the sustainability of these programs. This study conducted an initial assessment of sustainability, as there has been no large-scale evaluation on the sustainability of DTS organizations at this time. For this study sustainability is defined as the ability of a program to survive or for changes to remain once the initial catalyst (in this case the DTS initiative) is removed. For the primary purpose of this study a sustainability rubric was developed which consists of three evaluative levels assessing seven criteria (evaluation, funding, goals, social integration, volunteers, volunteers preparation, and exit strategies) deemed important to the sustainability of DTS initiatives. The second purpose of this project was to conduct a pilot study to test this sustainability rubric and determine its abilities to assess a group of DTS organizations and provide a preliminary glimpse into the current levels of sustainability within this group of organizations. 60 Organizations were selected randomly from the International Platform for Sport and Development website (an online hub for organizations involved in DTS). Preliminary results indicate that the majority of DTS organizations are operating on a level of sustainability of a one or two on a three point scale. In respect to the seven categories comprising the rubric the category that had the lowest overall score across all of the assessed DTS organizations was evaluation, followed closely by volunteer preparation.

Réka Veress

Eötvös Loránd University, Faculty of Education and Psychology, Budapest, Hungary
Supervisor: Júlia Bősze, assistant lecturer

Funding Opportunities for "Sport for All" Provided by the EU

The study goes about European funding opportunities in the field of sport which are not well-known among sport organizations. The so called community programs, like Europe for Citizens, Youth in Action etc. serve unused sources for the Hungarian sport clubs. Since the European Union treats professional sport as a market based activity, financial support is available only for non-profit, mostly "sports for all" organizations. In order to learn more about the funding knowledge of different sport organizations a telephone survey was made among them. Getting the results of that survey it became obvious that the familiarity with the different funding opportunities is very diverse. Some associations have already own experiences others have not even heard about the programs. Therefore it is necessary to collect, examine and summarize the basic practical informations about community programs. In this study different kinds of methods are used to achieve its aim, namely to provide a useful, short summary about the previously mentioned programs. Document analysis, interviews, case studies all serve the purpose to familiarize the sport organizations with the community programs. Although the main financial sources are available in the framework of the national development program (ÚMFT), it is an additional opportunity to apply for direct Union's support. A very wide range of calls for proposals are available each year, during the period of 2007-2013. Sport can join to the field of citizenship, youth, health, environment, culture etc. The point is that in all programs sport should be a tool, which helps to achieve the purposes of the particular program and not the aim of the project. All programs indicate excellent opportunity to improve international relations, since most of them require partners from other EU countries. According to the Lisbon Treaty sport became part of Union's policies that means special sources will be available. In 2009 appeared the first call for proposal especially for sport. It's name is "Preparatory Actions in the field of sport". To learn more about the programs, focal points other details, listen carefully to the presentation!

Artiom Deyev

Russian State University of Physical Education, Moscow, Russia

Supervisor: Zolotov Mikhail Ivanovich

“4 p’s” Concept in Sport Management

The term "**marketing mix**" was first used in 1953 when Neil Borden, in his American Marketing Association presidential address, took the recipe idea one step further and coined the term "marketing-mix". A prominent marketer, E. Jerome McCarthy, proposed a 4 P classification in 1960, which has seen wide use. The four P's concept is explained in most marketing textbooks and classes.

Elements of the marketing mix are often referred to as 'the four Ps':

- **Product** - A tangible object or an intangible service that is mass produced or manufactured on a large scale with a specific volume of units. Intangible products are service based like the tourism industry & the hotel industry or codes-based products like cellphone load and credits. Typical examples of a mass produced tangible object are the motor car and the disposable razor. A less obvious but ubiquitous mass produced service is a computer operating system. Packaging also needs to be taken into consideration.
- **Price** – The price is the amount a customer pays for the product. It is determined by a number of factors including market share, competition, material costs, product identity and the customer's perceived value of the product. The business may increase or decrease the price of product if other stores have the same product.
- **Place** – Place represents the location where a product can be purchased. It is often referred to as the distribution channel. It can include any physical store as well as virtual stores on the Internet.
- **Promotion** represents all of the communications that a marketer may use in the marketplace. Promotion has four distinct elements: advertising, public relations, word of mouth and point of sale. A certain amount of crossover occurs when promotion uses the four principal elements together, which is common in film promotion. Advertising covers any communication that is paid for, from cinema commercials, radio and Internet adverts through print media and billboards. Public relations are where the communication is not directly paid for and includes press releases, sponsorship deals, exhibitions, conferences, seminars or trade fairs and events. Word of mouth is any apparently informal communication about the product by ordinary individuals, satisfied customers or people specifically engaged to create word of mouth momentum. Sales staff often plays an important role in word of mouth and Public Relations (see Product above).

In the conference I would like to explain that it should be effective to use the very method applying to sport clubs. In this case, we should convert product to sport lessons, place to a gym, promotion to advertising. Going further, when a marketer finds optimal meanings to these variable numbers, marketing effectiveness will be increased. Customer's demands and preferences will be comprehended and therefore satisfied. More customers will be attracted, increasing club's income.

Mihály Zsiros

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Zsuzsanna Gősi, assistant professor

Consultant: Anikó Stupián Tóth, coach

Operational Challenges and Possible Solutions of the Hungarian Athletic Clubs in the XXI. Century

Introduction Hungarian athletics and the whole Hungarian sport are in a crisis now. In my presentation I would like to present the current state of the Hungarian athletic clubs, including the operational problems they face and some possible solutions. I chose this subject because I've been an active member of athletics for more than 10 years and I also feel the problems of my sport from experience. For this purpose, I would like to describe a few different athletic clubs and by right of the results give recommendations for a more effective functioning.

In my opinion the global financial crisis makes this type of research very timely and there isn't any other measurement like this. On the part of the Hungarian Athletics Association (HAA) there are only ideas, but no plans.

Hypothesis I suppose that the Hungarian athletic clubs have got a lot of operational difficulties. Most of them originate in the lack of financial support. Even though there are many positive signs, it still takes a great courage to make any change which only comes at a cost of breaking with older traditions.

Analysing methods, - persons, - conditions My research is aggregate from more segments. The first step was to collect the data from and about the Hungarian athletic clubs. As the part of the secondary research I systematized the related data which was available in the Hungarian Athletic Association's database. The other main part of the research was the primary, questionnaire research. The questionnaires were sent to the leaders of sport organizations. At some clubs I combined the questionnaires with structured interviews. I made sure to make detailed interviews in order to better specify the results and conclusions.

Results/Findings The result of the research is that Hungarian athletic clubs are fighting with problems:

- The athletes usually can only be financed posteriorly. Outstanding results can become much harder to achieve in the case of an athlete having to raise the money in advance for the preparation itself.
- There are too few well educated coaches and the number of athletes within a coaching group is way too high. Additionally, their proper (financial) honour is missing.
- The number and quality of related facilities is also a concern.
- The present economic situation and the funding problems can force top athletic clubs give up their fight for survival.
- There is a lack of a long-term and a short-term concept as well.
- There are many operational uncertainties at the club level.

Conclusions It isn't disputed that the Hungarian athletics is in a critical period right now. The financial, constitutional and personal conditions needed to reach the world top quality are undermined.

Possible solutions:

- The Hungarian athletics' future can be provided by section functioning based on a stable base.
- The membership fee and the sponsoring income are only negligible parts of the clubs' income, these should be increased. This can be explained partly with the lack of educated managers.
- Stand on one (internationally successful) discipline and invest money only on that.
- There are some tracks used by more clubs at the same time, these clubs could be merged so the administration costs would decrease.
- The initiation of more amateur sportsmen into the athletic clubs.
- Harmonize the HAA's race calendar with the prize money awarded street competitions.
- Having the athletic facilities' reconstruction as priority would pay in the long run.

The football academies may serve as a model to the continuous youth education in athletics.

Ádám Ablonczy

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Katalin Szikora, associate professor

Stadium Architecture in Ancient World

My choice of topic was influenced by the fact that during my studies at Semmelweis University faculty of Physical Education and Sport Sciences, I have been studying at Technical University of Budapest faculty of Architecture.

As regards my researches it is important to overview how stadium architecture developed because sport or physical education is closely related to our social life and entertaining. This is proved by a sentence from Juvenal: 'Panem et circenses' – Bread and circus.

These events and fights claimed from the very beginning permanent circumstances and buildings. These ancient sport buildings had their own regulations and interconnections with religion and culture. What is interesting in this research is the process of development and the result as we build our stadiums nowadays? There are so many connections between a stadium of ours and a stadium of ancient ages.

Choosing this topic I wanted to approach ancient stadiums from a different point of view, from the view of an architect; analyzing the sitting of those buildings, functions, sizes, design and structures. Making this presentation, and exploration I studied and used books, periodicals websites of both sport sciences, and history of architecture.

KINESIOLOGY & SPORTMEDICINE SECTION

Mihály Sáfrán

Budapest University of Technology and Economics, Faculty of Chemical Technology and Biotechnology, Budapest, Hungary

Supervisor: Dr. Gábor Szóts, assistant professor

Consultant: Dr. István Györe, head physician

Treadmill Examination of First Class Canoe and Kayak Competitors

Introduction: Being a Hungarian national team canoeist and as a bioengineer I would like to join my biochemical and physiological studies with the sport that's why I choose the exercise physiological testing of canoe-kayak athletes. The changes in olympic program of canoe induces a growing demand of the race specialised training methods.

Hypotheses:

1. The competitors from 500 m and 1000 m races have better endurance indicators (relVO₂, running time) than the athletes of 200 m race, because at longer races aerob pathways have more importance in energy gain.
2. During the 7 weeks of winter base exercises (moderate intensity running, swimming, strength training) the aerob capacity of the 500 m and 1000 m competitors improves in a higher rate than that of the 200 m athletes. In senior category athletes are specialised for a race-distance by their genotype and muscle fiber type. The congenital features determine the magnitude of the endurance capacity improvement.

Examination methods, participants, conditions: Hungarian national team male kayak and canoeists (n=26) were examined at two occasions on treadmill. Firstly, 6 weeks after the end of the competitive season, secondly 7 weeks later. During this period they underwent a winter preparatory phase. They ran until total exhaustion („vita maxima”) and gas exchange, heart rate and blood lactate levels were measured. Basic statistics and for comparison of the measured data in the two occasions Student's t-test was used (significance level: p<0,05).

Results: Except one person everyone performed better at the second examination. Competitors at longer distance were able to reach higher performance level than short distance competitors in both testing time with higher relVO₂ (first: 59,6±4,1 and 53,7±6,4 p<0,05; second: 62,6±4,6 and 53,9±5,4 p<0,05). After the same exercise period the improvement was measurable in the different physiological parameters. The longer distance competitors improved in their relVO₂ (p<0,05), while in short distance racers the RER was increased significantly (p<0,05) and relative oxygen uptake remain constant.

