

5TH
INTERNATIONAL
SCIENTIFIC
CONFERENCE
MEĐUNARODNI
ZNAKSTVENI
KONGRES

CONTEMPORARY
KINESIOLOGY
SUVREMENA
KINEZILOGIJA

Split, August 28-30, 2015

PROCEEDINGS BOOK
ZBORNIK RADOVA



PROCEEDINGS BOOK
ZBORNİK RADOVA

5TH INTERNATIONAL SCIENTIFIC CONFERENCE „CONTEMPORARY KINESIOLOGY“
5. MEĐUNARODNI ZNANSTVENI KONGRES „SUVREMENA KINEZILOGIJA“

Publisher/Izdavač: Faculty of Kinesiology, University of Split, Croatia
Kineziološki fakultet, Sveučilište u Splitu, Hrvatska

**Graphic design/
Grafičko uređenje:** Dalmatina tisak, d.o.o.

Editors/Urednici: Zoran Grgantov
Saša Krstulović
Jelena Paušić
Tonči Bavčević
Dražen Čular
Ana Kezić
Alen Miletić

**Scientific committee/
Znanstveni odbor:** Slobodan Jarić, PhD, Delaware, USA
Nic James, PhD, London, UK
Raul Oliveira, PhD, Lisbon, Portugal
Sergej Ostojić, PhD, Belgrade, Serbia
Antonino Bianco, PhD, Palermo, Italy
Boštjan Šimunić, PhD, Koper, Slovenia
Jelena Obradović, PhD, Novi Sad, Serbia
Almir Atiković, PhD, Tuzla, Bosnia and Herzegovina
Lenče Aleksovska Veličkovska, PhD, Skopje, Macedonia
Daniela Šukova Stojanovska, PhD, Skopje, Macedonia
Husnija Kajmović, PhD, Sarajevo, Bosnia and Herzegovina
Izet Rađo, PhD, Sarajevo, Bosnia and Herzegovina
Saša Pantelić, PhD, Niš, Serbia
Dragan Mirkov, PhD, Belgrade, Serbia
Aleksandar Nedeljković, PhD, Belgrade, Serbia
Stevo Popović, PhD, Podgorica, Montenegro
Hrvoje Karninčić, PhD, Split, Croatia
Miodrag Spasić, PhD, Split, Croatia
Damir Sekulić, PhD, Split, Croatia
Nenad Rogulj, PhD, Split, Croatia

**Organizing committee/
Organizacijski odbor:** Rado Pišot, PhD, Koper, Slovenia
Ivan Prskalo, PhD, Zagreb, Croatia
Vujica Živković, PhD, Skopje, Macedonia
Dejan Madić, PhD, Novi Sad, Serbia
Milovan Bratić, PhD, Niš, Serbia
Goran Sporiš, PhD, Zagreb, Croatia
Vatroslav Horvat, PhD, Zagreb, Croatia
Siniša Kovač, PhD, Sarajevo, Bosnia and Herzegovina
Nusret Smajlović, PhD, Sarajevo, Bosnia and Herzegovina
Kemal Idrizović, PhD, Podgorica, Montenegro
Alen Kapidžić, PhD, Tuzla, Bosnia and Herzegovina
Mirjana Milić, PhD, Split, Croatia
Boris Milavić, PhD, Split, Croatia
Sunčica Delaš Kalinski, PhD, Split, Croatia

**In cooperation with/
U suradnji s:** University of Primorska, Koper, Slovenia
Faculty of Teachers Education, University of Zagreb, Croatia
ISSN 1847-0149

Autori su odgovorni za način i točnost referenciranja, i kvalitetu jezika.

