THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book:

13th Annual International Conference on **Kinesiology & Exercise Sciences**

24-27 July 2017, Athens, Greece

Edited by
Gregory T. Papanikos

2017

Abstracts
13th Annual International Conference on Kinesiology & Exercise Sciences
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(In Alphabetical Order by Author's Family name)

Preface

This book includes the abstracts of all the papers presented at the *13th Annual International Conference on Kinesiology & Exercise Sciences, 24-27 July 2017*, organized by the Athens Institute for Education and Research (ATINER).

In total 16 papers were submitted by 21 presenters, coming from 7 different countries (Canada, Germany, Greece, Iceland, Taiwan, Turkey and USA). The conference was organized into 8 sessions that included a variety of topic areas such as physical health, behavioral aspects, nutrition and more. A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet to exchange ideas on their research and consider the future developments of their fields of study.

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world regularly meet to discuss the developments of their discipline and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published nearly 200 books. Academically, the institute is organized into seven research divisions and 37 research units. Each research unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Gregory T. Papanikos
President

13th Annual International Conference on Kinesiology & Exercise Sciences
24-27 July 2017, Athens, Greece
Organizing and Academic Committee

All ATINER's conferences are organized by the Academic Committee (https://www.atiner.gr/academic-committee) of the association.

This conference has been organized with the additional assistance of the following academics, who contributed by chairing the conference sessions and/or by reviewing the submitted abstracts and papers:

1. Gregory T. Papanikos, President, ATINER.
2. Maria Konstantaki, Academic Member, ATINER & Senior Lecturer, Buckinghamshire New University, UK.
3. Bert Jacobson, Regents Professor, Oklahoma State University, USA.
4. Maria Kosma, Associate Professor, Louisiana State University, USA.
5. Mildred Naquin, Professor, Southeastern Louisiana University, USA.
6. Y. Gul Ozkaya, Professor, Akdeniz University, Turkey.
7. Raymond Stefani, Professor Emeritus, California State University, Long Beach, USA.
8. Chia-Ying Lien, Assistant Professor, National Taiwan University, Taiwan.
9. Vassilis Skianis, Research Fellow, ATINER.
10. Olga Gkounta, Researcher, ATINER.
11. Hannah Howard, Research Assistant, ATINER.

FINAL CONFERENCE PROGRAM
13th Annual International Conference on Kinesiology & Exercise Sciences, 24-27 July 2017, Athens, Greece
PROGRAM
Conference Venue: Titania Hotel, 52 Panepistimiou Avenue, Athens, Greece
C O N F E R E N C E P R O G R A M

Monday 24 July 2017

08:00-09:00 Registration and Refreshments

09:00-09:30 (Room B-10th Floor) Welcome and Opening Address

Gregory T. Papanikos, President, ATINER.

09:30-11:00 Session I (Room D-10th Floor): Behavioral Aspects of Exercise and Health

Chair: Maria Konstantaki, Academic Member, ATINER & Senior Lecturer, Buckinghamshire New University, UK.

1. Mildred Naquin, Professor, Southeastern Louisiana University, USA, Marie Zannis, Associate Professor, Nicholls State University, USA, Janet Jones, Assistant Professor, Southeastern Louisiana University, USA, Wynn Gillan, Assistant Professor, Southeastern Louisiana University, USA, Ifigenia Georgiadou, Director, Hellenic Culture Centre, Greece, Corrine Cormier, Graduate Assistant, Southeastern Louisiana University, USA & Jessica Friley, Graduate Assistant, Southeastern Louisiana University, USA. Health Status and Behaviours of Greeks and Americans.
2. Martha Gibson, Associate Professor, Spring Hill College and Midwestern State University, USA, Betty Carlson Bowles, Associate Professor, Midwestern State University, USA, Lauren Jansen, Associate Professor, Midwestern State University, USA, Karen Polvado, Associate Professor, Midwestern State University, USA & Robin Lockhart, Assistant Professor, Midwestern State University, USA. Motivation to Ride in the Hotter 'N Hell Hundred Bicycling Event. (Monday, morning session)
3. Adriana Duquette, Kinesiology Laboratory Coordinator, University of Windsor, Canada. Frequency of Cell Phone Use, Driving Behaviour, and Driving Attitudes of University-Aged Drivers in South-western Ontario, Canada.

11:00-12:30 Session II (Room D-10th Floor): Physical Activity and Health I

Chair: Mildred Naquin, Professor, Southeastern Louisiana University, USA.

1. Maria Kosma, Associate Professor, Louisiana State University, USA & David Buchanan, Professor and Chair, Department of Health Promotion and Policy, University of Massachusetts – Amherst, USA. "Connect", Log it, Track it, Go! *Techne* or Practical Wisdom in Exercise Promotion?
2. Mary Lou Schilling, Associate Professor, Central Michigan University, USA. Effects of Tai chi, Shadow Boxing, and Video Activities on the Balance of a Participant with Multiple Sclerosis: A Case Study.
3. Chia-Ying Lien, Assistant Professor, National Taiwan University, Taiwan. The Effect of Endurance Exercise on Breast Cancer Treatment Herceptin Combined with Doxorubicin on Mice Cardiotoxicity.