Summary: The 500 m and 1000 m competitors' endurance indicators were better than that of the 200 m athletes. After the same endurance training period the different race specialists showed different way of adaptation. The longer distance competitors improved in their relVO₂ with unchangable RER and the situation was the opposite for sprinters. The results could be useful in race-specialised training plans and in individual optimization.

Meiko Asaka

Waseda University, Tokyo, Japan

Supervisor: Dr. Higuchi Mitsuru, professor

Effects of Rowing Training on Abdominal Muscle and Fat in Elderly Men

Introduction: With advancing age, muscle mass decreases significantly more in abdominal area than in other sites, while abdominal fat accumulation increases. The abdominal muscle play an essential role in transferring the body in various movements such as walking and standing up from a chair and stabilizing the body. The age-related decrease in the abdominal muscle mass is associated with the risk of falls and disability in activities of daily living in elderly people and the increase in the abdominal fat accumulation has some effects on lifestyle-related diseases. Therefore, it is important to prevent decrease of these muscles and an increase of abdominal fat accumulation. Rowing exercise involves almost all muscles of the body and has been recommended to maintain health as aerobic exercise. It was reported that elderly oarsmen not only have higher aerobic capacity, but also have larger knee extensor muscles than age-matched sedentary men. Moreover, the leg, trunk and arm motions account for about 40%, 50%, and 10% of the total rowing power, respectively. Therefore, we hypothesized that rowing exercise increases abdominal muscle and decreases abdominal fat accumulation in elderly people.

Purpose: In this study, we examined the effects of rowing exercise on the abdominal muscle and fat size in elderly men.

Methods and results: In a cross-sectional study, we compared the abdominal muscle and fat size in 16 elderly male rowers (ROW: age, 67.8 ± 2.3 yr) and in 18 untrained men (UT: 66.2 ± 3.0 yr). The cross-sectional areas (CSAs) of abdominal muscle and fat were assessed by magnetic resonance imaging (MRI). ROW had 20% larger total abdominal muscle CSA than UT ($P < 0.01$); rectus abdominis, psoas major and erector spinae were 27%, 64% and 14% larger in ROW than in UT ($P < 0.05$ – 0.001), respectively. On the other hand, there were no differences in visceral and subcutaneous fat CSAs between the two groups.

In intervention study, 18 healthy untrained men aged 65–78 yr participated in this study. The subjects comprised a control group (CON; $n=9$, 69.0 ± 2.8 yr) and a rowing-training group (ROW-TR; $n=9$, 71.8 ± 4.4 yr). ROW-TR trained three times a week for 24 weeks and each training session consisted of 30 minutes workout program on rowing ergometer (including 5 minutes each warm-up and cool down periods). Baseline and post 24 week-training values for age, height, and weight were not different between ROW-TR and CON. At baseline, psoas major CSA in ROW-TR was significantly smaller than in CON. However, there were no differences in other muscle CSAs and function between the two groups. No changes were observed for all values between pre- and post- tests in CON. In response to 24 week-rowing training, total abdominal muscle, rectus abdominis, psoas major, and quadratus lumborum CSAs increased by 6%, 11%, 23% and 10%, respectively ($P < 0.05$ – 0.001). Subcutaneous fat CSA decreased by 17% ($P < 0.01$), but no change was observed for visceral fat CSA in ROW-TR.

Conclusion: These findings suggested that rowing training is a valuable tool for increasing abdominal muscle size, especially rectus abdominis, and psoas major, for elderly men.

Orsolya Marton

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Zsolt Radák, professor

Consultant: Erika Koltai, PhD student

The Effect of Aging and Exercise on Acetylation of Proteins in Cerebellum of Rats: Role of Sirtuins

Introduction: Aging is an unavoidable process, in which sirtuins are playing important role. Sirtuins have got seven classes in mammals and are NAD^+ dependent protein deacetylases. Moreover, sirtuins suggested regulators of fat and sugar metabolisms, brain function, DNA repair, mitochondrial biogenesis, inflammation, apoptosis and fiber type differentiation of skeletal muscle. In the present study the effects of sirtuins on proteins in cerebellum by aging and mild exercise were tested.

Hypothesis: Our hypothesis is that exercise training prevents the age-associated decrease in the level and activity of SIRT1 in the cerebellum. Furthermore, we suggested that NAMPT level also decreasing with aging, since this enzyme plays a crucial role in the biosynthesis of NAD^+ . Aging is associated with decreases in protein turnover and increases the half-life of proteins. We hypothesized that acetylation of lysine residues could curb the ubiquitination, hence aging increases the level of acetylation, which results in increases in the half life of proteins.

Methods: Twelve young (6 mo) and ten old (30 mo) male Wistar rats were selected for the study and divided into young control (YC), young exercised (YE), old control (OC) and old exercise (OE) groups. The exercise program was moderate running on treadmill for four weeks, four time a week with the gradually increasing duration with the starting from 20 min on the first week and 40 min on the last week. The running intensity was set at 60% of the VO_2 max (ranged between 10-20 m/min). The brain function was evaluated by Morris-maze test. The strength of forelimb of the animals was assessed by gripping test on pole. The biochemical analysis was assessed by Western-blot and fluorometric methods. Statistical significance was assessed by one-way ANOVA, followed by Tukey's post hoc test and correlation. The significance level was set at $p < 0.05$.

Results: Exercising resulted improved performance in the brain function of the young groups and did not effect the performance of aged animals. The strength of the animals were detected age-associated decrease. The levels of NAMPT decreased in exercise groups, and the SIRT1 content decreased with exercise in both age groups. On the other hand, exercise training increased the relative activity of SIRT1 in young animals and did not alter in old animals. The acetylated protein levels increased with aging. Similarly, the levels of acetylated tubulin increased significantly with aging and exercise training in young group.

Discussion: Aging increases the acetylation of proteins in cerebellum, which was associated with the changes in gripping force, and this could indicate that acetylation of certain proteins have physiological consequences. Exercise appears to increase the relative activity of sirtuins, which could indicate increased resistance against stressor. The present data suggest the importance of the protein specificity of acetylation/deacetylation, which could impact protein stability.

Barbara Szendrei

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Miklós Tóth, professor

Consultant: Dr. Márta Szmodis, research worker-Dr. István Györe, head physician

ACTN3 genotype in Hungarian top Athletes

Introduction: Sport plays an important role in our world, therefore a new branch of science was born, the sportgenomics. Several studies found strong genetic influences on athletic performance, so the researches can help in selection and in preparation of the athletes.

Methods: We investigated the gene of a skeletal muscle actin-binding protein, the alpha-actinin-3. The homozygosity of a common stop codon polymorphism in the ACTN3 gene (R577X) causes the lack of the protein. Alpha-actinin-3 is specifically expressed in fast twitch myofibers responsible generating force at high velocity. 577R allele can be an advantage in sprint sports, while 577X allele in endurance sports.

We examined 215 top athletes (129 males and 86 females). We divided the sports into groups according to Ahmetov. DNA was separated from blood using a DNA isolating Kit. PCR detections were done with Agilent 2100 Bioanalyzer. Statistical analysis was done by χ^2 probe, levels of significance were determined at 5%.

Hypotheses: Previously we assumed to get similar allele and genotypy frequencies to the foreign studies. We took it that there are statistical differences between the sport groups and also between the genders.

Results: In the whole sample genotype frequencies were the following: XX 16%, RX47%, RR 37%. We did not find significant differences between the various sport groups, but still the RR and RX allele combinations were highest in the acyclic sport groups. In group V. the allele frequency of X was the lowest and XX was completely extinct. There was no gender difference either. Compared to international standards in sprint sport R and RR variants should be higher (R: 72% vs 54%, RR 50% vs 30%). In our work we did not found any differences.

Conclusion: According to our results ACTN-3 gene variants can be connected to physical performance of top athletes, however this should be investigated with complex gene patterns in the future and the genetical datas also should be combined with biomechanical and spiroergometric measurements.

Eri Mikami-Noriyuki Fuku-Takahashi Hideyuki

Waseda University Tokyo Metropolitan Institute of Gerontology

Japan Institute of Sports Sciences

Supervisor: Masashi Tanaka, professor

Mitochondrial Haplogroups Associated with Elite Japanese Athlete Status

Background: Because mitochondrial DNA (mtDNA) encodes 13 proteins essential to oxidative phosphorylation, it is a candidate to contain variants influencing physical performance. Mitochondrial haplogroups, which are defined by the presence of characteristic clusters of tightly linked mtDNA polymorphisms, are reported to be associated with elite athlete status in Europeans [1, 2] and Africans [3]. Mitochondrial haplogroup distributions display geographical diversity; indeed almost all mitochondrial haplogroups in Africans and Europeans are not present in Asians including Japanese. The purpose of the present study was to examine the association between mitochondrial haplogroups and elite Japanese athlete status.

Methods: Subjects comprised 139 Olympic-standard Japanese athletes (79 endurance/middle-power athletes: EMA, 60 sprint/power athletes: SPA) and 672 Japanese controls (CON) from the mtSNP database (http://mtsnp.tmig.or.jp/mtsnp/index_e.shtml). The fragments of mtDNA containing the hypervariable sequence I (m.16024 – m.16383) and three protein-coding regions (subunit 2 and 5 of NADH dehydrogenase and cytochrome b) were sequenced. Subjects were classified into 12 major haplogroups (i.e., F, B, A, N9a, N9b, M7a, M7b, M*, G2, G1, D5, and D4). Haplogroup frequency differences between EMA and CON, and between SPA and CON were examined by Chi-square tests. For haplogroup analysis, each haplogroup versus the sum of all other haplogroups was compared.

Results&discussion: EMA showed an excess of haplogroup G1 (odds ratio: 2.52 [95% confidence interval: 1.05-6.02], $p=0.032$), with 8.9% compared to 3.7% of CON, whereas SPA displayed a greater proportion of haplogroup F (odds ratio: 2.79 [95% confidence interval: 1.28-6.07], $p=0.007$), with 15% relative to 6% of CON. According to sequences of the protein-coding region of mtDNA, EMA-related haplogroup G1 is characterized by two polymorphisms: m.15323G>A and m.15497G>A. These polymorphisms cause Ala193Thr and Gly251Ser replacements in the cytochrome b, which is a subunit of the Complex III. SPA-related haplogroup F is also characterized by a polymorphism: m.13928G>C. This polymorphism causes a Ser531Thr replacement in the NADH dehydrogenase subunit 5, which is a component of the Complex I. It is possible that these amino acid replacements might influence the functions of cytochrome b and NADH dehydrogenase subunit 5, contributing positively to endurance/middle-power and sprint/power performance in Japanese, respectively.