PROCEEDINGS BOOK
ZBORNİK RADOVA

5TH
INTERNATIONAL
SCIENTIFIC
CONFERENCE

CONTEMPORARY KINESIOLOGY

5. MEĐUNARODNI ZNANSTVENI KONGRES „SUVREMENA KINEZILOGIJA“



Faculty of Kinesiology, University of Split, Croatia
Kineziološki fakultet, Sveučilište u Splitu, Hrvatska
Split, Croatia
August, 28-30, 2015

Contents/Sadržaj

INVITED LECTURES / POZVANA PREDAVANJA

Slobodan Jarić: Force and power producing properties of multi-joint muscular systems	11
Nic James: The evolving role of Performance Analysis in competitive sport	18
Sergej M. Ostojić: Ergogenic effects of guanidinoacetic acid	25
Raul Oliveira: Reeducation sensorimotor: from the research to clinical practice	28
Rado Pišot, Matej Plevnik: Learn to move – the role of fundamental motor patterns in child’s motor development	45

SECTION CONTEMPORARY SPORT ISSUES / SEKCIJA PROBLEMI SUVREMENOG SPORTA

Boštjan Šimunič: A new perspectives in muscle physiology (new knowledge and results from TMG studies)	65
Marino Krespi, Nedim Šišić, Sanja Milat: Ekspertna procjena važnosti funkcionalnih energetske mehanizama u rukometu	68
Marino Tavra, Goran Kuvačić, Saša Krstulović: Analiza razlika u rezultatima specijalnog judo fitnes testa kod judašica različite natjecateljske uspješnosti	75
Petra Đapić Caput, Saša Krstulović, Goran Kuvačić, Dragan Crnov, Marino Tavra: Povezanost motoričko-funkcionalnih sposobnosti i uspjeha u judu kod judaša kadetske dobne skupine – mišljenje judo eksperata	82
Goran Kuvačić, Petra Đapić Caput, Saša Krstulović: Utjecaj motoričko-funkcionalnih sposobnosti na uspjeh kod judaša kadetske dobne kategorije	89
Noemi Zovko, Alen Miletić, Vedrana Grčić: Povezanost dimenzija slike o sebi i ekstenziteta treninga u sportskom plesu	96
Safet Kapo, Nedim Čović, Izet Rađo, Husnija Kajmović, Nusret Smajlović, Siniša Kovač: Training effects on peak torque and total work of knee and elbow extensor and flexor muscle in female karate athletes	102
Joško Sindik, Vatroslav Horvat, Marijana Hraski, Damir Sertić: Application of the multidimensional inventory of sport excellence on the samples of young top female handball and volleyball players	112
Damir Zubac, Vladimir Ivančev, Hrvoje Karninčić: Association of hypohydration and rate of body mass reduction among elite youth amateur boxer	122

Alma Dizdar, Edin Mirvić, Faris Rašidagić: Utjecaj nekih motoričkih sposobnosti na vođenje lopte u vaterpolu	132
Tamara Đurković, Dejan Ilić, Goran Nešić, Danica Janičijević, Nikola Fišeković: Comparative analysis of foot status and certain motoric capabilities in female volleyball and handball players	142
Danijela Kuna, Sanjin Džajić, Josip Maleš: Hijerarhijska klasifikacija metodičkog modela za poduku skijaškog pluznog zavoja i pluznog luka	149
Mersad Čuljević, Danijela Kuna: Efekti različitih modela treninga na rezultatsku uspješnost u alpskom skijanju	159
Mila Vukadinović, Milan Pantović, Jelena Obradović: Uticaj vežbi snage uz proteinsku suplementaciju na telesni sastav	168
Aleksandra Aleksić-Veljković, Dejan Madić, Katarina Herodek, Mila Vukadinović: Age-group differences in vertical jump performance of young female gymnasts	176
Saša Pišot: Running and serious leisure perspective	184
Nikola Toplica Stojanović, Zvezdan Savić, Nebojša Randelović: A comparative analysis of the jumping tempo of volleyball players at different levels of competition	192
Dražen Čular, Igor Jelaska, Domagoj Pečko: Population size as a factor in countries' success in WTF taekwondo competitions	203
Dino Belošević, Petra Mandić Jelaska, Antonio Perić: Analysis of attitudes towards combat sports	212
Hrvoje Sivrić, Marko Erceg, Vujica Živković, Luka Pezelj: The differences in the selected indicators of the situational effectiveness between the A league Champions and the other clubs participating in UEFA Champions League 2014/15	221
Ensar Abazović, Erol Kovačević, Marko Erceg, Elvir Zametica: Funkcionalni profil mladih košarkaša	229
Milan Čoh, Milan Žvan, Stanislav Peharec, Petar Bačić: Differences between the elite and sub-elite athletes in kinematic and dynamic parameters of sprint - start	237
Renata Pavić, Pero Kuterovac: Utjecaj antropometrijskih karakteristika na uspješnost plivanja kraul tehnikom kod vrhunskih hrvatskih plivača	243
Marko Vidnjević: Kinesiology interventions during the contest period in football club koper	252