12:30-14:00 Session III (Room D-10th Floor): Injury and Rehabilitation in Sport and Exercise

Chair: Maria Kosma, Associate Professor, Louisiana State University, USA.

1. Lisa Lewis, Professor, Austin Peay State University, USA. Creative Dance for Physical and Mental Health.
2. Janet Jones, Assistant Professor, Southeastern Louisiana University, USA, Mildred Naquin, Professor, Southeastern Louisiana University, USA, Wynn Gillan, Associate Professor, Southeastern Louisiana University, USA, Marie Zannis, Associate Professor, Nicholls State University, USA, Ifigenia Georgiadou, Director, Hellenic Culture Center, Greece, Corinne Cormier, Graduate Assistant, Southeastern Louisiana University, USA & Jessica Friley, Graduate Assistant, Southeastern Louisiana University, USA. A Comparative Policy Analysis of the Healthcare Systems in the United States and Greece.

14:00-15:00 Lunch

15:00-16:30 Session IV (Room D-10th Floor): Exercise Physiology and Nutrition I

Chair: Chia-Ying Lien, Assistant Professor, National Taiwan University, Taiwan.

1. Jim Roberts, Professor, Edinboro University of Pennsylvania, USA. Quantifying Approaches and Accuracy of Athletes Completing Consecutive Day Marathons.
2. Jose Saavedra, Professor, Reykjavik University, Iceland, Matthias Hinz, MSc Student, University of Potsdam, Germany, Kristjan Halldorsson, Adjunct, Reykjavik University, Iceland & Hafrun Kristjánsdóttir, Head of Sports Science Department, Reykjavik University, Iceland. Throwing Velocity in Youth Handball Players.

21:00-23:00 The Pragmatic Symposium of the Conference as Organized in Ancient Athens with Dialogues, Food, Wine, Music and Dancing but fine tuned to Synchronous Ethics

Tuesday 25 July 2017

07:30-10:30 Session V: An Educational Urban Walk in Modern and Ancient Athens

Chair: Gregory Katsas, Vice President of Academic Affairs, ATINER & Associate Professor, The American College of Greece-Deree College, Greece.

Group Discussion on Ancient and Modern Athens.
Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)

11:00-12:30 Session VI (Room D-10th Floor): Exercise Physiology and Nutrition II

Chair: Raymond Stefani, Professor Emeritus, California State University, Long Beach, USA.

1. Bert Jacobson, Regents Professor, Oklahoma State University, USA, Taylor Monaghan, Oklahoma State University, USA, John Sellers, Oklahoma State University, USA, C. Estrada, Oklahoma State University, USA & M. Moghaddam, Oklahoma State University, USA. Effect of Oral Chicken Immunoglobulin (IgY) Ingestion on Serum Creatine Kinase, C-Reactive Protein and Perceived Delayed Onset Muscular Soreness Following Induced Muscle Soreness.
2. Y. Gul Ozkaya, Professor, Akdeniz University, Turkey, Mehmet Ali Ozcelik, Akdeniz University, Turkey, Nese Toktas, Akdeniz University, Turkey, Aysen Turk, Health Sciences University, Turkey, Ali Eraslan, Health Sciences University,

Turkey, Serap Akyol Tunc, Health Sciences University, Turkey, Funda Seferoğlu, Akdeniz University, Turkey & Abdurrahman Aktop, Associate Professor, Akdeniz University, Turkey. The Effect of whole Body Vibration Exercise as a Warm up Procedure on Pain Threshold, Heart Rate and Blood Pressure Values at Rest, and Following Acute Exercise in Recreationally Active Men.

12:30-14:00 Session VII (Room D-10th Floor): Biomechanics in Sports

Chair: Bert Jacobson, Regents Professor, Oklahoma State University, USA.

1. Raymond Stefani, Professor Emeritus, California State University, Long Beach, USA. Kinesiology Analysis of the Ancient Olympics and of Performance Differences between Male and Female Olympic Champions of the Modern Games in Running, Swimming and Rowing.
2. Richard Ward, Senior Lecturer, Simon Fraser University, Canada & Rachael A. Hutchinson, Research Assistant, Simon Fraser University, Canada. KIN-Scale: Comprehensive Anthropometric Assessment System.

14:00-15:00 Lunch

15:00-16:30 Session VIII (Room D-10th Floor): Physical Activity and Health II

Chair: Y. Gul Ozkaya, Professor, Akdeniz University, Turkey.

1. Wan X. Yao, Professor, The University of Texas at San Antonio, USA, Aashika Gandhi, The University of Texas at San Antonio, USA, Alberto Cordova, The University of Texas at San Antonio, USA, Saki Oyama, The University of Texas at San Antonio, USA, Zenong Yin, The University of Texas at San Antonio, USA & Williams Land, The University of Texas at San Antonio, USA. Bilateral Transfer in Force Control is Affected by the Exercise Weight: An Implication for Rehabilitation of Stroke Patients.
2. Lisa Roberts, Teacher, General McLane School District, USA. A Three Year Study of Elementary Fitness Levels: Fall versus Spring.