Conclusion: Our results suggest that mitochondrial haplogroups G1 and F are associated with elite endurance/middle-power and sprint/power athlete status in Japanese, respectively and may implicate the functional polymorphisms identified.

Reference:

1. Niemi AK, Majamaa K. Mitochondrial DNA and ACTN3 genotypes in Finnish elite endurance and sprint athletes. *Eur J Hum Genet* 2005;13:965-9.
2. Castro MG, Terrados N, Reguero JR, et al. Mitochondrial haplogroup T is negatively associated with the status of elite endurance athlete. *Mitochondrion* 2007;7:354-7.
3. Scott RA, Fuku N, Onywera VO, et al. Mitochondrial haplogroups associated with elite Kenyan athlete status. *Med Sci Sports Exerc* 2009;41:123-8.

Alexandra Ruhr

University of Toronto Faculty Of Physical Education and Health, Toronto, Canada
Supervisor: Dr. Marius Locke, associate professor

Hsp 72 Expression and Nf-Kb Activation in Rat Extensor Digitorum Longus Muscle Following Aa Acute Bout of Exercise

Oxidative, thermal and cytokine insult resulting from exercise is associated with the up-regulation of a family of highly conserved molecular chaperones known as heat shock proteins (HSPs).^{1,2} HSPs possess an array of protective properties, including the ability to refold denatured proteins, prevent protein aggregation and remove irreversibly damaged molecules from the cell.^{2,3} In addition to its role as a molecular chaperone, the stress-inducible hsp72 has recently been found to negatively regulate the activation of nuclear factor kappa b (nf-KB),⁴ a redox-sensitive, polymeric transcription factor involved in a variety of cellular processes, including inflammation, immunity and muscle remodeling.^{5,6,7} Furthermore, exercise-induced up-regulation of hsp72 has been reported to be muscle-specific,⁸ time-dependent,⁴ and intensity-dependent.⁹ To examine patterns of hsp72 expression and nf-KB activation in the extensor digitorum longus (edl) skeletal muscle, male sprague-dawley rats (n=28) were exercised on a motorized treadmill at one of two intensities: 20m/min (for 30 min) or 30m/min (for 20 min). After 0, 2 or 24 hours of recovery from the acute bout of exercise, the animals were anaesthetized and edl muscles were excised and frozen in liquid nitrogen. Following tissue homogenization and protein determination, sodium dodecyl sulfate polyacrylamide gel electrophoresis (sds-page) and western blotting were performed to determine hsp72 protein content. In addition, nf-KB activation (nf-KB oligonucleotide binding activity) was assessed through electrophoretic mobility shift assays (EMSAs). Western blotting showed enhanced hsp72 content in the edl of exercised animals, with some evidence of a time-specific profile for hsp72 expression. Visual analyses of emsa autoradiographs suggest no increase in nf-KB dna-binding activity following exercise at 20m/min and 30m/min (regardless of recovery period). These findings suggest that exercise-induced up-regulation of hsp72 in the edl skeletal muscle may inhibit nf-KB activation.

1. Benjamin, I.V., & mcmillan, D.R. (1998). *Circulation Research*, 83, 117-132.
2. Chen, Y., Voegeli, T.S., Liu, P.P., Noble, E.G., & Currie, R.W. (2007). *Inflammation & Allergy-Drug Targets*, 6, 91-100.
3. Knowlton, A.A. (2006). *Cardiovascular Research*, 69, 7-8.
4. Yoo, C. G., Lee, S., Lee, C.T., Kim, Y.W., Han, S.K., & Shim, Y.S. (2000). *J Immunol*, 164, 5416-5423.
5. Karin, M., Cao, Y., Greten, F.R. & Li, Z-W. (2002). *Nat Rev Cancer*, 2, 301-310.
6. Coussens, L. M., & Werb, Z. (2002). *Nature*, 420, 860-867.
7. Rayet, B. & Gelinas, C. (1999). *Oncogene*, 18, 6938-6947.
8. Locke, M., Atkinson, B.G., Tanguay, R.M., & Noble, E.G. (1994). *Am J Physiol Cell Physiol*, 266(5), C1240-C1246.
9. Milne, K.J., & Noble, E.G. (2002). *J Appl Physiol*, 93(2), 561-568.

Biborka Kocs

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Gábor Szóts, assistant professor

Consultant: Dr. Mihály Kocs, physician

A Study on Bone Structure of Pre-Pubertal Children

Introduction: In our present study we investigated one of the main health problems of the modern age: the musculo-skeletal anomalies during pre-puberty. The consequences of it could appear later as locomotor system disorders in adolescence and in adulthood. The main causes of it could be: inadequate nutrition, non-adequate physical activity, intensive growth.

Hypothesis: 1. We supposed that the „explosive” growth had marked influence on the development of the musculo-skeletal disorders. Even in case of fast growth, the length and the diameter of the bones are growing parallel, but the development of the cortical region could delay. It could be resulted in decreased bone stability and there could also be a compensatory malconstruction of the trabecular region.

2. When fast growth is constant, the reconstruction of the trabeculas might not be enough. Firstly, small cavities could be seen in the trabecular structure, then they may become larger and larger. Therefore, the stability of the bones may decrease, so they could be deformed and those deformities could result in developing musculo-skeletal disorders, as well.

Subjects and examination methods: Our sample embraced 113 pre-pubertal girls and boys aged between 9 and 12 years. We investigated the effect of the speed of growth on the structure and mineralisation of the bones. The distal radius on the non-dominant side was measured by XCT 2000 pQCT. The classification of children is demonstrated in percentage distribution values in the subgroups. Trabecular bone structure was categorised as follows:

- Normal - homogeneous structure;
- Porous – holes, smaller than 5 mm² areas;
- Cavernous – holes, bigger than 5 mm² areas;

The intensity of the growth was between 3 to 18 cm per (last) year. On that base, children were divided into 3 subgroups:

- average - between 5-10 cm/year;
- low - less than 5 cm/year;
- high - more, than 10 cm/year.

Results: By our results we can state that: of the boys, 40% of them belonged to the normal bone category, though only 20% of the girls (all of them were athletes) was included.

The rates of the boys and girls in the porous subgroup were 35.4 and 32.4%, respectively.

The cavernous subgroup embraced 24.6 % of the boys, while in girls its value was almost doubled with 47%.

Conclusion: In both boys and girls higher rate of children tend to belong to the porous or cavernous groups, namely 60 and 80 %, respectively. In girls, the highest representation of the subgroups was found in the cavernous, the most problematic group. In summary, the vast majority of the whole sample might have higher risk of juvenile osteoporosis, or compressed fractures and incongruency in joints.

We think that the most important outcome of our study is that because of the cavity formation in the bone structure could weaken the skeletal system, we must take into consideration the higher risk of exposure to deformity in pre-pubertal and pubertal children. As consequences of the bony deformities, asymmetries and muscle functional deviations could also be occurred.

We need to go on investigating bony development for better understanding through the growth process.

Radoslaw Michalski

Józef Piłsudski University of Physical Education in Warsaw, Poland

Supervisor: Andrzej Wit

Application of Artificial Neural Networks in the Assessment of Normal Gait Symmetry of People with Locomotive Dysfunctions

Introduction: The aim of this study was to assess normal gait symmetry of healthy subjects and subjects with selected locomotive dysfunctions.

Material: 70 subjects were examined (43 females and 27 males). The subjects were divided into two groups: A – healthy subjects (n=50), and B – subjects with selected locomotive dysfunctions of lower limbs (n=20). Females and males body height respectively amounted to: 165,5±6,3 cm and 178,6±7,4 cm; body mass: 65,8±12,2 kg and 79,1±12,1 kg; age: 39,1±20,1 years and 42,0±20,4 years; and BMI index: 24,0±4,3 and 24,8±3,9.

Methods: The assessment of gait symmetry was based on vertical ground reaction force (GRF) measurements, performed with the use of a dynamometric platform (Kistler). The force signal was recorded with the frequency of $f=100$ Hz. In order to analyze the experimental data, the symmetry index (SI) was employed. SI was calculated from the equation: $SI=2(L-P)/(L+P)*100\%$, for 3 characteristic points of each curve (F1, F2 and F3 respectively to first maximum, minimum and second maximum).

Using the Statistica 7.1 program, the artificial neural network (ANN) was created to classify different types of gait asymmetry. The basis of networks' training was a training set, which consisted of 80 sample charts of vertical GRF. Those sample charts were divided into 4 groups (according to interrelation between the curves representing both lower limbs), which represented different types of asymmetry.

Results: ANN has classified the experimental data into following way: in group A, there were 33 “symmetrical” cases, 11 “right shifted” cases and 6 cases in “amplitude differences” category. In group B, there were 17 “symmetrical” cases, 2 “right shifted” cases and one case in “amplitude differences” category. None of the cases was categorized as “left shifted” type of asymmetry.

The results of SI calculation in group A were as follows: 10,3%±6,5% , 12,7%±7,7% and 17,9%±17,4% respectively for F1, F2 and F3 point; and further, for group B: 7,8%±6,2%, 15,5%±9,3% and 25,5%±13,6%. By Mann – Whitney U test, no significant difference was found between both examined groups.

In both groups there was a high percentage of symmetrical cases, however the difference between symmetrical cases amounted to 19% in favor to group B. In addition, results of each case classification was compared to SI ratio. It was found that the lowest SI value of non – symmetrical cases accounted to 15,8% in group A, and 20,8% in group B.

Conclusions: Obtained results confirm that compensation mechanisms are involved in normal gait of people with locomotive problems and dysfunctions. Vertical component of GRF seems to be an indispensable, but insufficient parameter in state of gait symmetry and quality assessment. Hence, it's impossible to make univocal conclusions on gait symmetry while analyzing only the GRF data. In order to include various parameters describing human gait mechanics, the integrated SI should be employed in future research on normal gait symmetry.

References:

- Barton G., Lisboa P. et al.(2007). *Gait & Posture*. 25, s. 374-379.
- Sadeghi H., Allard P. et al.(2000). *Gait & Posture*. 12, s. 34-45.
- Chao, E. Y., R. K. Laughman, et al. (1983). *Journal of Biomechanics* 16(3): 219-233.

Anna Pottyondy - János Négyesi

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Levente Rácz, senior research worker

Consultant: Sándor Sáfár, PhD student

Transfer Effects of Neuro-Muscular Adaptation of Several Muscle Groups and their Relation to the Jumping Power

Introduction: In the previous research it was proven that the reactive dynamometric training resulted in significant improvement in efficiency, and permanent adaptation of the neuro-muscular system. In the present research it was studied what correlation exists between the efficiency in complex joint movement and adaptations of several muscles. Additionally it was also studied if there is any transfer effect between the elements of the kinetic link.