Željko Krneta, Sunčica Poček: Analysis of the predictive value of basic motor tests for young female volleyball players	260
Valdemar Štajer, Milan Vučinić, Aleksandar Karać, Aleksandar Kotrljanović, Mario Roška: Uticaj vežbi snage-tipa izdržljivosti i vežbi za razvoj skočnosti na agilnost kod mladih odbojkaša	267
Šime Buzov, Alen Gavrančić, Petra Mandić Jelaska: The impact of a programmed football training on functional abilities among young players.....	273
Boris Milavić, Boris Maleš, Dražen Guć: Konstrukcija i inicijalna validacija upitnika plivačke kompetencije i angažiranosti.....	283
Goran Sporiš, Nebojša Trajković, Damir Jurko: Effects of off-season sand training on physical performance in adolescent indoor volleyball players....	292
Andreja Ivas, Dražen Čular, Stipe Blažević: Utjecaj veličine populacije na rezultatsku uspješnost država na svjetskim taekwondo prvenstvima ITF načinom...	304
Goran Mickoski, Stipe Blazević, Žarko Kostovski: Influence of certain motor skills on the execution of judo throwing technique morote seoi nage.....	318
Mirjana Milić, Zoran Grgantov, Marjeta Mišigoj Duraković, Goran Nešić, Johnny Padulo: Razlike u kronološkoj, biološkoj i trenažnoj dobi uspješnijih i manje uspješnih mladih odbojkaša	328
Tea Bešlija, Mario Tomljanović, Ana Kezić, Jakov Previšić: Yo-yo test kao prediktor uspješnosti rukometaša	337

**SESSION PHYSICAL ACTIVITY FOR HEALTH /
SEKCIJA KINEZIOLŠKA AKTIVNOST ZA ZDRAVLJE**

Antonino Bianco: The protein supplements consumption among people attending commercial gyms: the Protein Project.....	345
Lovro Štefan, Goran Sporiš, Dražen Čular, Damir Jurko: Organism adaptations on high altitude training	348
Elvira Nikšić, Indira Mahmutović, Faris Rašidagić: Representation of postural disorders of the lower extremities with students of classroom teaching with regard to the gender.....	357
Saša Pantelić, Zoran Milanović, Radmila Kostić, Slavoljub Uzunović, Milovan Bratić, Saša Veličković, Tomislav Okičić, Nenad Stojiljković: The connection between body composition and fitness performance among elderly men.....	371
Slavoljub Uzunović, Goran Zdravković, Radmila Kostić, Saša Pantelić, Zoran Milanović, Bojan Jorgić, Marko Aleksandrović: A comparison of the static balance of children with and without visual impairment.....	380