21:00- 22:30 Dinner

Wednesday 26 July 2017
Educational Island Tour or Mycenae and Epidaurus Visit

Thursday 27 July 2017
Delphi Visit

Adriana Duquette
Kinesiology Laboratory Coordinator, University of Windsor, Canada

Frequency of Cell Phone Use, Driving Behaviour, and Driving Attitudes of University-Aged Drivers in South-western Ontario, Canada

OBJECTIVE: Distracted driving, particularly among young drivers, remains a consistent problem, continuously growing as increases in technology have created many more and new types of distractions. The main purpose of the current study was to ascertain why drivers (i.e., specifically young Southwestern Ontario, Canada, drivers) use cell phones while driving, and to determine the percentage of driving time and specific locations where drivers talk on the phone, read text messages, and send text messages. A secondary purpose was to examine the situations in which university-aged drivers engage in these behaviours, the reasons why they engage in them, the emotions that they feel while engaging in them, and how they feel their driving ability is affected.

METHODS: A paper-based survey was administered to participants between the ages of 18-26 years old (n = 141), who were enrolled as an undergraduate student at a Southwestern Ontario University. A modified Likert scale with six choices, anchored by descriptions of 'never' to '>75%', was used to estimate the percentage of time engaged in distracted driving (talking on the phone, reading text messages, and sending text messages were all treated as separate variables). For each of these three variables, the survey also examined 1) the circumstances surrounding use, 2) how driving ability was affected, 3) the emotions felt, and 4) the perceived danger of the participants. Additionally, participants were asked about their personal experiences with tickets, near misses and accidents while texting and driving, their awareness of current local laws, and what it would take to make them abstain from texting while driving.

RESULTS: The vast majority of respondents (70.2%) indicated that they used their cell phone (hand-held or hands-free) while driving. Participants were also asked to estimate the percentage of time spent on a phone while driving, with the majority (62.1%) indicating less than 10% of their driving time engaged in cell phone use. Many respondents felt that their ability to drive is negatively affected while talking on the phone (61.7%), reading text messages (90.8%), and sending text messages (91.5%). Respondents felt that it was dangerous to talk on the phone (73.4%), read text messages (98.6%), and send text messages

(99.3%) while driving. This may be due to the fact that 30.5% indicated that they or someone that they knew had been in an accident because of texting while driving, and that 49.6% had almost been in accident for the same reason. Nearly 96% indicated that they were aware of current local laws pertaining to texting while driving, yet neither an accident (34.8%) nor a ticket (39.7%) would make them abstain from texting while driving.

CONCLUSIONS: The exploratory survey adds important self-reporting data on Southwestern Ontario university-aged drivers' frequency of cell phone use while driving, and allows insight into the perceptions and attitudes of cell phone use while driving. If further analyses confirm the findings of the current study, proposed adjustments may be made to current legislation and educational awareness campaigns to specifically target and challenge the behaviours and attitudes of cell phone use among young drivers.

Martha Gibson
Associate Professor, Spring Hill College and Midwestern State University, USA
Betty Carlson Bowles
Associate Professor, Midwestern State University, USA
Lauren Jansen
Associate Professor, Midwestern State University, USA
Karen Polvado
Associate Professor, Midwestern State University, USA
&
Robin Lockhart
Assistant Professor, Midwestern State University, USA

Motivation to Ride in the Hotter 'N Hell Hundred Bicycling Event

The purpose of this study was to identify motivation to participate in the Hotter 'n Hell Hundred (HHH) bicycling event, and the participants' demographics, health risk factors, and preparation to ride in the event. A convenience sample of adults pre-registered for non-competitive cycling events (N = 7,472) were requested to complete a survey. Of these, 2,645 (35%) responded. Questions identified the participants' demographics, preparation, previous experience with HHH, and motives for riding. The HHH attracted riders of all ages (18-80), genders, ethnicities, and educational levels. The majority were males, 40-59 years old, married, college graduates, and identified themselves as non-Hispanic whites. The majority (68%) reported no existing medical conditions, and were normal weight (70%), although 52% had been overweight or obese in the past. Preparation to ride in the HHH varied from riding more than five times a week for the last year, to riding 1-2 times per week one month before the event. Most (93%) had ridden in the HHH an average of 5 times. Motivations to ride included: personal challenge (75%); to experience the HHH ride (57%); a chance to ride with family/friends/co-workers (52%); improving health (47%); fun (33%); challenge by others (15%); part of a weight loss plan (11%); training for another event (10%); and raising money for a cause (2%). The motivation to participate appeared to move from extrinsic to intrinsic motivation as age increased. Exploration of the exercise habits and motivations of older adults (70+) is suggested by this study.

Bert Jacobson
Regents Professor, Oklahoma State University, USA
Taylor Monaghan
Oklahoma State University, USA
John Sellers
Oklahoma State University, USA
C. Estrada
Oklahoma State University, USA
&
M. Moghaddam
Oklahoma State University, USA

Effect of Oral Chicken Immunoglobulin (IgY) Ingestion on Serum Creatine Kinase, C-Reactive Protein and Perceived Delayed Onset Muscular Soreness Following Induced Muscle Soreness

Following unaccustomed, vigorous resistance exercise the participant typically experiences delayed onset muscular soreness (DOMS) resulting from a combination of contractile tissue micro trauma, osmotic pressure changes, alteration calcium regulation, and inflammation. Elevated muscle specific enzyme creatine kinase (CK) and C-reactive protein (CRP) are markers of striated muscle damage and inflammation respectively. Immunogloblin (IgY) mediates tissue inflammation and may attenuate infection of damaged tissue thereby reducing the effect of exercise induced DOMS.

