

Physical Activity and Exercise: Health Promotion and Disease Prevention

**Edited by
Panagiota (Nota) Klentrou**

Athens Institute for Education and Research

Physical Activity and Exercise: Health Promotion and Disease Prevention

**Edited by
Panagiota (Nota) Klentrou**

**Athens Institute for Education and Research
2012**

First Published in Athens, Greece by the
Athens Institute for Education and Research.

ISBN: 978-960-9549-62-2

All rights reserved. No part of this publication may be reproduced, stored, retrieved
system, or transmitted, in any form or by any means, without the written permission
of the publisher, otherwise circulated in any form of binding or cover.

Printed and bound in Athens, Greece by ATINER

8 Valaoritou Street, Kolonaki

10671 Athens, Greece

www.atiner.gr

©Copyright 2012 by the Athens Institute for Education and Research.
The individual essays remain the intellectual properties of the contributors.

Physical Activity and Exercise: Health Promotion and Disease Prevention

Table of Contents

1. Physical Activity and Exercise: Health Promotion and Disease An Introduction	1
<i>Panagiota (Nota) Klentrou</i>	
Part I: Health Promotion and Disease Prevention	
2. A Profile of Women Aged between 25 and 65 Years, Consisting of their Status in Relation to Physical Activity, Overweight and Obesity, Smoking, and Knowledge and Perceptions of Cardiovascular Disease	5
<i>Ceinwen Beverley Sawyer</i>	
3. Effect of Physical Activity on Emotions and Mood States of 50-65 Year Old Male and Female Participants	15
<i>Maria Konstantaki and Dorothy Thomas</i>	
4. Environmental Sustainability: An Ethical Response to Teaching Sustainable Health and Wellness	23
<i>Srijana M. Bajracharya</i>	
5. Environment Based Activity Adviser	35
<i>Yuzhong Lin, Bauke de Vries and Harry Timmermans</i>	
6. Lose to Win: A School Employee Health Promotion Program	45
<i>Roberta Faust, Christine Karshin, Anna Michalakis, Jeffrey Schulz, Lydia Kret, Enos Massie and Ronald Gibbs Jr.</i>	
Part II: Physical Activity, Fitness and Health during Childhood and Adolescence	
7. The Effects of Physical Education on Aerobic Capacity and Body Composition of Sixth Grade Pupils	61
<i>Andy Mooneyhan and Lance G. Bryant</i>	
8. FITNESSGRAM® Health-Related Physical Fitness in South African Children	67
<i>James R. Morrow Jr., Megan C. Self and Chris Erasmus</i>	
9. Adolescent Obesity: Examining Students' Attitudes and Values toward Physical Activity	77
<i>Emilio Landolfi</i>	
10. Internet Addiction and Chinese Adolescent Health	89
<i>Yi Lin Liu and Bill Altermatt</i>	
Part III: Physical Activity and Fitness in College and University	
11. Effect of a 15-week Pilates Course on Fitness Components in University Students	99
<i>Kristine Noel Clark and Christopher Tad Clark</i>	
12. The Gender Difference in Health Promotion among College Students	107
<i>Elizabeth S. Chong, Lorena Jung and Howard Lasus</i>	

13. A Proposed College Undergraduate Strength and Conditioning Program	117
<i>Harry Theodorides</i>	
14. Secretory Immunity and Frequency of Upper Respiratory Tract Infections in Relation to Salivary Cortisol and Physical Activity in University Students	129
<i>Panagiota Klentrou, Andreas D. Flouris, Jeffrey R. Aird and Thomas Cieslak</i>	
Part IV: Exercise and Nutrition	
15. Dietary Fiber Intake And Breast Cancer Risk Among the Romanian Females – Case-Control Study	139
<i>Bogdana Nasui, Daniela Curseu, Nina Ciuciuc, Monica Popa and Carmen Ionut</i>	
16. Effect of two Types of Vitamin C Supplementation on Exercise-induced Lipid Peroxidation and Muscle Damage	147
<i>Babak Nakhostin-Roohi, Farhad Rahmani-Nia, Parvin Babaei and Shahb Bohlooli</i>	
Part V: Exercise and Sport Bioscience	
17. Close Relationship between Bone Strength and Mass in Jumping Exercised Rats	157
<i>Foong-Kiew Ooi, Rabindarjeet Singh, Harbindar Jeet Singh and Yoshihisa Umemura</i>	
18. Changes in Force at the Front and Rear Blocks during the Sprint Start	169
<i>Stephen Cousins</i>	
19. The Effect of Foot Placement on Height of Vertical Jump	179
<i>Azadeh Doroodgar, Khalil Khayambashi and Vahid Zolaktaf</i>	