Hypotheses:

1./ It was supposed that there is no correlation between the mechanical variables characterizing the neuro-muscular adaptation and the vertical jump and factors influencing it.

2./ The adaptation having formed on one of the muscle group of the kinetic link has no effect on the improvement of intra-muscular coordination of another „link of the kinetic chain”.

Condition of the research: Examination and a control group was formed from 48 undergraduates. 12 person did a knee-, 12 person made a hip-, and 12 person made both of joint reactive training with the Multicont-II-dynamometer. And the remaining 12 person formed the control group. First the concentric mean power, the contact time and the flying time of the vertical jump was measured by MuscleLab&Power System. Furthermore the maximal knee and hip angle from the drop jump was fixed by APAS. We raised the drop height from the platform in step of 10cm. The jump performed with maximum mechanical power was selected and investigated in case of each student. The maximal concentric angular velocity and acceleration were determined without pre-stretching, then with the slow ($\omega=20$ %/s) and fast ($\omega=200$ %/s) eccentric pre-stretching from the fixed optimal position. The pre-stretches started on 50% of the maximum isometric torque, with a 25° higher position than the angular velocity results obtained from the jumping tests. The optimal stretching energy of the fast pre-straining, was determined as amount of energy, from which the fastest concentric angular velocity was reached. The eccentric peak torque, the initial concentric torque and the length of the time period between these two points of torque-time curve were stated. The subjects did the reactive dynamometric training with optimal energy. For 3 weeks (3 times a week) the participants did 4 series additionally 8 reactive contractions in series. After the 9th training the mechanical variables determined at the starting level were also measured. Discrepancy from the mean was determined with the Student's T-test and the relationships between the variables were calculated with correlation calculus.

Results: A significant correlation was registered between the development of acceleration, development of angular velocity, development of coordination and jumping power.

The formation and correlation of the variables describing the neuro-muscular coordination and adaptation of several muscles clearly defines the transfer effects existing between the kinetic links.

Summary: The results and methods used can give the complete psychomotor background of the development of the reactive force of leg and efficiency of jumping more objective and individual.

Aghabegloo, Mahmoud

Islamic Azad University, Islamshahr Branch

The Effects of Creatine Supplementation on Lactate, Nitrate and Nitrite

Creatine supplementation has been shown to alleviate endothelial dysfunction and improve exercise performance through increasing nitric oxide production in patients with cardiopulmonary diseases. In addition, creatine supplementation could decrease accumulations of lactate and ammonia, metabolites involved in development of muscular fatigue. The aim of this study was to investigate the effect of short-term creatine supplementation on performance in intermittent anaerobic exercise and the underlying mechanism in well-trained male athletes. Ten elite male college wrestling athletes participated with a randomized crossover, placebo-controlled design. The subjects consumed 20 g/day creatine (CRE trial) or placebo (CON trial) for 5 days then performed an intermittent anaerobic exercise test on a treadmill. Blood samples were collected before supplementation, before and during exercise and 10 and 30 min after exercise. CRE trial had significantly higher creatine concentrations than CON trial at the same time point before, during and after exercise. There was no significant difference between the 2 trials in plasma nitrate and nitrite, lactate and ammonia concentrations and peak and average power in the exercise. The results of this study suggested that short-term creatine supplementation had no effect on production, lactate and ammonia metabolism and performance in intermittent anaerobic exercise in well-trained male athletes.

PSYCHOLOGICAL & PEDAGOGICAL ASPECTS OF PHYSICAL MOVEMENT SECTION

Attila Szendrei

Eötvös Loránd University, Faculty of Education and Psychology, Budapest, Hungary
Supervisor: László Balogh, assistant research worker

Sport as Coping Strategy in the Sphere of the Managers

In today's major problem is coping with workplace caused stress, especially for the managers who takes big responsible. They have to fit to the leader's expectations, coordinate the employees, and keep deadlines. Based on these we can say managers need to have personality features like perseverance, tolerance of monotony, quick considering skill, mobility, flexibility, result-oriented, problem based approach, team spirit. Previous researches demonstrated the juvenile active sport correlates with the development of positive personality features, based on this fact I suppose the athlete's past reports advantages at manager profession.

The psychology discovered much kind of coping strategies, the three main are: problem based, emotion based and diversion coping strategies. The nature of this profession claims problem based coping strategy, previous research proved (Bahrke & Morgan, 1978) sport is an emotion based - attention diversion coping strategy. From this fact I suppose that managers on short distance elect problem based, on long distance choose emotion based coping strategy.

I am using two different questionnaires, the first is BIG FIVE personality questionnaire, the other is a coping questionnaire.

The questionnaires have been sent to the participants of the research, the evaluation is in process.

Emese Márkus-Attila Tóth

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. László Révész, assistant professor

An Analysis of Coping Skills in Triathlon

Introduction: Ever since the first competition, which took place in San Diego in 1974, the popularity of triathlon increased to such an extent that it was included in the Olympic Games by the millenary. The question of what the co-factors contributing to success in such a young sport may be occurred to us. After studying the Hungarian scientific literature in connection with triathlon it became apparent that the scope of knowledge required for professional development is incomplete. The primary goal of our study was to help and support the development of the sport with empirical data and research results. The subjects of our research were athletes, who take part in Heraklész program, at the age of 14-15 (adolescents) and 16-17 (youths). We studied and compared their psychological features. We focused on their competitive state and their coping skills in sports, as these are the most influential factors that define performance and success.

Hypothesis: 1. The psychological capacities of the two age groups are significantly different.
2. The cognitive and the somatic state anxiety are lower in the case of youths athletes.

The subject and the method: The data survey was conducted with questionnaires (N=30). Age average: 15,37 years; 47% male, 53% female. The mathematical statistical analysis was carried out by the SPSS 16.0 program. The study aiming at the competitive state (CSAI-2) monitored the emotions preceding the start, which significantly influences the success of the athlete. The test for coping skills in sports (ACSI-28) analyzes the probable behavior during preparation and competition. The results show at what level an athlete is able to do their best during training sessions and races.

Results: The difference between the psychological capacities of the two age groups was shown by the ability of concentration and peaking under pressure. The ability of concentration is higher in the case of youths female athletes. After examining both age groups, we found that the ability of concentration and peaking under pressure are higher with adolescents athletes. Youths male athletes had significantly lower cognitive competitive distress (40,28%:50,69%) and their level of self-confidence was higher than that of the adolescents male athletes (69,44%:61,46%). The overall picture of adolescents athletes as well as alongside the gender division showed more cognitive and somatic competitive distress than the more experienced youths athletes. Both groups proved to be highly coachable. Female athletes (84,38%) were more coachable than males (79,02%), but at the same time girls showed lower level of the ability of coping with adversities (58,98%:69,64%). Male athletes were found to have high level of freedom of worry. The lowest sample are also important for our study. In the case of adolescents athletes this sample was the ability of peaking under pressure. There is space for improvement for male youths athletes in mental preparation and goal-setting, for female youths athletes in coping with adversities in order to become more successful in the coming years. For adolescents athletes the ability of peaking under pressure needs to be improved for achieving success.

Conclusion: The youths athletes have better psychological features which is attributable to their age and their competition-experience. Both male and female youths athletes have higher level of self-confidence. Therefore their cognitive and somatic state anxiety are lower. Youths athletes are more likely of peaking under pressure as they are more capable of doing their best. Therefore their concentration ability is also better than adolescents athletes.

Nadezhda Pakhamovich

Russian State University of Physical Culture, Sport and Tourism, Moscow, Russia
Supervisor: Dr. Irina Absaliamova, professor

The Investigation of the Complex Coordination of the Second Part of Figure Skaters` Free Skating

The Problem: statistic analysis of figure skaters` free programmes.

The Object of the Research: figure skaters (men and women):

A) Senior professional athletes taking part in The European Championships, in The World Championships and in The Olympic Games.

B) Junior professional athletes taking part in different Junior ISU competitions.

The Subject of the Research: free programmes of figure skaters of different sports qualification - Senior professional athletes and Junior professional athletes.

The Hypothesis of the Reseach:

A) The complex coordination of the second part of free programmes among the figure skaters who have the same sports qualification directly depends on sportsmen`s rating.

B) The complex coordinaton of the second part of figure skaters` free programmes directly depends on the sports qualification.

C) The complex coordination of the second part of free programmes for men is higher than for women.

The Aim of the Research: learning the difference of figure skaters` free programmes accoding to the new ISU Judging System paying attention to the second part of the programme. Researching the dependence of free programmes complex coordination on different factors.

The Tasks of the Reseach:

A) To make the statistic analysis of the complex coordination in the second part of free programmes for men and women of different sports qualification.

B) To make the comparison of the complex coordination in the second part of free programmes for figure skaters with different rating.

C) To make the comparison of the complex coordination in the second part of free programmes for figure skaters of different sports qualification.

D) To make the comparison of the complex coordination in the second part of free programmes for men and women.

The Methods of the Reseach:

A) Analysis of different literature including ISU judges` detailed protocols of different ISU competitions.

B) Video materials of different ISU competitions.

C) The method of mathematical statistics.

The problem of the research gives us an opportunity to see the dependence of the complex coordination in the second part of figure skaters` free programmes (because of the special credits for all jumps in the second part of free programmes) on different factors (sportsmen`s rating, their qualification and sex) and to see the influence of the complex coordination in the second part of the programmes on the final results.

Dóra Görögh-Attila Heim

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. Csaba Ökrös, associate professor

Comparison of Elite Handball Players Related to Attacking Positions on the Evidence of Psychological Investigation

In elite sport, as in case of handball, positive forming of performance is many-sided. As handball is a psychomotor activity (Ökrös, 2007), the performance of players in a match shows not only the technical-tactical and physical preparedness, but requires a high level of psychic activity, as well. This paper studies the mental abilities of men and women handball players in relation to the different attacking positions. The answers for the following questions were searched for: Has the level of aggressiveness an effect on ranking the players for certain positions? Does the emotional background influence the suitability for that position? Is there any correlation between the position of the players and his/her type of personality?

Literary review: Personality of players shows differences that determines their actions, motivations and attitudes on the court. The personality of the players has to be taken into consideration when choosing their posts, best matching their abilities.

Hypotheses: It was supposed that the assertive level of women is lower, than that of the men. The wingers are the least assertive. The men are more stable from emotional point of view than women, and men goalkeepers have the lowest value in the neuroticism scale (on the emotional scale.) The last supposition was that handball players are extroverts.

Methods: The Eysenck Personality Questionnaire (EPQ) was used. 8-8 female and male professional handball team were examined. The results were processed with the Kriskal-Wallis Anova statistical method based on the EPQ. The results are demonstrated by diagrams and tables.