PURPOSE: The aim of this study was to compare the effect of oral consumption of IgY and placebo (Pl) on CK, CRP serum relevels, and perceived pain following induced DOMS.

METHODS: Healthy college aged subjects (N=21) were randomly divided into an experimental group (IgY) and a control group (PL). On day 1 blood draws for CK were done followed by 14 days of supplementation of either IgY or Pl at the following doses: days 1-2 =4.5g, days 3-5 =9.0g, and days 6-14 =13.5g. Following the 14 d, DOMS was induced using both eccentric Biodex contractions (4x10 eccentric 300°/sec) and lunges (3x10 at 65% BWT). Perception of muscle soreness was recorded each morning and evening for three days via visual analog scales. After 48 hours, subjects reported for a second blood draw.

RESULTS: One-way ANOVAs resulted in the IgY group posting significantly less ($p<0.05$) serum CK than the PL group. While not reaching significance in pre- to post-test change between the groups,

the PL group showed a 54.4% increase in CRP in contrast to the IgY group in which a 24.4% increase was found. Furthermore, the IgY group experienced significantly less post-test perceived soreness than the Pl group.

CONCLUSION: IgY supplementation lessens muscle CK levels and perceived muscle soreness following exercise, possibly due to an anti-inflammatory effect. However, no significant between group difference were found possibly due to a lack of infection in the damaged muscle tissue. It was suggested that IgY may serve as a buffer for DOMS thereby allowing the participant to continue vigorous exercise without discomfort.

Janet Jones
Assistant Professor, Southeastern Louisiana University, USA
Mildred Naquin
Professor, Southeastern Louisiana University, USA
Wynn Gillan
Associate Professor, Southeastern Louisiana University, USA
Marie Zannis
Associate Professor, Nicholls State University, USA
Ifigenia Georgiadou
Director, Hellenic Culture Center, Greece
Corinne Cormier
Graduate Assistant, Southeastern Louisiana University, USA
&
Jessica Friley
Graduate Assistant, Southeastern Louisiana University, USA

A Comparative Policy Analysis of the Healthcare Systems in the United States and Greece

Healthcare comparative policy analysis between countries has proven to be enlightening, especially as health issues become more global. The purpose of this study was to compare the healthcare systems, funding, expenditures, health status, professional availability, and health issues in the United States of America (USA) and Greece. Methods of examination included observation, site visits, interviews, review of governmental statistics and documents. Related research and publications were reviewed. The USA is the only nation in the world that does not provide universal access to healthcare services for its citizens. Limited governmental funding has been available to the military, elderly, and those living below poverty levels in the USA, as compared to all Greek citizens. However, both countries have public and private healthcare sectors. The USA spent more on healthcare than any country in 2014 with 3 trillion dollars or 17.5% of the gross domestic product (GDP). Greece spent 6.1 billion dollars or 9.3% GDP. The governmental health expenditures as a percent of all health expenditures within these countries was 48.3% for USA and 61.7% for Greece. Out of pocket expenses consisted of 416 billion dollars in USA versus 1.2 billion in Greece.

Despite the exorbitant expenditures by the USA, the health status has not been superior to Greece. In 2014, USA infant mortality was 6 deaths per 1,000 births compared to 4 per 1,000 in Greece. The life expectancy was not significantly different between the countries with

USA at 79.8 years and Greece at 80.5 years. Both countries have the same top four causes of death: cardiovascular disease, cancer, respiratory conditions, and accidents. The shortage of healthcare professionals has been a challenge in both countries. The USA has a shortage of physicians (MDs) and nurses/midwives with 25 and 98 per 10,000 people respectively. In contrast, Greece has an abundance of MDs at 62 per 10,000 population and a severe shortage of nurses/ midwives with 2 per 10,000. A stark difference exists between the educational opportunities, training, licensure, regulatory oversight, and salaries of healthcare professionals between the two countries. Both countries are experiencing issues related to rural access to healthcare services, refugee/immigrant health, and the rising costs of healthcare, especially pharmaceuticals. These countries have identified that health promotion, disease prevention, and primary care access will be essential to decrease soaring healthcare costs.

Maria Kosma
Associate Professor, Louisiana State University, USA
&
David Buchanan
Professor and Chair, Department of Health Promotion and Policy, University of Massachusetts – Amherst, USA

"Connect", Log it, Track it, Go! *Techne* or Practical Wisdom in Exercise Promotion?