List of Contributors

- Jeffrey R. Aird**, *Brock University, Canada*
- Bill Altermatt**, *Assistant Professor of Psychology, Hanover College, USA*
- Parvin Babaei**, *Physiology Department of Guilan Medical University, Iran*
- Srijana M. Bajracharya**, *Associate Professor, Ithaca College, Ithaca, USA*
- Shahb Bohlooli**, *Ardebil University of Medical Sciences, Iran*
- Lance G. Bryant**, *Assistant Professor, Arkansas State University, USA*
- Elizabeth S. Chong**, *Associate Professor, College of Health and Human Services, George Mason University*
- Thomas Cieslak**, *Brock University, Canada*
- Nina Ciuciuc**, *Department of Environmental Health, University of Medicine and Pharmacy, Cluj-Napoca, Romania*
- Kristine Noel Clark**, *Lecturer, North Carolina State University, USA*
- Christopher Tad Clark**, *MEd Candidate in Community Counseling, North Carolina State University*
- Stephen Cousins**, *Graduate Teaching Assistant, University of East London, UK*
- Daniela Curseu**, *Department of Environmental Health, University of Medicine and Pharmacy, Cluj-Napoca, Romania*
- Azadeh Doroodgar**, *Instructor, Islamic Azad university Mobarakeh branch, Isfahan, Iran*
- Chris Erasmus**, *Community College, Centurion, South Africa*
- Roberta Faust**, *Professor of Physical Education, Eastern Michigan University, USA*
- Andreas D. Flouris**, *Brock University, Canada*
- Ronald Gibbs Jr.**, *Health Education Research Assistant, Eastern Michigan University, USA*
- Carmen Ionut**, *Department of Environmental Health, University of Medicine and Pharmacy, Cluj-Napoca, Romania*
- Lorena Jung**, *Doctoral Student*
- Christine Karshin**, *Interim Director, School of Health Promotion and Human Performance, Eastern Michigan University, USA*
- Khalil Khayambashi**, *Associate Professor, University of Isfahan, Iran*
- Panagiota (Nota) Klentrou**, *Professor and Associate Dean, Brock University Wollongong, Canada*
- Maria Konstantaki**, *Senior Lecturer in Sports Science, School of Sport, Leisure and Travel, Faculty of Design, Media and Management, Buckinghamshire New University, UK*
- Lydia Kret**, *Interim Director, Dietetics and Human Nutrition, Eastern Michigan University, USA*
- Emilio Landolfi**, *Professor, University of the Fraser Valley, Canada*
- Howard Lasus**,
- Yuzhong Lin**, *PhD Candidate, Department of Architecture, Building and Planning, Eindhoven University of Technology, the Netherlands*

Yi Lin Liu, *Assistant Professor of Health and Fitness, Hanover College, USA*
Enos Massie, *Professor of Social Work, Eastern Michigan University, USA*
Anna Michalakis, *Health Education Research Assistant, Eastern Michigan University, USA*
Andy Mooneyhan, *Assistant Professor, Arkansas State University, USA*
James R. Morrow Jr., *Regents Professor, University of North Texas, USA*
Bogdana Nasui, *Assistant Professor, Department of Environmental Health, University of Medicine and Pharmacy, Cluj-Napoca, Romania*
Babak Nakhostin-Roohi, *Islamic Azad University, Ardebil Branch, Iran*
Foong-Kiew Ooi, *Sports Science Unit, Universiti Sains Malaysia, Malaysia*
Monica Popa, *Department of Environmental Health, University of Medicine and Pharmacy, Cluj-Napoca, Romania*
Farhad Rahmani-Nia, *Exercise Physiology Department of Guilan University, Iran*
Ceinwen Beverley Sawyer, *Senior Lecturer, Cardiff School of Sport, University of Wales Institute, Cardiff, Wales, UK*
Jeffrey Schulz, *Professor of Health Education, Eastern Michigan University, USA*
Megan C. Self, *University of North Texas, USA*
Harbindar Jeet Singh, *Faculty of Medicine, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia*
Rabindarjeet Singh, *Advance Medical and Dental Institute, Universiti Sains Malaysia, Malaysia*
Harry Theodorides, *Assistant Professor, Department of Kinesiology and Health Science, California State University, USA*
Dorothy Thomas, *School of Sport, Leisure and Travel, Faculty of Design, Media and Management, Buckinghamshire New University, UK*
Harry Timmermans, *Professor, Department of Architecture, Building and Planning, Eindhoven University of Technology, the Netherlands*
Yoshihisa Umemura, *School of Health and Sports Science, Chukyo University, Toyota, Japan*
Bauke de Vries, *Professor, Department of Architecture, Building and Planning, Eindhoven University of Technology, the Netherlands*
Vahid Zolaktaf, *Associate Professor, University of Isfahan, Iran*

Chapter 1

Physical Activity and Exercise: Health Promotion and Disease Prevention: An Introduction

Panagiota (Nota) Klentrou, Brock University, Canada

Kinesiology is the multidimensional study of movement as it relates to human health and performance. It is a complex discipline that requires integrated research to study all the different biopsychosocial determinants of the relationship of health with physical activity. During the last few decades, progress has been made in regards to of the full integration of physical activity, health promotion and the management of chronic diseases across the lifespan. Sophisticated technologies and innovative interventions have added important information in the study of physical activity, fitness and exercise. In addition, healthy lifestyle behaviours establish in young ages and continue during aging in order to prevent disease associated with impaired quality of life, physical decline and mortality. Therefore, it is not one but a number of different of sub-specialties that are holding the scientific evidence in Kinesiology including: exercise physiology and biochemistry, exercise psychology, physical activity measurement and evaluation, motor behaviour, sport and health administration, as well as socio-cultural determinants of health. This book includes research studies presented at the ATINER conference the last few years from a variety of these sub-specialties. This makes the selection of studies multidisciplinary and as such it moves beyond the biomedical model to focus on the multidimensionality of health, fitness and disease management incorporating disciplines spanning the 'social to cellular'. There is also a clear focus on distinct special populations with programs addressing an array of chronic diseases with an emphasis on using physical activity and exercise for human health to disease prevention and management and, more importantly, secondary social and health complications that influence overall quality of life.