Results: The results show that the backcourt players have the lowest average in the psychoticism scale, but there are not significant differences between the males' and females' assertive level. There are significant differences between the neuroticism level of men and women. The pivots seem to be the most stable from the point of view of emotion. No significant differences were found between the posts. Each handball players has a higher than average value on the extroversion scale, so they are sociable people.

Conclusions: Handball rules allow the physical contact. Handball players should have a certain level of assertivity if they want to succeed on the court. The more stable emotions of men are not surprising, as it has been already proven among civilians as well. The expectations that male handball players have an open personality were also met. It can be explained by the fact that if the players want to increase the performance of the team, they should form situations from the elementary to the highest tactical solutions together, in unison.

Ágnes Kovács-Dániel Somoskői

Eötvös Loránd University, Faculty of Pedagogy and Psychology, Budapest, Hungary
Supervisor: Dr. Róbert Urbán, associate professor

Smoking and Physical Activity

Introduction: The Budapest adolescent smoking study is a longitudinal study on the determinants of smoking. Our main goal was to test the cross-sectional association between level of physical activity/inactivity and smoking.

Participants and procedure: The sample was composed of 2565 high school students (mean age = 15.3 years, sd = 0.56 years; 1251 boys and 1314 girls). The participants were asked to complete the questionnaire in their classrooms within one class session.

Measures: Measures included self-reported smoking, questions related to physical activity and inactivity (time spent watching television or playing computer games). Four levels of smoking status were identified: never tried (37.7%), experimenter (tried it but did not smoke during the past 30 days, 31.1%), intermittent smokers (did not smoke every day during the past 30 days, 19.7%), and regular or established smokers (smoked every day during the past 30 days, 11.5%).

Method: All statistical analyses were performed with spss 17.0. A principal component analysis of physical activity and inactivity questions analysis revealed two principal components, namely physical activity and physical inactivity. The two components explain 54.5% of variance. The standardized score of the components are used in latter analyses. Analysis of variance (anova) of physical activity and inactivity. Two-way anova analyses were performed on physical activity and physical inactivity scores.

Results: Significant main effects were found in physical activity component along gender and smoking status ($f(3)=6.2$, $p<.0001$), but (gender x smoking status) interaction was not significant. Post hoc analysis revealed that the non-smokers have the highest level of physical activity. As for inactivity the gender ($f=33.0$ $p<.0001$), smoking status ($f=9.0$ $p<.0001$) and (gender x smoking status) interaction ($f=5.6$ $p<.001$) were significant. In girls physical inactivity monotonously increases along smoking status, in boys the pattern is more complex.

Discussion: In this study we found that the levels of smoking and physical activity were inversely related. The most common explanation is that positive and negative health behaviors simply cluster together. Smoking may be seen as incompatible with the rewards that adolescents wish to achieve from physical activity and competition. In addition, we would like to examine that, adolescent students who are physically active, have less chance to start smoking. For this we will compare the present data for their smoking state with the data of their condition on this case a half year later. To prevent adolescent smoking we suggest that health educators should increase the level of physical activity in schools and involve adolescents in competitive sport activity both within school context and out of schools.

Acknowledgement: The present research is supported by the program for increasing capacity for tobacco research in hungary grant number: 1 r01 tw007927-01 / national institutes of health.

Aneta Guz-Maciej Laszuk

Josef Pilsudski University of Physical Education in Warsaw, Poland

Supervisor: Jolanta Danielewicz, professor

Athletics in Awareness of Primary School Students in Municipal and Rural Regions

In physical education in contemporary primary schools, athletics as a sport discipline attracts less interest than it used to do many years ago. The students are not convinced whether it is still the Queen of Sports.

Students from the Academy of Physical Education, being athletes, are much interested in which place the athletics takes in awareness of primary school students. Answer to this question can be found through professional practice in schools in cities and rural areas in Biała Podlaska and the region outside the city.

Main objective of the work was to analyse the awareness of athletics among primary school students in cities and rural areas with particular consideration of the attitudes, interests, knowledge, practicing athletics-related sports and participation in competitions. The investigations, carried out in September 2009, encompassed 198 students from primary schools in Biała Podlaska and 222 students from primary schools in Piszczac, Cicibór Duży, Kobylany and Tuczna, aged 12 and 13. A method of diagnostics survey using opinion poll technique. Author's questionnaire concerning athletics perceived by students from schools in cities and rural areas allowed for collecting of research material. Within the diagnosis of 'awareness of athletics', students' attitudes, interest, knowledge and participation was assessed. In the development of statistical findings included percentages and test the independence chi-square.

The investigation shows, that attitude of the investigated students from both environments towards athletics are majorly positive. Interest of the students in athletics, which was assessed on the basis of athletics events viewing ratings, was proved to be insignificant. Knowledge of athletics among the respondents is low in general, however, they can provide characteristics rather than mention famous team members in the sport. The scope of participation in athletics competitions test students from both cities and rural areas is large. The athletics events most willingly practiced by the respondents include long jump, sprints and throwing tennis-ball-size rubber ball.

Péter Gabrovits-Sándor Török

Juhász Gyula Teacher Training Faculty P. E. and Sport sciences Institute, Szeged, Hungary
Supervisor: Dr. Zoltán Szatmári, associate professor

Practical Testing of Success Oriented and Failure Avoiding Behavior of Elementary School Students

We tried to test the ratio of success seeking and failure avoiding personalities in this work examining elementary school students. We used a theoretical test and practical surveying. We borrowed the theoretical test from a book, which consists of similar questionnaires (Tóth László – Pszichológiai módszerek a tanulók megismeréséhez). The practical part consists of 3 exercises goal kicking beam exercise and aiming a target with ball. We set up a pointing system and determined which kind of personality the child belongs to. We analyzed the results according to gender and whether or not the child sports, because these answered our questions and hypothesizes.

Our first question was that how much are different or alike the success seeking and failure avoiding children in the two parts. The results were different in both persons and numbers, in every aspect and thus our hypothesis was right. We can explain it because the children do not know the limits of their abilities, and thus the theory and practice differs.

The second question was about the difference between the genders. The boys seemed to be more success seeking and so our second hypothesis was restored too. We think it is possible because the boys are braver in this age and so they take greater risks than the girls.

The examination of our third hypothesis brought the greatest specialty. Those who do sports are more success seeking. This statement was published many times. In the theoretical part it wasn't but in the practical part it was proved to be correct. We think that the explanation here is also that children don't know the limits of their abilities yet. We also think another explanation is that because not all children do sports for a long time, it couldn't have a great affect on their will to compete yet and thus they won't always be more success seeking than those who do not do sports.

Marcell Ipach

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Piroska Szalay, assistant professor

Consultant: Dr. Kornél Sipos, professor

Comparison of Motor Performance and Social Anxiety (SASC) of 10-12 Year-old PE Class and Music Class School Children

Objectives: Methods/Subjects: motor performance (static hanging with bent elbow/sec, standing long jump /cm, number of sitting up during 30 sec), and social anxiety measures (social anxiety and distress in new situations /SADN, fear of negative evaluation/FNE, and social anxiety and distress in general/SADG) were compared for PE class and music class school children of 10-12 year of age (N=132, PE student group=79, music student group = 55). BMI served the differentiation of slim(G1), average (G2) and overweight(3) boys and girls according to Mészáros (2005). Basic statistics, Pearson correlation, ANOVA, and linear regression analysis, Cronbach alpha and part-whole correlation had been done with SPSS 15.0 for Windows.

Results: The only sex difference was found in BMI. It was significantly higher for boys than girls. Calendar age correlated only with standing long jump for boys.

There was no statistically significant difference between PE class and music class students neither in the motor performance tests, nor in social anxiety.

The most significant differences occurred for body weight subgroups with different feature in boys and girls. ANOVA revealed longer static hanging with bent elbow and more number of sitting up in group 1 /2 than in group 3 for boys. Standing long jump results differ significantly for groups 1/2 from group 3 (boys), and group 1 from group 3 (girls).

The regression analysis, in the groups of boys, supported the casual relation between static hanging with bent elbow and FNE, and between the calendar age and standing long jump.

Conclusion: The students of different specialized classes do not differ from each other in motor performance and emotional characteristics.

Anna Protzner-Dóra Lasztovicza

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Katalin Kovács, associate professor

The Effect of Additional PE and Music Education on the Elementary School Students Sociometric Status

Introduction: It is well accepted that the development of social behavior starts early in a child's school years, in the institutional school system where the student can practice social abilities daily within his age group. Study in school happens in a community, which assumes cooperation, while mastery is individual (Nádasi, 2001). To develop personality, physical skills and/or social qualities and abilities must be used as an educational tool. At the same time, parental expectations and perceptions of their child's cognitive and motor skills development serve to affect the transition to the school environment (Coates, Wagenaar, 1999).

Hypotheses: We hypothesize that additional PE and music education positively influences group structure.

In particular, we postulated that the relationship between boys and girls will improve with additional PE and music education classes.

Further, the number of marginalized students and the distance between these students and the „class community” will be lower in those classes which participate in additional PE and music education classes than in the control class.

Experimental groups: The participants were 7-8 years old students from three different elementary schools in XII. District of Budapest, Hungary (PE class N=25, Music class N=28 Regular class N=27). The experimental school held PE and music classes daily while in the regular school classes were held twice a week.

Experimental method: Sociometric status was measured with Shellenberger's Group-Evaluative Method (1990). We extended the matrix to the 'Y' scale which graphed the average score the student gave to each classmate, which is a measure of how willingly they would they participate in a play with each of their classmates.

Results: Our results did not show any statistically significant differences, although trends were apparent.

We will review these trends graphically in our presentation, and offer these as training aids to all teachers. In our initial examination we observed some tendency differences between the groups' structures. In the music group the students were most positive about their classmates. The regular class students evaluated each other mainly in the indifferent zone, and this was the results of methodical education will be statistically significant with time, and thus we propose to continue our experimental observations for several years.

Anna Szisz-Megellai Emese

Eötvös Loránd University, Faculty of Education and Psychology, Budapest, Hungary
Supervisor: Júlia Bősze, assistant research worker

Social Concerns of Sport Motivation

Is it true, that sportsmen and sportswomen evaluate more the appearance than the non-sporting? Are they motivated, or would they be motivated by their partner if he/she would be more successful than they are? Is there any difference between the attitude to relationships? We asked around 100 young people who are doing sports for recreational reasons, and the same amount who are sport professionals (ELTE recreation students). Most of them were between 19-23.

We also took part in a larger survey about sport motivation and we used those results as well in our project. We wanted to know the main reasons why these people do sports, first of all not in a professional level, and figured out, that the companion, the social environment ment a lot to them. Is there any connection or correlation between the sport motivation and the partner choice? So if somebody spend a lot of time in sporty companion, it will surely influence their partner choice? What are the most determinating factors of the partnes choice? Has the build bigger roll for recreation students then for the other youth? We can know it for sure, that sharing a whole life with someone who has similar interests, provides a much higher level of life.

