



BIO-IMPEDANCE ANALYSIS RESULTS IN RESIDENTS OF THE ESIL DISTRICT OF ASTANA

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Key words: Bio-impedance, Tanita, visceral fat rating, bone mass, metabolic age, phase angle, personalized medicine.

Introduction On 28th July 2017 (World Hepatitis Day), 124 residents of the Esil district of Astana were tested for viral hepatitis B and C and informed about associated liver diseases. Of these, 73 (55 females and 18 males) also underwent bioelectrical impedance analysis.

Methods Bio-impedance analysis was made according to a standard protocol on an advanced segmental multi frequency BIA analyser Tanita MC 780 MAS portable (Tanita Corporation, Tokyo, Japan). The instrument is equipped with eight tactile electrodes which are incorporated in steel foot pad and in hand grips. The subject was asked to stand in bare feet on the metal foot plate of the analyser, gently holding the hand grip with the arms straight and hung down in neutral standing position, without skin to skin contact.

Results Mean age of males was 43.7 years (min 21, max 78) and of females 41.89 (min 13, max 71); mean BMI was 26.69 in males and 24.83 in females. 61.1% of males were obese or overweight compared with 43.6% of females. Body fat percentage was high or increased in 50% of males and in 23.6% of females. 5.5% of males had increased muscular mass compared to 12.7% of females while the remaining had good or low muscular mass. Visceral fat rating was excessive in 33.3% of males compared to only 3.6% of females. Bone mass was reduced in 66.6% of males and in 71% of females across all ages. Extracellular/Total body water ratio was >40 in 55.5% of males and in 83.6% of females. The metabolic age was higher than the chronologic one in 44.4% of males and in 23.6% of females. 77.7% of males had good phase angle compared to 11% of females. Physique rating showed medium and large frame obesity in 50% of men and 23.6% of women.

Conclusions These results show a worrying percentage of obesity in males and reduced bone mass in both genders and highlight the importance of bio-impedance analysis in the era of personalized medicine.