Given the rise in obesity prevalence the past 18 years and the benefits of exercise in decreasing obesity levels and associated health problems (e.g., diabetes, cardiovascular disease, and hypertension; Vissers et al., 2013), exercise promoters are expected to use technological applications in their exercise motivational programs, including discussion forums in social media and exercise self-monitoring via fitness apps. The purpose of this concept-based paper is to critique the use of social media and fitness apps in exercise promotion and propose an alternative approach – practical wisdom, which emphasizes *real* life experiences and social contact. Based on abundant research evidence, web-based exercise motivational programs – that use fitness apps and/or discussion boards with or without social media – are ineffective in increasing exercise participation. Contrary to publicity by giant corporations, increased screen time is associated with decreased exercise levels and increased psychological problems (e.g., depression and anxiety). Human action is guided by practical wisdom/reasoning (*phronesis*), which is knowledge derived by context-dependent and variable life experiences (Aristotle, 1962). People form values about their actions – exercise or not – according to their culture, society, and personality (Kosma et al., 2015). *Phronesis* is different from *techne* – technology – which is knowledge about art/craft (Aristotle, 1962; Flyvbjerg, 2001). While *phronesis* has no end product other than engaging in meaningful activities, the artisan who masters *techne* develops products for financial gain (Aristotle, 1962). Given this distinction, exercise is driven by *phronesis* and is meaningful as an end in itself and not because it can be accumulated in portable apps and viewed on screens in a form of avatars. Instead of being infatuated with mobile devises, exercise promoters should emphasize *phronesis* in their programs to enhance understanding of valued goals about important life decisions: should I spend nine hours/day tweeting and playing online or shall I go for biking with my children?

Lisa Lewis
Professor, Austin Peay State University, USA

Creative Dance for Physical and Mental Health

Dance is the most fundamental of the arts, involving direct expression through the body. Thus, it is an intimate and powerful medium for therapy. Based on the assumption that body and mind are interrelated, dance/movement therapy is defined by the American Dance Therapy Association as "the psychotherapeutic use of movement as a process which furthers the emotional, cognitive and physical integration of the individual." Creative dance/movement can assist in changes in feelings, cognition, physical functioning, and behavior.

Dance as therapy came into existence in the 1940s, especially through the efforts of Marian Chace. Psychiatrists in Washington, D.C., found that their patients were improving from attending Chace's creative dance classes. Chace worked with individuals at St. Elizabeth Hospital that were too mentally sick to participate in regular group activities. A non-verbal group approach was needed and dance/movement therapy met that need. Today, creative dance has been shown to decrease depression and is being used as an alternative treatment for bipolar and post-traumatic stress disorder.

Chia-Ying Lien
Assistant Professor, National Taiwan University, Taiwan

The Effect of Endurance Exercise on Breast Cancer Treatment Herceptin Combined with Doxorubicin on Mice Cardiotoxicity

Herceptin is a monoclonal antibody, which can inhibit human epidermal growth factor receptor-2 (HER-2) overexpression breast cancer growth and improve antineoplastic activities such as doxorubicin (DOX). However, a major side effect of combining HER-2 and DOX is cardiotoxicity which may lead to heart failure or death. Purpose: The primary purpose of this study is to determine whether endurance exercise can attenuate DOX cardiotoxicity without impairing the antineoplastic activities of DOX. A secondary purpose is to investigate possible mechanisms for cardioprotection against DOX-mediated cardiotoxicity if the DOX oncologic value remains intact. Method: Forty female nude mice (BALB/c NU) were randomly assigned into following four groups: CON (control), SKBR3/DOX (DOX), SKBR3/DOX/HER (HER) and SKBR3/DOX/HER/EX (EX). Injection protocol (time and volume) for each animal was the same. The only difference was the chemical treatment (SAL, SKBR3, DOX, and HER) during injection. 8-week old mice received either abreast cancer cells (SKBR3) inoculation (DOX, HER, and EX) or saline injection (CON). One day post inoculation, the EX group underwent an exercise program (running on a treadmill, 10-15 meters/min, 30 min/day and 4 times/week). Three days after inoculation, animals received DOX (3 injections, 3mg/kg/wk) and Herceptin injections (total 7 injections: 6mg/kg for 1st injection, 3mg/kg/3d for other 6 injections). Twenty-four days after the start of the experiment, animals' in vivo cardiac function was assessed by echocardiogram. Results: DOX and Herceptin were effective anti-tumor treatments as no tumor was evident in any groups. Combining HER-2 and DOX resulted in a significantly increased left ventricle wall thickness (PWd, RWTd and RWTs, $P < .05$). However, myocardial hypertrophy was not observed in EX ($P > .05$). Conclusion: It is clear that 24-days of DOX/HER resulted in a pathological cardiac hypertrophy; however, endurance exercise preserved cardiac geometry. It is plausible that exercise during cancer treatment may be cardioprotective against cardiotoxicity induced by DOX/Herceptin treatment combinations while the antineoplastic efficacy is maintained.

