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## 2<sup>ND</sup> INTERNATIONAL CONFERENCE "NUTRITION AND HEALTH"

Riga, Latvia  
 October 5-7, 2016



CONFERENCE PROGRAM  
 AND  
 BOOK OF ABSTRACTS

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BOOK OF ABSTRACTS**

ORGANISED BY  
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## **P17 BODY MASS COMPOSITION (BMC) AND FAT QUANTIFICATION METHODS**

**A. Vetra<sup>1</sup>, Z. Pavare<sup>1,3</sup>, I. Dabolina<sup>2</sup>, E. Lapkovska<sup>2</sup>, V. Larins<sup>3</sup>**

<sup>1</sup> Rehabilitation Research laboratory of RSU RF, Dzirciema iela 16, Riga, LV-1007, Latvia

<sup>2</sup> Riga Technical University, FMSAC, Institute of Design Technologies, Kipsalas iela 6-220, Riga, LV-1048, Latvia

<sup>3</sup> 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.