Anna Lerch-Dóra Boldizsár

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Éva Leibinger, assistant lecturer

Consulate: Dr. Pál Hamar, associate professor

Empirical Examination of Hungarian and French Athletes' Motivation and Feelings Connected with Sport

Motivation is a central problem in sport sciences. On the one hand motivation is a consequence of social development including the subject of competition, or coach-behavior, anyway as the individual developing effects on behavioral norms manifesting in the process of learning and performing. (Duda 1989; Vallerand 1987). Mood is generally defined as a state of emotional or affective arousal of varying but not permanent duration. (Weinberg and Gould, 2007) Mood state is a situation dependent, fleeting-transforming answer to the environmental stimulus. (Cox, 2007)

Our research using psychological methods supposed to find the answer to the following questions: What kind of motivation structure is represented by our subjects? What individual mood state is indicated by our subjects in the preparation period?

In our hypothesis it has been presumed that external motivator is less represented in case of French gymnasts. It has been assumed that in case of gymnasts the intrinsic motivation toward accomplishment has more emphasis than in case of ballgames athletes. It has been presumed that higher intrinsic motivator factor is due to have higher vigour value.

The shortened version of Profile Mood State Scale (POMS) as well as Sport Motivation Scale (SMS) were filled out by French and Hungarian gymnasts and ball-game players (football, basketball, volleyball, handball) during a preparation period in 2008. POMS was originally published by McNair, Lorr and Droplemann in 1971. The 40-item version has been used since 1992, while Sport Motivation Scale was created and examined by Pelletier in 1995. Both female and male athletes were examined with different age and sport-experiences. SPSS Program was used during the statistical analyses.

The Hungarian gymnasts represented higher value in the level of extrinsic regulatory and in case of introjected regulatory as well as lower value in identified regulation. In aspect of gymnasts' feelings fatigue and depression were showed a higher value. Total Mood Disturbance (TMD) was represented with higher value by French athletes. On the side of different sports it has been found out that ballgame players represent significant higher anger value, while gymnasts indicated an emphasized intrinsic motivation toward accomplishment. It has been brightened up, that two of internal motivator correlates with vigour factor.

We hope that our results help for coaches to make the preparation period smooth and fluent. Cooperation can work if athletes understand each others' feeling, mood and motivation. The different motivation-structures and personalities make this process difficult, even in individual sports like gymnastics, or team sports such as basketball, football, volleyball and handball. All of these factors as well as mental, psychological and physical skills are contribute and manifested in the final achievement.

Katalin Szigeti-Lea Éva Tóth-Anna Szisz

University of Szeged P. E. and Sport Sciences Institute, Szeged, Hungary

Supervisor: Dr. Péter Fritz, assistant professor

Comparative Analysis of Motivations for Recreation in Szeged and Budapest

The lack of exercise and sedentary life-style is a characteristic of the contemporary modern society. The inactivity can cause illness. According to the survey of Hungarostudy conducted in 2002 75% of the adults do not go in for sport regularly in Hungary. So it is extremely important to explore the motivations of doing sport, and with the help of the results we can effectively inspire the population to go in for some sport.

In our research we would like to focus only on recreational motivations. The results prove that there is a correlation between the activity in sport and the sex from the flapperdom. On the average the sport inclination of the men is higher than women's. We also experienced this difference between men and women, but our results show that the age is more determinative than sex.

We noticed that two factor of motivation (the emotional effect and health) stand out from the others. Since our primary aim is to make people go in for sport as young as it is possible, we should mention that (according to our experiences) the most significant motivation for young people is the emotional effect, which is gradually replaces by the health with the advance in age. We made a statistical analysis about the relationship between the dominant motivations and repartition regarding age groups. This analysis proved that this relation mentioned above is significant (Pearson's chi-square test: $p < 0,0001$).

The target of our research was to represent a more sophisticated view about the sport motivations. In our opinion our results can be a basis of further comprehensive searches about sport motivations. We can extend the investigation to additional factors e.g. settlement, qualification, social status. This factors an influence the sport inclination and the motivation background as well.

We offer our results to the students who would like to find a job in the field of sport and health in the future; to the specialists who fight for the spread of sport widely; to the institutions and organisations connected to sport activity; and of course to everybody who are interested in the motivation background of sport and recreation.

SOCIAL SCIENCES AND KYNESIOLOGY & SPORTMEDICINE PHD SECTION

Norbert Kovács - Levente Vágó

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Katalin Keresztesi, associate profesor

Importance of Running Speed, Jumping Ability and the Jumped Result in Long Jump

Introduction: Long jump is one of the most popular Track and Field Event for university students.

It is relatively simple event and do not need too many implements, just a runway and a suitable long and wide sandpit needs for practice.

The approach speed and its correlation with the jumping result was one of the most important issues of the studies on different track and field jumping events. The first published measurement of the approach speed was made in 1960, which opened a new dimension to find the importance of speed in jumps.

The results showed that there is a high correlation between the approach speed and the jumped result among top level athletes. For example, if the approach speed improves with 1 m/s, it can result in a 0.9-1 m improvement in jumping length for top level athletes. Many times we have found very high linear correlation between approach speeds and jumping results.

Of course we know that success in this event is many sided. Approach speed is an important factor, but it is also possible to improve performances without increasing approach speed.

Improvement in takeoff techniques and landing techniques as well as strength development of the trunk and leg muscles can lead to increased jumping length too.

Methods: Eighty-two well-trained physical education university students (40 women and 42 men) participated in an eight-week/eight-lesson unit on long jumping. None of the subjects had too much previous experience in this event, but all of them were proficient in relevant track and field and gymnastic skills. During the lessons they participated in traditional learning drills, followed by commonly accepted step by step elongated approach (4-6-8-10-12 running strides) jump attempts, and finally, a 12 stride approach long jump competition.

Besides registering their jumping results, a questionnaire was administer in order to find out the subjects' opinion about the relationships between their learning progression and initial motor skills in track and field.

Results: By the end of the eight weeks the women's averaged improved 0,30 m, men's average improvement was 0,26 m. We detected very high correlation among females between 60 m and long jump (0,8), but for males correlation was small (0,23). Fifty percent of the subjects indicated that their former sprint experience had the greatest positive inter task transfer on their learning progression.

The standing long jump was named as the most important even by 38.9% of subjects. The rest was named the high jump or did not give any answered. In addition, 83.3% of the subjects appointed jumping ability to be more important than running speed. The majority of the subjects (60.5%) felt the 12 strides as the most effective length for their approach, while others (21.9% and 15.4%) preferred 10 and 8 strides, respectively.

Dino Sourek

University of Split, Croatia

Supervisor: Damir Sekulic, professor

Metric Characteristic of New-Constructed Tests Valuating Specific Explosive Strenght at Fencers

Explosive strength as motoric ability is definitely highly represented among kinesiology as well as in practice and also in kinesiology theory, that is why it has always been represented with more or less objective motoric tests. Main aim was to construct new measuring instrument for evaluating specific explosive strength at fencers and to valuate some metrics characteristics on population of junior and senior fencing athletes.

Sample of the examiners included fifteen fencers (aged between 17 and 36) during Croatian national team championship. Five tests were chosen for this research, from which two of them were standardized, and three new constructed tests calibrated from specific fencing movements. The tests included: VJ-vertical jump and SLJ-standing long jump (standardized tests), LJFG-long jump from main fencing guard, SFLJ-step forward-long jump from main fencing guard and FL-fencing lunge (new constructed specific tests). As criteria of success in fencing we took three variables: number of succeeded hits, number of received hits, and difference between hits succeeded and received. Results of all variables have been processed by the computer program Statistica 7(StatSoft, USA). Descriptive statistics has been calculated by routine statistic methods. All five performed tests are proofed to be reliable with satisfying Cronbach alpha and Inter-Item correlation parameters. According to our expectations, using factor analysis for our five tests, one factor was isolated and that factor is explosive strength. Using pragmatic validity we demonstrated correlation between criteria and predicted variables for all tests. Significant correlation was point out between SLJ and SFLJ witch means that these two tests can have significant influence on result, with reference to efficacy of performance. We can conclude that metric characteristics of these presented tests on our sample of fencing athletes are satisfying, primarily new constructed test SFLJ which hereafter can be used on population of fencers for the purpose of transitive testing.

Attila Heim-Dóra Görögh

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary
Consultant: Dr. Csaba Ökrös, associate professor

Different Phases of Norwegian and Hungarian Women Junior Handball Matches. (A Comparative Analysis)

Introduction: Handball is a sport dominated by tactics (*Rigler, 2000*). From the point of view of tactics, four phases of a handball match can be distinguished, such as: offence against unorganized defence, offence against organized defence, defence while running back, organized defence.

The motivation of choosing the topic was to get to know the specificities of each four phases of the Norwegian team and to make a comparison with the similar data of the Hungarian one, and to find the reason why Norway excelled itself at the European championships and finally won the European Championship with no loss.

Hypotheses: 1. The team of Norway is more efficient in all four phases. 2. The team of Norway spends more time on defence than the team of Hungary. 3. The biggest difference between the efficiency of the phases can be found in the organized defence. 4. The frequency of the offence against unorganized defence is higher with the team of Norway.

Methods: Twelve matches of the Norwegian and Hungarian woman junior handball teams (played at the European Championship in Hungary in 2009) were analyzed with video observation. The main observation viewpoints were as follows: occurrence and time of the phases and the efficiency of the periods. The statistical differences between the matches were then processed with contingency table.

Results: The efficiency in the different phases of the Norwegian and Hungarian teams was: 42%-34% (offence against unorganized defence), 41%-32% (offence against organized defence), 50%-35% (defence while running back), and 65%-49% (organized defence). The time spent on defence was 10574 seconds with the team of Norway, while the team of Hungary spent 8564 seconds on it. The biggest difference between the efficiency of the phases can be observed in the organized defence: 16% (65%-49%). The team of Norway led 168 attacks against unorganized defence, while Hungary had 120 ones.

Summary: The team of Norway had a better performance in all the four phases, but the difference between the efficiency is not significant (hypothesis 1 has to be rejected). In spite of the fact that the team of Norway spent more time on defence, it did not result in statistical difference (hypothesis 2 proved to be invalid). The biggest difference between the efficiency of the phases can be found in the organized defence, but this difference is not significant (hypothesis 3 proved to be invalid). The team of Norway had more chance to launch an attack against unorganized defence than the team of Hungary but it did not result in statistical difference (hypothesis 4 proved to be invalid).