Mildred Naquin
Professor, Southeastern Louisiana University, USA
Marie Zannis
Associate Professor, Nicholls State University, USA
Janet Jones
Assistant Professor, Southeastern Louisiana University, USA
Wynn Gillan
Assistant Professor, Southeastern Louisiana University, USA
Ifigenia Georgiadou
Director, Hellenic Culture Centre, Greece
Corrine Cormier
Graduate Assistant, Southeastern Louisiana University, USA
&
Jessica Friley
Graduate Assistant, Southeastern Louisiana University, USA

Health Status and Behaviours of Greeks and Americans

Differences in the health status and health behaviors of individuals in diverse countries have become of increasing interest. The purpose of this study was to examine the health status and health behaviors of the Greek people as compared to individuals in the United States of America (USA). Methods of study included observation and interviewing while in Greece, and comparisons of surveillance systems of both nations. Selected research studies were also examined. In addition to the health status of Greeks and Americans, four health behaviors were targeted for study including use of tobacco, nutritional practices, exercise/physical activity, and sleep behaviors. Although in 2014 the American death rate was lower (823.7 per 100,000 population) than in Greece (1,041 per 100,0000), the average life expectancy was similar in the two countries: 79.8 years in the USA and 80.5 years in Greece. For adults, 20.1% of Greeks and 36.5% of Americans are obese. Many Greeks and Americans do not get enough physical activity, 46.6% of Greek adults and 80% of Americans. Greeks typically follow the Mediterranean Diet, but because of economic and sociological factors, their diets have been changing to include more convenience foods. Americans are advised to follow the United States Department of Agriculture's MyPlate and the US Dietary Guidelines. However, Americans increasingly consume more fast foods. Greece has twice the overall prevalence of smoking (41%) than the USA (19%), and in both nations males smoke more than females. American youth are using electronic cigarettes more than regular cigarettes, unlike in Greece

where more youth smoke regular cigarettes. In some regions of Greece, midday napping is still practiced, providing numerous health benefits including increases in alertness and productivity, in addition to lessening the likelihood of death from heart attacks. In both countries, the need for health education and promotion is apparent. The USA supports a vast public health network including public health agencies and universities offering degrees in public health. In Greece such efforts in public health are limited and social marketing of predominant health issues is rare.

Y. Gul Ozkaya
Professor, Akdeniz University, Turkey
Mehmet Ali Ozcelik
Akdeniz University, Turkey
Nese Toktas
Akdeniz University, Turkey
Aysen Turk
Health Sciences University, Turkey
Ali Eraslan
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Serap Akyol Tunc
Health Sciences University, Turkey
Funda Seferoğlu
Akdeniz University, Turkey
&
Abdurrahman Aktop
Associate Professor, Akdeniz University, Turkey

The Effect of Whole Body Vibration Exercise as a Warm-up Procedure on Pain Threshold, Heart Rate and Blood Pressure Values at Rest, and Following Acute Exercise in Recreationally Active Men

A hypo-, or analgesic response occurs during, or following exercise, and termed as exercise-induced hypoalgesia (EIH) in the literature. The purpose of the present study is to investigate the alterations of whole body vibration exercise (WBVE) as a warm up procedure on pain threshold and physiological parameters at rest, during warm up period, and following acute exercise. Twenty male recreationally active men were participated into the study. Participants were randomly assigned as WBVE (V), or control (C) group. V group was applied a warm up protocol by using a whole body vibration platform with 3 sets, 60 sec each with 1 min rest between sets. C group was received a continuous warm up for 5 minutes using an ergo cycle with 70 rpm. Following warm up period, all participants were performed an isokinetic knee exercise. Pressure pain threshold, heart rate and blood pressure measurements were recorded at rest, following warm up and post-exercise periods. Results are presented as mean + SE. Repeated measurements were analyzed by using analysis of variance. A level of 0.05 was accepted as statistical significance. Acute exercise was resulted an increase in pain threshold values in both groups, however, there were no statistical differences on pain threshold values between groups

at rest, or following warm up, or acute exercise. Systolic blood pressure was found to be decreased in V group following warm up period in comparison with C group. In conclusion, although systolic blood pressure was decreased following WBVE warm up, EIH seems to be unaffected from different warm up protocols.

Jim Roberts
Professor, Edinboro University of Pennsylvania, USA

Quantifying Approaches and Accuracy of Athletes Completing Consecutive Day Marathons

Introduction: The popularity of marathon running to complete a marathon in each of the 50 United States has grown among marathon participants. There is currently little in the literature about these events and no studies quantifying how athletes alter the approach (pacing) to complete up to 7 marathons/days/states.

Purpose: The purpose of this study is to quantify the approach and accuracy across multiday marathon events. For example, if the athlete can normally run a 4 hour marathon when only completing one marathon, how much slower does he/she choose to run each one on multiple days and then was the approach successful?

Methods: Forty marathoners (17 males and 23 females ages 54.5±11.1 yrs.) of the 2016 Center of the Nation Series completed an online survey prior to running in the series. The survey included questions regarding about past performance and training as well as estimating finish time for each day of the series. Data for completion of the series was collected from the event website. Descriptives and paired t-test were analyzed with alpha set at 0.05.

Results: The average finish time was predicted to be between 50 minutes and 83 minutes slower than a one day performance. Actual finish times for day 1 were 385.96±77.7 mins. vs. predicted day1 369.6±59.4 mins. p=.026 By day 6, finish times were over 34 minutes off (predicted 402.5±72.0 vs. actual 436.9±66.6 mins. p=.049).