Damir Bešić, Vlado Balaban: Differences between various household income backgrounds in relation to objective measured physical activity in Czech elementary school-aged children	388
Mihaela Jurdana, Ana Petelin, Zala Jenko Pražnikar: Serum visfatin levels and physical fitness in normal and overweight subject	395
Nikola Jevtić, Dragan Marinković, Dejan Javorac, Saša Semeredi, Borislav Obradović: Ima li razlike u izometrijskoj izdržljivosti lumbalnih ekstenzora kod predadolescenata	404
Olivera Knežević, Marko Kadija, Darko Milovanović, Suzana Blesić, Dragana Drljačić, Dragan Mirkov: Differences in neuromuscular function between athletes with and without ACL re-injury – a retrospective preliminary research	411
Branka Protić - Gava, Mario Roška, Tijana Šćepanović: Razlike u posturalnom statusu kolena devojčica uzrasta od 4 do 13 godina	418
Darinka Korovljev, Dragan Marinković, Mario Roška, Dejan Madić: Posturalni status kičmenog stuba kod dečaka uzrasta od 4-13 godina	425
Tijana Šćepanović, Dragan Marinković, Darinka Korovljev, Dejan Madić: Status kičmenog stuba u sagitalnoj ravni kod devojčica	435
Danuta Grzesiak-Witek, Paweł Witek: Method of Educational Kinesiology in the therapy of people with aphasic speech disorder – possibilities and limitations	442
Siniša Kovač, Denis Čaušević, Zana Bujak, Boris Metikoš: Analiza različitosti statusa posture kod djece iz ruralnih i urbanih sredina	452
Maha Sellami, Abderraouf Ben Abderrahaman, Safa Shili, Hanen Djemail, Wiem Keksi, Hassane Zouhal: Effect of combined training (strength and sprint) and advanced age on somatroph hormones in response to supramaximal exercise	461
Nika Stanović, Zoran Grgantov, Jelena Agić, Barbara Gilić: Učestalost i topologija boli kod mladih odbojkašica	465
Karla Magzan, Zoran Grgantov, Maja Gelo, Ljubomir Pavlović: Učestalost i topologija boli kod mladih odbojkašica i rukometašica	473
Jerko Cvitanić, Mia Perić, Dragana Olujić: Relacije socio-demografskih karakteristika i razloga za vježbanje polaznica zumba fitness programa	481
Sanja Vitaić, Marko Erceg, Mirjana Milić: Razlike u parametrima ventilacijske funkcije pluća mladih odbojkašica prema kriteriju natjecateljske uspješnosti	487
Biljana Kuzmanić, Ensar Abazović, Jelena Paušić: Utjecaj intraabdominalnog pritiska (IAP) na izvođenje testa fleksije u zglobu kuka u sjedećem položaju	497

**SESSION TRENDS IN PHYSICAL EDUCATION /
SEKCIJA TRENDOVI U TJELESNOJ I ZDRAVSTVENOJ KULTURI**

Tonči Bavčević: Interpersonal communication in education - kinesiological perspective	508
Ana Penjak, Hrvoje Karninčić: Rodna jednakost ili različitost na fotografijama hrvatskog sportskog časopisa «Sportske Novosti»	519
Faris Rašidagić: Razlika u aktivnost na času sporta i tjelesnog odgoja.	526
Dorjana Zerbo Šporin: To body fat related anthropometry for female students with different physical activity attitudes	534
Marko Badrić, Kristina Ravlić: Razlike u funkcionalnim sposobnostima učenika prema stupnju uhranjenosti.....	540
Edin Mirvić, Faris Rašidagić, Alma Dizdar: Efekti 24-satnog programa obuke neplivača na učenje osnovnih elemenata u plivanju	548
Lidija Vlahović, Bojan Babin, Josip Babin: Povezanost motoričkih sposobnosti i nastavne teme stoj na rukama uz okomitu plohu kod jedanestogodišnjih učenica	558
Ivan Prskalo, Marko Badrić, Sanja Bogovčić: Razlike u motoričkim sposobnostima kod učenika primarnog obrazovanja prema postotku masnog tkiva u tijelu.....	566
Vedrana Sember, Shawnda A. Morrison: The effects of physical activity on academic performance and physical fitness in elementary school girls.....	576
Matea Malada, Sunčica Delaš Kalinski, Lenče Aleskovska-Veličkovska, Nevenka Maras: Razina usvojenosti dvaju programa sportske gimnastike od strane studentica.....	579
Igor Jelaska: Random number generator comparisons of effect size measures in one-way repeated measures ANOVA	585
Miodrag Spasić, Karlo Gašpar, Antonio Perić: Morfološki i motorički prediktori agilnosti kod dječaka	595
Mateja Kunješić, Marijana Hraski, Edita Skaramuca, Ivan Prskalo: Usporedba antropološkog statusa učenika iz Zagreba i Dubrovnika.....	601
Antonio Perić, Dino Belošević, Tanja Mandić: Spol i kronološka dob kao prediktori statusa motoričkog razvoja kod školske djece.....	609
Barbara Kaličanin, Dora Marić, Ana Petrović: Utvrđivanje povezanosti između različitih manifestacija reaktivne agilnosti	619
Karla Šitić, Goran Gabrilo, Mia Perić: Postoje li razlike u plivačkoj izvedbi između dviju grupa studenata kod provođenja identičnog plivačkog programa kroz dva različita vremenska perioda?	627
Marija Lorger, Kristina Kos, Ivan Prskalo: Vrednovanje rada u nastavi tjelesne i zdravstvene kulture u primarnoj edukaciji	636