To sum it up, it can be said that the team of Norway was better in all phases of the match. They put the organized defence in the focus of their game. They spent most of their time and energy on it. It shows their concept of the play which is the base of the modern handball. The success of this phase can level up the other elements of the game and it can have an effect on the offence as well. It is such a future trend in handball that should be followed by all those teams who would like to reach great success in handball.

Péter Szájer-Mátyás Szeiler

Semmelweis Universtiy, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Csaba Sós, associate professor

Consultant: Dr. János Egressy, associate professor

The Effect of the Hand Paddle and Tempo Coordinator on Young Swimmer's Kinesthesia

The history of using training means are much the same age with the swimming sport itself. The use of different training means for training purposes got sweeping from the 70-ies, and began to improve remarkably.

During my examination I was wondering whether the training means, mentioned in the title have effect on the kinesthesia or not among other effects of them. The hand paddle made from plastic, and has a greater flat surface then the palm has. The tempo coordinator is flat on one surface of it, and convex on the other one. It was made from a solid material, which has the same density then the water has.

The examined subjects were age-group swimmers from the swimming club of FTC and TF. They swam eighth times fifty meter freestyle in two sets, after a hard warm up, starting on 1.45 seconds. The intensity should have been chosen in a manner they could maintain equal time of repetitions. There was 15 minutes resting time between sets. It was an active rest. In the first set the first four repetitions was swam with hand paddle and the second four was without it. In the second set the first four repetition was swam with tempo coordinator and the second four was without it

After swimming with hand paddle the average time of the set was worse, and after using tempo coordinator was better.

The results of my examinations hang together with the coaches opinion: despite the fact that both training mean have positive effects (improving the level of the swimming technique, strengthening the swimmer's muscle) the hand paddle bring down the tempo coordinator improve the swimmer's kinesthesia. In consequence of these the tempo coordinator should be used at the beginning of the training sets, and the hand paddle at the end. Based on these data, the coaches' opinion seems to be true: the use of tempo coordinator is more advantageous during trainings.

Alma Kisielienė

Lithuanian Academy of Physical Education, Kaunas, Lithuania
Supervisor: Dr. Rasa Jankauskiene, professor

Expression of Self-Esteem and Aggression by Adolescent Judo Athletes

Contemporary society witnesses the growth of the negative phenomena, which are often determined by an individual's relations with other persons, an inadequate self-esteem, lack of self-confidence, etc. Sport activity, continuous occupation good mutual team relations may affect an individual's emotional and psychological determination, stimulate activity, personal competences and inspiration for self-education.

Research tasks: to determine and compare the expression of aggression and self-esteem among the adolescent judo athletes and non-athlete adolescents; to explore the relationship between aggression and self-esteem with the achieved sport results.

Research sample: 48 respondents who practiced judo and 48 persons of the control group. Testing was carried out among 12-16 year old girls $n=42$ (37.5%) and boys $n=70$ (62.5 %). There were more boys among the judo athletes than among the non-athletes — 76.8 % and 48.2 % respectively ($\chi^2=9.75$; $df=1$; $p<0.05$).

The test was based on the Buss-Perry Scale 1992 aggression questionnaire. Self-esteem was determined by the Rosenberg's Self-esteem Scale 1989.

Research results and discussion: We attempted at finding out whether the adolescent judo athletes and the adolescents of the control group demonstrated a different expression of self-esteem and aggression. It came out that verbal aggression, anger and hostility were more often expressed in the control group (verbal aggression $\chi^2=9.73$; $df=1$; $p<0.05$; anger $\chi^2=9.67$; $df=1$; $p<0.05$; hostility $\chi^2=9.71$; $df=1$; $p<0.05$).

We explored how self-esteem and aggression differ between the sexes. The analysis of all the respondents showed that among the girls self-esteem was higher than among the boys ($\chi^2=9.68$; $df=1$; $p<0.05$). However, the girls demonstrated greater verbal aggression than the boys ($\chi^2=9.73$; $df=1$; $p<0.05$). Among the boys physical aggression was more expressed. ($\chi^2=9.72$; $df=1$; $p<0.05$).

The analysis of the judo athletes showed a similar tendency: the judo sports girls demonstrated higher self-esteem than the judo sports boys ($\chi^2=9.69$; $df=1$; $p<0.05$); however, the boys showed greater physical aggression ($\chi^2=9.71$; $df=1$; $p<0.05$).

In the control group, the statistically significant differences between the boys and the girls were obvious within the subclasses of physical and verbal aggression. Physical aggression was more expressed among the boys ($\chi^2=9.73$; $df=1$; $p<0.05$), verbal aggression was more expressed among the girls ($\chi^2=9.68$; $df=1$; $p<0.05$).

The statistically reliable relation between the types of aggression, self-esteem and sport achievements was not determined. The data of the research does not contradict the conclusions given in Rabazza, Bertollo, Bortoli's (2006) investigation, which claim that the high-skilled judo athletes demonstrate a lower level of fight anger than the average ones. Therefore it is considered that the high-skilled judo athletes show a better emotional control. The hypothesis exists that the winners are those who learn self-control which allows to achieve a higher degree of mastership.

References

1. Buss, A. H., & Perry, M. P. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology*, 63, 452-459.
2. Robazza, C., Bertollo, M., Bortoli, L. (2006). Frequency and direction of competitive anger in contact sports. *The Journal of Sports Medicine and Physical Fitness*. Vol. 46, 3, 501-508.
3. Rosenberg, Morris. 1989. *Society and the Adolescent Self-Image*. Revised edition. Middletown, CT: Wesleyan University Press.

Ryo Kakigi¹, Hisashi Naito¹, Yuji Ogura², Yuto Fukai¹, Toshinori Yoshihara¹, Noriko Ichinoseki-Sekine, Shizuo Katamoto¹.

¹Graduate School of Health and Sports Science, Juntendo University, Chiba, Japan, and

²St Marianna University School of Medicine, Kanagawa, Japan

Supervisor: Dr. Hisashi Naito, professor

Different Response of Alpha-Actinin isoforms to Muscle Damage in Rat Skeletal Muscle

Key words; muscle degeneration-regeneration, sarcolemma, tibialis anterior muscle

Background: Mammalian skeletal muscle possesses two isoforms of alpha (α)-actinin that locate in the Z-line and form actin-actin cross-links. Our study founded that the expression levels of α -actinin-2 in rat hindlimb muscles were upregulated by long-term exercise training. Moreover, we showed that α -actinin-3 expressions in rat soleus muscle largely increased in response to hindlimb suspension. These results suggest that α -actinin isoform were highly responsive to the change of muscle structure. However, the response of α -actinin isoform to muscle damage inducing disruption of structure is little understood.

Purpose: To determine the expression level of alpha actinin isoforms in damaged rat skeletal muscle.

Methods: Male Wistar rats (14-wks-age) were divided into two groups: Control (CON, n=6, 277.0 \pm 15.3 g) and Bupivacaine-treated (BPVC, n=6, 280.0 \pm 12.1 g). The rats in BPVC group were bilaterally injected into the tibialis anterior (TA) muscles with 0.5 ml of 0.5 % bupivacaine solution to induce muscle damage. Six days after the injection of bupivacaine, all rats were euthanized, and then TA muscles were quickly removed. The expressions level of α -actinin-2 and α -actinin-3 in TA muscle were analyzed by immunoblot analysis.

Results: TA muscle weight in BPVC group significantly decreased compared with CON group (p<0.0001). The expressions level of both α -actinin-2 and α -actinin-3 in BPVC group was significantly less than in CON group, however, the extent of decrease was higher in α -actinin-3 isoform than α -actinin-2 isoform (α -actinin-2: -13%, p<0.05, α -actinin-3: -28%, p<0.01).

Conclusion: It is suggested that response of α -actinin to muscle damage may be different at the isoform level.

Anna Udvardy-Zsolt Komka-Vince Szóke
Semmelweis University, Budapest, Hungary
Supervisor: Dr. Miklós Tóth, professor

The Role of ADRB2 Polymorphisms in Sport Selection

Introduction: Sport selection is a considerable practical application field of sportgenomics. International studies have already proved that many allele combinations have significantly higher frequency in elite athlete population. In Hungary a genotype database has also been started to set up. We evaluate the frequency of 12 polymorphisms among Hungarian elite athletes. We have already related our experiences of the possible role of the ACE and ACTN3 polymorphisms concerning congenital sport abilities. Now we introduce the ADRB2, one of the main points in exercise induced adrenalin response, from the group of genes which we studied. We examined genotypes at the R16G and Q27E SNPs. These two gene variants have been related to several cardiorespiratorical phenotypes in previous studies. (Roskopf, 2008). There has been formed many kinds of sport grouping based on metabolism and the way of loading. Therefore sport abilities could be associated to genetic profiles. The cyclic and acyclic grouping proved to be the best to classify different kinds of sports in connection with physiological background.

Methods: We initiated 63 men and 68 women elite Hungarian athletes in our study. The specification of genotypes have been done from venal blood with polymerase chain reaction (PCR).

Results: In Hungarian elite athletes (n=131) the cyclic subpopulation has higher R and Q frequency values. Results of physiological/anthropometrical examinations and exercise physiology tests can be related to certain allele combinations which can bring us closer to understanding background processes.

Allele combination frequencies in the acyclic group(n=72) were: R16G: GG: 0,29; GR: 0,47; RR: 0,24; Q27E: QQ: 0,43; QE: 0,47; EE: 0,097. And in the cyclic group (n=59) were: R16G: GG: 0,31; GR: 0,58; RR: 0,12; Q27E: QQ: 0,25; QE: 0,56; EE: 0,19. The single allele frequency in acyclic and cyclic population were: G: 0,53 vs. 0,59; R: 0,47 vs. 0,41; Q: 0,67 vs. 0,63; E: 0,33 vs. 0,47. The E allele of ADRB2 gene was significantly higher ($p<0,05$) in the cyclic group.

Discussion: It can be concluded that alleles of Q27E SNP show significantly different frequency in the acyclic and cyclic population. Increasing the number of studied genes and athletes involved can provide a future aim to establish an objective recommendation protocol, which can be a considerable help in sport selection at an early age.

Le Douairon Lahaye S.¹, Avril F.¹, Krasniak T.¹, Zouhal H.¹

¹Movement, Sport and Health Sciences Laboratory, Rennes, France

² University - ENS Cachan, France

Comparison of 2 Strategies of Relay on Team Time Trial Cycling Performance

Introduction: During a team time trial (TTT), two modalities of relay can be used by the cyclists: one-line relay or double-line relay. In TTT-one-line relay, cyclists are taking long relays (about 20 seconds) whereas in TTT-double-line relay, each cyclist achieves short relay so as to perform a continuous turnover. These different modalities can influence the drafting effect enjoyed by cyclists and thus the exercise intensity. So, the present study was undertaken to compare these 2 strategies of relay in term of performance, physiological and psychological responses.