Conclusions: Marathoners completing a multiday marathon event chose a pace that was at least 50 minutes slower than what they believed they could run just once marathon and even this was still statistically significantly different from the actual performances. Very few participants ran their predicted pace within 5 minutes or faster and therefore the current prediction methods for multiday marathons were unsuccessful for the majority of participants.

Lisa Roberts
Teacher, General McLane School District, USA

A Three Year Study of Elementary Fitness Levels: Fall versus Spring

Introduction: It has been observed anecdotally that American students appear to be less fit after the summer break as opposed to the end of the previous school year. As stated by Franckle, Adler and Davison in 2014, more research is needed to assess if and why students lose fitness when school is not in session.

Purpose: This study examined fitness levels at the onset and culmination of three school years.

Methods: Fifty-five students participated in a Progressive Aerobic Cardiovascular Run test (PACER) at their Elementary School in third and fourth grade. Six students returned in fifth grade to perform a PACER at the onset of the school year. The PACER test is a common and valid test to assess cardiovascular fitness. Participants run a 20 meter distance before they hear a beep. If they miss 2 beeps, then their test is over. As the test progresses the time between beeps decreases and the test becomes more challenging. The students also completed a survey with regard to their current participation in physical activity, exercise, sports and physical education. The parents of the students accompanied them and the students completed the survey independent of their parents and in private.

Results: The students ranged in age from 8-11 years old. Improvements were noted from the beginning to the end of 3rd (21.3±15.5 vs. 24.5±17.1, p=0.028) and 4th grades (27.9±18.1vs. 30.0±18.5, p=0.028) and from the end of 3rd grade to the beginning of 4th grade (25.6±17.2 vs. 29.1±19.1, p=0.015). No significance was found from 4th grade to the start of 5th grade (p=0.686).

Conclusions: The students' cardiovascular fitness improved significantly during their 3rd and 4th grade school years as well as over the summer break. The students' fitness from the end of 4th grade to the beginning of 5th grade remained the same.

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Throwing Velocity in Youth Handball Players

Introduction. The objective in team-handball is to score more goals than the opposing team. Therefore, it is necessary that team-handball players possess a high level of interaction between throwing technique, precision and ball throwing velocity. These parameters could vary with age and with playing positions (Michalsik et al., 2014). The purpose of this study was to examine the differences in physical throwing velocity in youth handball players.

Methods. A total of 233 handball players (10-17 years old, 128 male, 105 female) participated in this study. The sample was divided into four groups: (a) 10-11 years old (n=84, 40 males, 44 females), (b) 12-13 years old (n=65, 37 males, 28 females), (c) 14-15 years old (n=51, 33 males, 18 females) and (d) 16-17 years (n=33, 18 males, 15 females). The players completed three throws and used one hand with their own technique to perform the throwing, and threw without opposition. The three throwing positions were throwing at seven meters standing stationary, throwing at nine meters after three steps and throwing at nine meters after three steps and a jump. The ball velocity was measured with a radar. One-way analysis of variance (ANOVA), with a subsequent Bonferroni post-hoc test were used to examine differences in throwing among the four age groups.

Results. In males there were differences ($p<0.001$) in the three throwing positions: seven meters stand stationary (a<b<c<d), throwing at nine meters after three steps (a<b<c,d) and throwing at nine meters after three steps and a jump (a<b<c,d). In females there were differences ($p<0.001$) in the three throwing positions: seven meters stand stationary (a<b,c<d), throwing at nine meters after three steps (a<b,c<d) and throwing at nine meters after three steps and a jump (a<b,c<d).

Discussion. In males there was no difference in throwing velocity in nine meters throwing in older players (c *vs* d). This finding is

contrary to a previous study (Rousanoglou et al., 2014). In females, there was no difference in any throwing in middle ages (b *vs* c). It could suggest that in females, after puberty, the throwing velocity does not change.

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Effects of Tai chi, Shadow Boxing, and Video Activities on the Balance of a Participant with Multiple Sclerosis: A Case Study

Various recreational activities have been identified as effective interventions to improve balance in individuals with compromised gait, poor balance, and a history of falls. This investigation explored the effectiveness of Tai chi, shadow boxing, and the Xbox Kinect on the balance of one participant with Multiple Sclerosis (MS). An eleven week program was implemented with each intervention scheduled for a 3 week duration. The participant's balance was assessed, both prior to and at the conclusion of each intervention, using the Multidirectional Reach test, Vestibular subtest of the Fullerton, and the Sensory Interaction in Balance test. Results suggest that the greatest improvement occurred following the implementation of the both Tai chi and the Xbox Kinect. As a case study, this investigation cannot provide conclusive results that one intervention is preferred over another. However, our findings provide emerging evidence that balance can potentially be improved through the use of Tai chi, the Xbox Kinect, and shadow boxing. Future research should explore these recreational interventions with a larger number of participants and over a greater duration of time. Activity professionals are encouraged to use these interventions to assist with fall prevention and improve balance in their participants.