Goran Nešić, Nikola Majstorović: Differences in anthropometric characteristics and general motor abilities between female volleyball players and untrained girls 17 years old	644
Luka Pezelj, Boris Milavić, Toni Gamulin, Petra Sinovčić, Zorana Šesnić: Relacije između kineziološke angažiranosti, psiholoških obilježja i tipova korištenja televizije adolescenata	653
Petra Sinovčić, Mirjana Milić, Sunčica Delaš Kalinski: Relacije sedentarnih ponašanja i kineziološkog aktiviteta adolescenata.	664
Melis Mladineo Brničević, Daša Duplančić, Josefina Jukić, Siniša Zagorac: Sastav tijela kod različito kineziološki angažiranih studentica	677
Hugo Guelet, Mario Pujol, Ana Penjak: Going retro with the Indians: or do the native american sports mascots endanger the american society?	686
Vujica Zivkovic, Seryozha Gontarev, Kalac Ruzdija: Factors associated with physical activity in a sample of Macedonian students of Ss. Cyril and Methodius University	694
Damir Bavčević, Đurđica Miletić: Redefining of criteria of the test for estimation of motor knowledge	710
Barbara Gilić, Boris Milavić, Veronika Jurčić, Lucija Maglica, Ante Županović: Razlike između adolescenata koji odustaju ili ustraju u bavljenju organiziranom kineziološkom aktivnošću	718
Tonči Bavčević: Research review of relation of visual-motor integration, motor abilities and ontogenetic development	729
Ana Kezić, Nina Ivančić, Mia Mandić: Ambidekstrijka kao prediktor uspješnosti u ritmičkoj gimnastici kod studenata.	738
Tonči Bavčević, Damir Bavčević: Construction and validation of the test for evaluation of visual-motor integration in children aged 7 to 10.	743
Teo Bavčević, Tonči Bavčević, Damir Bavčević: Preliminary research results of visual-motor integration in children aged 7 to 10	751
Nevenka Maras, Sunčica Delaš Kalinski, Hrvoje Sivrić, Damir Jurko, Mihaela Pavlović: Učiteljica - subjekt u nastavi Tjelesne i zdravstvene kulture u razrednoj nastavi	759
Vildane Jasari, Josko Milenkovski, Abedin Ibrahim, Stipe Blažević, Žarko Kostovski: Structure of the anthropometric characteristics with female students dealing with volleyball.	768
Petra Dolenc: Slovenian version of the goal orientations in exercise measure: a preliminary study with young athletes	776

SESSION PHYSICAL ACTIVITY FOR HEALTH
SEKCIJA KINEZIOLOŠKA AKTIVNOST ZA ZDRAVLJE



Keynote speaker

The protein supplements consumption among people attending commercial gyms: the Protein Project

Antonino Bianco

Sport and Exercise Sciences Research Unit, University of Palermo, Italy

Nowadays, in an European gym context we may find more than three people amongst ten who declare protein supplements consumption. Health, physical fitness, self-esteem, performance and muscle hypertrophy are usually the main reasons inducing such kind of consumption. It well documented that particularly active individuals use supplements to build muscle, gain strength or prevent future diseases and illnesses. Furthermore, scientific researchers have shown that in general people have different opinions about the use of supplements and the appropriate food to eat. As reported by Bianco and colleagues in 2011, proteins are the most widely ingested supplements in people attending commercial gyms and supplement users also consumed higher protein content foods in respect to those who did not supplement. It is clear that there is an increased interest in what is considered “proper” nutrition and what is the best nutritional strategy to optimize exercise-training workouts. Dietary behaviour is in fact a complex phenomenon; food-based approaches are regarded as the long-term strategy for improving nutrition.