Methods: A team of 4 well-trained cyclists, preparing the TTT junior championship of Britain (France), performed 2 tests of 10km TTT on two different days with 4 days rest. The 2 tests consisted on performing, in a randomized order and on the same circuit, TTT-one-line relay or TTT-double-line relay. The environmental conditions (wind, temperature, humidity) didn't differ significantly between the 2 trials. The power output and heart rate (HR) were continuously recorded by a sensor Powertap®. After each test, all the cyclists gave their perceived difficulty by using the CR 10 Borg perceptual scale.

Results: A higher average speed was observed for the TTT-one-line relay (42 km/h) compared to that performed on double-line (40.5 km/h). The values of average power output were significantly higher for TTT-one-line relay (286.5±6.2 Watts) than for TTT-double-line relay (271.7±8.0 Watts) ($p<0.01$). The percentage of total time spent between 90 and 100% of their maximal aerobic power (measured in laboratory before the experiment) was significantly longer during TTT-one-line relay (14.3±1.5%) than during the TTT-double-line relay (8.01±2%) ($p<0.05$). Moreover, the HR average values were significantly higher for the TTT-one-line relay (179±2 bpm) than for TTT-double-line relay (175± 2 bpm) ($p<0.05$). During TTT-one-line relay, the cyclists spent significantly more time between 90 and 100% of maximal HR than during the TTT-double-line relay (55.9±7.3% and 35.6±3.1% of total time, respectively, $p<0.05$). According to the Borg scale, significant differences were observed about the difficulty of the TTT between the two modalities of relay ($p <0.05$). For each cyclist, the TTT-one-line relay has been perceived as more difficult physically.

Conclusion: This study shows that in terms of performance the TTT-one-line relay is more efficient than the TTT-double-line relay. However, the first one is also physiologically and psychologically more difficult than the second one. Thus, our study suggests that if the team goal is to achieve the better performance, the TTT-one-line relay is preferred. Conversely, if the team seeks to preserve his strength for a later goal, the TTT-double-line relay may be a good option. Further experiments should be conducted to more accurately analyze each modality of TTT relay.

Le Douairon Lahaye S.¹, Malardé S.¹, Zguira MS.¹, Rebillard A.¹, Vincent S.¹, Lemoine Morel S.¹, Delamarche P.¹, Carré F.², Rannou Bekono F.¹

¹Laboratory Movement, Sport and Health Sciences, Rennes 2 University - ENS Cachan, France

²INSERM, U642, Rennes 1 University, France

Combined Effects of Type 1 Diabetes and Exercise Training on Cardiac Function: Study of Nos1, Ryr2 and B3-Adrenoceptor

Introduction: In diabetic cardiomyopathy, β_3 -adrenoceptor (β_3 -AR) overexpression plays an important role in the altered response to β -adrenergic stimulation via induction of neuronal nitric oxide synthase (NOS1)-derived nitric oxide. Moreover, the diabetes-induced upregulation of NOS1 could decrease cardiac function via NOS1-translocation and consequently, hyponitrosylation of the cardiac Ca²⁺ release channel ryanodine receptor (RyR2). We hypothesised that exercise training might improve cardiac function during diabetes by affecting β_3 -AR, NOS1 and RyR2.

Methods: 46 male Wistar rats were randomly assigned into a diabetic group receiving no treatment (D), an insulin-treated diabetic (Ins), a trained diabetic (TD), and a trained insulin-treated diabetic (TIns) groups. Control group (C) was included in order to confirm the negative effects of diabetes. Insulin treatment and/or treadmill exercise training were conducted during 8 weeks. Cardiac function was evaluated by Langendorff technique. Protein expression of β_3 -AR, NOS1 and RyR2 was assessed using Western blots.

Results: Diabetes induced a decrease of both diastolic (-dP/dt) and systolic (+dP/dt) cardiac function evaluated by Langendorff technique ($p < 0.05$). Moreover, diabetes is associated with an increase of protein expression of cardiac β_3 -AR and NOS1, and a decrease of RyR2 ($p < 0.05$). Exercise training alone fails to normalize both diastolic and systolic cardiac function. Conversely, insulin treatment alone succeeds to partially improve diastolic and systolic function ($p < 0.05$). When combined, exercise training potentiates the beneficial effect of insulin treatment on systolic function ($p < 0.05$). Insulin treatment and/or exercise training induce a complete normalization of β_3 -AR and RyR2 protein expression but induce a down regulation of NOS1 protein which expression becomes lower than the control values ($p < 0.05$).

Conclusion: Our study shows that despite a complete normalization of β_3 -AR and RyR2 protein expression, exercise training has no significant effect on cardiac function and insulin treatment does not completely restore it. This might be explained by RyR2 hyponitrosylation and oxidation, linked to an excessive down-regulation of NOS1. However, with combined treatment, mechanisms of action seem different. Indeed, exercise training potentiates the beneficial effect of insulin treatment on systolic function despite the down-regulation of NOS1. Thus, the improvement of systolic function induced by combined treatment might be related to modifications in the spatial confinement of NOS1.

Svetlana Averina

Russian State University of Physical Education, Sport and Tourism, Moscow, Russia
Supervisor: Dr. Irina Bykhovskaya,

Trends of the Ultras Subculture Advancement in the Russian Reality

During the last decades some new sport functions were being actualized which are connected with transforming the sport into a kind of show services. And accordingly its inalienable component appears to be the fan movement with its certain definite subculture, which provides functioning of a “performance for crowd” phenomenon.

In the modern globalizing social environment it is the football that has become the play-symbol, means of the whole world communication. The football fan-movement is one among the most numerous subcultures.

The fan subculture nucleus so called the “ultras culture” is also taking an active position, including the system of spiritual and behavioural practices, which allow to display love to the sport, to their favourite team by means of various actions, primarily of a positive nature.

As the Russian researchers consider formation and development of the fan-movement in general, the football one in particular, in the USSR and then in Russia has become a cultural performance. This subculture, being founded in the West, was copied, adopted to the Russian reality and is successfully setting. But Russian fan-movement staff differs from the Western one in principle. The middle age of Russian fans is 15-25, while in the West the fan-movement invites people of 26-40.

Analysis of the Russian ultras fan-activity has demonstrated that ultras of “Zenit” football team (“Nevskiy Front”) as well as “Spartak” football team (“Fratia”) are taking up the leading positions; the others are trying to follow them.

We have conducted the pilot investigation among the supporters of “Spartak” and “Locomotive” football teams to find out empirically what definite fan-activity is conducted by the ultras themselves and what they borrow from their West European colleagues. The investigation was in the form of interrogation of fans by the questionnaire; 110 persons were questioned.

Foundation of the subculture ideology was realized rather early. The ultras are keeping the subculture traditions with piety. Practically 100 % of them are members of fan-clubs and support only at the stadium. 100 % of the respondents visit all home matches of the favourite teams, 90 % among them visit guest matches along Russia and 60 % visit guest matches along all the Western Europe.

The fans use the following technologies to support their team: before-match module show; before-match performance: small balls, various flags, banners, stretches, sound support, pyrotechnics, fire-show, etc.

The following answers were got at the question, concerning the content of the support technologies, which the Russian supporters would like to borrow from the West European fans: large-scale shows; designing paintings by cardboards boxes and small balls; illumination of banners, paper streamer and ribbons like in Argentine; beautiful singing of the whole stadium, but not only of the fan tribune, etc.

Summing up we can state that the ultras movement is developing and becoming strong in Russia day by day. According to the analysts, studying this problem, Russia will catch up and will outrun the Western Europe in performance technologies and designing of tribunes. There are plans to boast and teach the West by our results in future.

Diana Déri

Semmelweis University, Faculty of P.E. and Sport Sciences (TF), Budapest, Hungary
Supervisor: Dr. József Bognár, associate professor

Football Academies: Development and Competencies in the Talent Development Program

The future of sports is based on youth development. The purpose of this document is to present a practice from the field of football and to propose this efficient way of talent development also for other branches of sport.

In my presentation I will focus on football academies. These academies do not work as conventional educational institutions. The main point of them is to develop a class schedule which can be fully adjusted to the increased training.

These boarding schools fulfill pedagogical and social functions too. In order to acquire the football skills they ensure well-qualified professionals, personalized training programs, technological conditions and facilities.

Recently, more and more football academies are founded in Hungary. The analysis of the work done in these institutions helps to maximize competencies in talent development.

Eszter Szabó

Semmelweis University, Faculty of P. E. and Sport Sciences (TF), Budapest, Hungary

Supervisor: Dr. Katalin Keresztesi, associate professor

Consultant: Dr. István Famosi, associate professor

Comparison of Development Trend in 7-11 Year-old Children

Introduction: According to several publications there are more or less differences in physical development and motor performances of children depending on age. The aim of this study was to evaluate the differences of physical development and motor performance of students attending primary school.

Materials and methods: 403 students, 192 boys and 211 girls were studied for physical development and motor performance in 2009, at Keszthely in Hungary. Body height, body weight were taken, moreover 20 m dash, standing board jump, six minutes continuous running, throws with stuffed-ball and obstacle race-test were studied. Data were collected in spring and in autumn and evaluated with use of SPSS programme. Mean value, standard error, standard deviation and coefficient of variation were calculated. For evaluating the significance of difference between the age of the group's mean values, "t"-test was used.

Results: The data show that a big part of the differences are justified significantly. The majority of them are considerably significant. The biggest differences are listed as follows: In the body height and body weight the biggest difference was found between 7 and 8 year-old age groups (9.27 cm, and 5.99 kg) for boys, and between 8 and 9 year-old groups for girls (10.36 cm, and 8.21 kg). In 20 m dash the boys showed the biggest difference between 10 and 11 year-old age (0.44 sec), while that of girls between 7 and 8 year-old age (0.46 sec). In the standing board jump the biggest difference was found between 8 and 9 year old groups (12.23 cm) for boys and between 9 and 10 year-old groups (8.27 cm) for girls. In throws with stuffed-ball the biggest difference was found between 10-11 year-old groups, both for boys (134.31 cm) and for girls (90.38) cm. In the six minute continuous running the biggest difference was found between 7 and 8 year-old age groups in case of boys (150.) (24 m) and girls (153.15 m). The obstacle race-test showed the biggest difference between 8 and 9 year-old age groups of boys (3.36 sec) and between 9 and 10 year-old groups of girls (2.48 sec). These data mean that the obtained differences are not accidental, but can be caused by systematic factors having an effect on acceleration.

Conclusion: It seems that the most sensitive age period in body development is the 7-8 years in case of boys and 8-9 years in case of girls. In running the younger (7-8 years) age, while in throw the older (10-11 years) age seems to be the most sensitive period. It is thought that the examined period is a complex and sensitive phase from point of view of motor development.