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Kinesiology Analysis of the Ancient Olympics and of Performance Differences between Male and Female Olympic Champions of the Modern Games in Running, Swimming and Rowing

Kinesiology and physics are employed to better understand the performance of male and female athletes in the ancient and modern Olympic Games. In what we now call the ancient Olympics (actually the Pan-Hellenic Games at Olympia), then open only to men, athletes competing in the long jump (part of the pentathlon) carried 1.5-3 Kg weights called halteres. By training today's athletes, we have learned that by coordinating the backward and forward thrusting of those weights, about 5% in distance can be gained. In the javelin (also part of the pentathlon) a cord wound around the javelin unwrapped as the javelin was thrown, providing spin stabilization. When women competed in the Heraea Games at Olympia, they ran 5/6 (83%) as far as men, remarkably the same value as the velocity ratio of female/male Olympic running champions when women entered modern Olympic competition in 1928. For running, swimming and rowing, using physics and kinesiology, equations for the velocity ratios of female/male elite athletes were derived and then populated with parameters from studies of over 2000 athletes. Assuming equal training and efficiency, the female/male ratio for running velocity simplifies to the relative female/male lean-to-weight ratio; while for swimming and rowing, the velocity ratio becomes the 8/9th power of the relative lean-to-weight ratio, a remarkable similarity. For the average of Olympic champions in two time frames from 1980 until the present, the actual velocity ratios of about 90% are within tenths of a percent of the expected values, except for running where women have a 1% inefficiency due to longer-than men stride length (relative to height) induced by hip-height geometry. That extra 1% of wear strongly suggests that female athletes should strengthen knee joints to reduce the tendency of females to have six times the likelihood of ACL ligament tears as men.

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KIN-Scale: Comprehensive Anthropometric Assessment System

Anthropometry has a long history, and despite the advent of new technologies for body composition and physique assessment the value of detailed anthropometric measures should not be undervalued. The KIN-Scale system is a comprehensive anthropometric assessment system developed based upon normative data collected on 230 male and 336 female, mixed race/ethnic origin, undergraduate students aged 18 to 35 years of age. A flexible system, minimally it is comprised of height, weight and 6 skinfolds up to a complete comprehensive profile of height, weight, 9 skinfolds, 11 girths, 4 skinfold-adjusted girths, 6 bone widths or breadths, sitting height and 7 limb segment lengths. Body proportions are quantified using geometric scaling. The full KIN-Scale system facilitates the appraisal of weight for height, level of fatness, sexual dimorphic fat patterning, regional muscular development, frame size and proportional limb segment lengths. Several case studies (Rower, Wrestler, Four Sisters, 3 Females of different Race and Activity levels, Individuals Before and After Weight Loss and Gain) are presented to illustrate the power of the comprehensive anthropometric profiles to reflect the influence of race/ethnicity, athletic training, habitual activity, nutritional status, degree of androgyny, familial similarity, susceptibility to injury and change due to modification in diet and habitual activity.

Despite the wide range in ethnic and racial origins in the normative data, the case studies presented show that this mixed norm is in no way a detriment to interpretation. It has successfully been applied to over 500 individuals, accurately reflecting their personal genetic and activity related differences. Also, rather than being a system recommended for use by all, the KIN-Scale system is a recommended approach to anthropometric assessment that can be applied to any available normative anthropometric data set. It is customizable to any data set that minimally contains Height, Weight, some skinfolds and any other measures.

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Bilateral Transfer in Force Control is affected by the Exercise Weight: An Implication for Rehabilitation of Stroke Patients

Previous research by Yao et al. (2014) (*Perceptual & Motor Skills*, 118, 400-410) demonstrated that the learning effect of a sequential task consisting of timing and force controls was significantly transferred to the untrained limb for the timing control but not for the force control. This finding suggests that force control may not be a favorable candidate for a bilateral transfer. However, it is premature for this suggestion because Yao et al.'s (2014) finding could be caused by the high complexity of the task (i.e., consisting of both timing and force controls) and/or the low intensity of the force (i.e., only 10% of the MVC) used in their study. The purpose of the current study, therefore, was to examine these two confounding factors that might have affected Yao et al.'s (2014) results.

The current study consisted of two experiments. There were two groups (i.e., practice and control) in each experiment and 15 right-handed participants in each group. The first experiment was aimed at examining the effect of the task complexity on the bilateral transfer of force control. The participants of the practice group in the experiment learned a sequential task with their right hand which was similar to the one used by Yao et al. (2014) but consisted of the low force control only (10% of the MVC). The results of the experiment showed that, after the practice, the practice group improved their force control significantly compared to the pretest and to the control group. However, this learning effect was not transferred to the untrained hand. The second experiment was to determine the effect of force intensity on the bilateral

transfer of the force control. The participants of the practice group in this experiment learned the same task as the participants in the first experiment but with higher force intensity (i.e., 50% of the MVC).

The results showed that the practice group did not only improve the force control with the trained hand and this learning effect was also significantly transferred to the untrained hand. Putting together, the findings of the current study indicate that the force intensity, rather than the task complexity, has significant impact on the bilateral transfer of the force control. However, it should be noted that, due to the limitation of the current study, it is unknown if the same transfer effect found in the second experiment would still exist when a learned sequential task consisted of both timing control and high intensity force controls (e.g., ≥50% of the MVC).