These require significant efforts and appropriate planning in order to include certain specific macronutrients or supplements in every day’s diet. Moreover, the area of provenience seems to have an influence on supplements choices and on dietary behaviours (as reported by Bianco et al in 2014). Dieting or unhealthy eating practices, (such as eating foods deemed as “bad” by the dieter), in one-way or another, may be associated with long-term weight gain. Previous studies have shown discrepant rates of supplement intake amongst subjects that exercise in gyms. These different findings might be explained by different gyms and people enrolled. Probably an under or over-reported use of such supplements, or an incorrect knowledge of what is considered a supplement may lead to such results. As mentioned before, proteins are the most widely consumed supplement in commercial gyms, although association

of protein supplements and food consumption is a poorly researched field. It is to date unclear whether those more inclined to supplement also have healthier dietary patterns. As shown by Pechey and colleagues in 2010, socioeconomic status is another factor influencing the quality of food intake, highlighting that low socioeconomic status people usually purchase a greater proportion of unhealthy foods and beverages. Conversely, high socioeconomic status people purchase greater proportions of fibres, proteins and total sugars, and smaller proportions of sodium.

The protein project is a scientific project of ten years duration (2011-2021) led by the University of Palermo in collaboration with many partners from the entire world. It is composed by three different epidemiological studies: Study A) Population Target - Commercial Gym attendees, Study design, Face-to-face interview; Study B) Population Target - Commercial Gym attendees, Study design, Self Reporting Questionnaire; Study C) Population Target - Net Surfers Study design, Self Reporting Online Short Questionnaire. The protein project aims to investigate the use of protein supplementation, alone or in association with other supplements amongst regular fitness center attendees. The project is actually running in 4 European countries and involves 7 Universities. Moreover, Authors are interested in sources of information, dietary behaviour, quality of training and quality of life of people who are attending commercial gyms, The common questions we are trying to answer are: 1) Who is taking protein supplements nowadays? 2) There is enough information about? Within commercial gyms? Personal Trainers and Fitness Instructors are enough qualified to prescribe supplements? Are proteins really necessary to obtain results? Which kind of association is the most favourite in case of protein consumption?

In occasion of Contemporary Kinesiology 2015 the project will be detailed and new unpublished data concerning the comparison between people living in Italy vs United Kingdom will be reported and consequently discussed.

REFERENCES

2014. Protein supplements consumption: a comparative study between the city centre and the suburbs of Palermo, Italy. Bianco A, Mammina C, Thomas E, Ciulla F, Pupella U, Gagliardo F, Bellafiore M, Battaglia G, Paoli A, Palma A. BMC Sports Sci Med Rehabil. 2014 Jul 12;6:29. doi: 10.1186/2052-1847-6-29. eCollection 2014.

2014. The use of protein supplementation among fitness center attendees. The protein project. Bianco A. EJSS Journal 2(1):61-63 - ISSN 2282-5673. Doi: 10.12863/ejssbx2x1-2014x4

2014. Protein supplementation and dietary behaviours of resistance trained men and women attending commercial gyms: a comparative study between the city centre and the suburbs of Palermo, Italy. Bianco A, Mammina C, Thomas E, Bellafore M, Battaglia G, Moro T, Paoli A and Palma A. J Int Soc Sports Nutr. 2014, 11:30 doi:10.1186/1550-2783-11-30

2011. Protein supplementation in strength and conditioning adepts: knowledge, dietary behavior and practice in Palermo, Italy. Bianco A, Mammina C, Paoli A, Bellafore M, Battaglia G, Caramazza G, Palma A, Jemni M. J Int Soc Sports Nutr. 2011 Dec 29;8(1):25. doi: 10.1186/1550-2783-8-25.