THE CONFERENCE IS SUPPORTED by Latvian food producers Food union "Rīgas Piensaimnieks" and "Rīgas piena kombināts" (Riga Dairy Producer Ltd.), Orkla Foods Latvia "Gutta", Institute of Horticulture (Dobele), Research Farm "Gundegas", Institute of Agricultural Resources and Economics Stende Research centre, SIA "Milzu", "Graci professional cereals" and OrklaHealth (Nutrilless, Möllers), A/S OlainFarm, the Riga Tourism Development Bureau "Live Riga", Global Harmonization Initiative (GHI).

2ND INTERNATIONAL CONFERENCE
"NUTRITION AND HEALTH"
Riga, Latvia
October 5–7, 2016

PUBLISHED BY:
University of Latvia Press

ISBN 978-9934-18-177-1
2ND INTERNATIONAL CONFERENCE
“NUTRITION AND HEALTH”

Riga, Latvia
October 5–7, 2016

CONFERENCE PROGRAM
AND
BOOK OF ABSTRACTS

ORGANISED BY
UNIVERSITY OF LATVIA,
LATVIA UNIVERSITY OF AGRICULTURE,
RIGA STRADIŅŠ UNIVERSITY

UNIVERSITY OF LATVIA PRESS

EDITORS IN CHIEF:
Dr. chem. Assoc. prof. Ida Jakobsone
Secretary Madara Jakobsone

Proof reader Andra Damberga
Layout Andra Liepiņa

CONFERENCE BOARD:
Indriķis Mužnieks, Dr. habil. biol., Rector, University of Latvia
Irina Pilvere, Dr. oec., Rector, Latvia University of Agriculture
Jānis Gardovskis, Dr. habil. med., Rector, Riga Stradiņš University
Iveta Ozolanta, Dr. habil. med., Vice-rector of science, Riga Stradiņš University
Valdis Sēļiņš, Dr. geol., Vice-rector for exact sciences, life and medical sciences, University of Latvia
Arnis Mugurevičs, Dr. vet. med., Vice-rector of sciences, Latvia University of Agriculture

INVITED LECTURERS:
Inga Birzniece (Latvia) Ministry of Health (MOH);
Randi Julie Tangvik (Norway) National Advisory Board on Disease Related Malnutrition, Oslo University Hospital;
Ivetas Pudukle (Latvia) The Centre for Disease Prevention and Control of Latvia;
Carina Kronberg-Kipiliä (Finland) Nutricia Baby Oy;
Andrejs Erglis (Latvia) Institute of Cardiology and Regenerative Medicine, University of Latvia, Riga, Latvia; Pauls Stradiņš Clinical University Hospital, Riga, Latvia;
Iveta Mintale (Latvia) P. Stradiņš Clinical University Hospital, Cardiology Centre, University of Latvia;
Markus Masen (Germany) Deutsche Stiftung gegen Mangelernährung;
Elena Bartkiene (Lithuania) Department of Food Safety and Quality, Lithuanian University of Health Sciences;
Daina Karklina (Latvia) Faculty of Food Technology, Latvia University of Agriculture;
Huub Lelievelde (Netherlands) The Global Harmonization Initiative (GHI);
Aliga Rurane (Latvia) Head, WHO Country Office in Latvia;
Laila Meija (Latvia) Riga Stradiņš University;
Dace Rezeberga (Latvia) Riga Stradiņš University.

© University of Latvia, 2016

ISBN 978-9934-18-177-1

SCIENTIFIC COMMITTEE:
Daina Kārkliņa, Dr. sc. ing., Latvia University of Agriculture
Inga Ciprovica, Dr. sc. ing., Latvia University of Agriculture
Renāte Ligere, Dr. habil. med., University of Latvia
Elena Bartkiene, Dr. biol., Lithuanian University of Health Sciences
Gundega Knipse, Dr. med., University of Latvia
Juris Pokrotnieks, Dr. med., Riga Stradiņš University
Andrejs Erglis, Dr. med., University of Latvia
Gustavs Latkovskis, Dr. med., University of Latvia
Iveta Mintale, Dr., Pauls Stradiņš Clinical University Hospital
Aldis Puķītis, Dr. med., University of Latvia
Gunta Purkalne, Dr. med., University of Latvia
Anita Villeruša, Dr. med., Riga Stradiņš University
Aivars Vētra, Dr. med., Riga Stradiņš University
Ilze Konrads, Dr. med., Riga Stradiņš University
Dace Gardovska, Dr. hab. med., Riga Stradiņš University
Inga Miller, Dr. med., Riga Stradiņš University
Māija Dambrava, Dr. pharm., Latvian Institute of Organic Synthesis
Dace Tīrītze, Dr. biol., Latvian Institute of Organic Synthesis
Dace Rezeberga, Dr. med., Riga Stradiņš University
Zigurds Zariņš, Dr. med., Riga Stradiņš University
Ingrida Rumba Rozenfelde, Dr. habil. med., University of Latvia
Līga Ozoliņa-Moli, Dr. biol., University o' Latvia
Aiga Stākļa, Dr. med., University of Latvia
Virma Nikolajeva, Dr. biol., University of Latvia
Laila Meija, Dr. med., Riga Stradiņš University
Andreja Šķesters, Dr. biol., Riga Stradiņš University
Sanita Zute, Dr. agr., Institute of Agricultural Resources and Economics
Andis Brēmanis, Dr., Latvian Nutrition and Dietetics Association
Nils Rostoks, Dr. biol., University of Latvia
Māra Jurīte, Dr. chem., Riga Technical University
Mārtiņ Kļaviņš, Dr. habil. chem., University of Latvia
Ilze Ļakste, Dr. chem., Latvia University of Agriculture
Vadims Bartkevičs, Dr. chem., University of Latvia
Melita Sauka, Dr. paed., University of Latvia
Guntars Selga, Dr. med., Riga Stradiņš University

ORGANIZING COMMITTEE:
Ida Jakobsone, Dr. chem., Conference Chair, University of Latvia
Lolita Vija Neiman, Dr., Conference Vice Chair, Riga Stradiņš University
Zanda Krūma, Dr. sc. ing., Conference Vice Chair, Latvia University of Agriculture
Inga Šmite, State Sports Medicine Center of Latvia
Ilze Straume, Centre for Disease Prevention and Control of Latvia
Guna Zvirbule, Health communication expert
Līga Balode, Dr. med., Riga Stradiņš University
Eivīta Straume, Dr. sc. ing., Latvia University of Agriculture
Ansis Zauers, Latvia University of Agriculture
Jānis Vitols, University of Latvia
Dace Silara, Managing Director, Department of Chemistry, University of Latvia

CONFERENCE SECRETARIAT:
Madara Jakobsone, University of Latvia
Antra Plane, University of Latvia
Māra Grundmane, Riga Stradiņš University
Kristine Ozola, Riga Stradiņš University
Zane Andersons, Riga Stradiņš University
P17  BODY MASS COMPOSITION (BMC) AND FAT QUANTIFICATION METHODS

A. Vetra1, Z. Pavare1,3, I. Dabolina2, E. Lapkovska2, V. Larins3
1 Rehabilitation Research laboratory of RSU RF, Dzirciena iela 16, Riga, LV-1007, Latvia
2 Riga Technical University, FMSAC, Institute of Design Technologies, Kipsalas iela 6-220, Riga, LV-1048, Latvia
3 Latvian Academy of Sport Education, Brīvības iela 333, Riga, LV-1006, Latvia

The BMC is an important indicator for describing anthropometry that allows to assess human health. The BMC is characterized by a balance between energy consumption and dietary intake. With an increase of quantity of the fat above the optimal amount, the risk of cardiovascular disease, type 2 diabetes, metabolic syndrome, arthritis and tumours increases significantly.

Body weight is used in assessment of composition in methods like hydrostatic balance, DEXA, plethysmography, caliperometry of adipose tissue folds, bioelectrical impedance measurement method. Precision of caliperometry is affected by the amount of measurement spots, where the measurements are made, though by using different formulas the error exceeds the limit of 3–4% (Hoffman, 2006).

With a measure of the thinness in juxtaposition to obesity, the continuum is characterized by individual differences of the components (for the most part, of the quantity of fat) for body weight. Bioelectrical impedance method is relatively accurate and results are equal to DEXA method that is considered ‘gold’ for determining the composition of body mass (Kyle, 2000). In order to determine low, normal and increased percentages of fat and obesity in children and young adults aged 10 to 17, a health evaluation has been established with limit values and a percent scale (McCarthy et al., 2006). Gathering of non-contact anthropometric data is ensured by 3D anthroscanner Vitus Smart XXL® with Anthroscan software. Determination of the human body fat by the fat total mass estimation as a result of 3D scan – fat % obtained by the method of extreme exhalation and scanning of human body.

Simplicity and speed of anthropometry measurements allow to project studies with large number of subjects that can be rather well organized, e.g., pupils, policemen, soldiers, etc. However, usefulness of this method has not been studied sufficiently and it still needs a comparative evaluation with traditional methods.

Keywords: anthroscanning, human body fat mass, caliperometry.