Bodygee Science: Bibliography

Body Fat Measurement

Overview measurement methods (Review)

Ackland TR, Lohman TG, Sundgot-Borgen J, Maughan RJ, Meyer NL, Stewart AD, et al. (2012) Current status of body composition assessment in sport: review and position statement on behalf of the ad hoc research working group on body composition health and performance, under the auspices of the I.O.C. Medical Commission. Sports Med 42:227-249

https://www.ncbi.nlm.nih.gov/pubmed/22303996

Categorization

Gallagher D, Heymsfield SB, Heo M, Jebb SA, Murgatroyd PR, Sakamoto Y (2000) Healthy percentage body fat ranges: an approach for developing guidelines based on body mass index. Am J Clin Nutr 72:694-701

https://www.ncbi.nlm.nih.gov/pubmed/10966886

Development US Navy formula

Hodgdon, J.A. and M.B. Beckett (1984a) Prediction of percent body fat for U.S. Navy men from body circumferences and height. Report no. 84-11, Naval Health Research Center, San Diego, CA

www.dtic.mil/dtic/tr/fulltext/u2/a143890.pdf

Hodgdon, J.A. and M.B. Beckett (1984b) Prediction of percent body fat for U.S. Navy women from body circumferences and height. Report no. 84-11, Naval Health Research Center, San Diego, CA

www.dtic.mil/dtic/tr/fulltext/u2/a146456.pdf

Accuracy: validation US Navy formula with DXA

Friedl KE, Vogel JA (1997) Validity of percent body fat predicted from circumferences: classification of men for weight control regulations. Mil Med 162:194-200

https://www.ncbi.nlm.nih.gov/pubmed/9121667

Friedl KE, Westphal KA, Marchitelli LJ, Patton JF, Chumlea WC, Guo SS (2001) Evaluation of anthropometric equations to assess body-composition changes in young women. Am J Clin Nutr 73:268-275

https://www.ncbi.nlm.nih.gov/pubmed/11157323

Accuracy: validation 3D Scan fat measurement by "Army formula" with DXA

Garlie TN, Obusek JP, Corner BD, Zambraski EJ (2010) Comparison of body fat estimates using 3D digital laser scans, direct manual anthropometry, and DXA in men. Am J Hum Biol 22:695-701

https://www.ncbi.nlm.nih.gov/pubmed/20737619

Accuracy: validation 3D scan fat measurement by volume with DXA

Adler C, Steinbrecher A, Jaeschke L, Mahler A, Boschmann M, Jeran S, et al. (2017) Validity and reliability of total body volume and relative body fat mass from a 3-dimensional photonic body surface scanner. PLoS One 12:e0180201

https://www.ncbi.nlm.nih.gov/pubmed/28672039

Wang J, Gallagher D, Thornton JC, Yu W, Horlick M, Pi-Sunyer FX (2006) Validation of a 3-dimensional photonic scanner for the measurement of body volumes, dimensions, and percentage body fat. Am J Clin Nutr 83:809-816

https://www.ncbi.nlm.nih.gov/pubmed/16600932

Circumference measurement

Accuracy: validation with manual measurement and re-test reliability

Wang J, Gallagher D, Thornton JC, Yu W, Horlick M, Pi-Sunyer FX (2006) Validation of a 3-dimensional photonic scanner for the measurement of body volumes, dimensions, and percentage body fat. Am J Clin Nutr 83:809-816

https://www.ncbi.nlm.nih.gov/pubmed/16600932

Body Mass Index (BMI) / Waist to Hip Ratio (WHR)

Classification

WHO (2008). Waist circumference and Waist-Hip Ratio. Report of a WHO Expert Consultation. Geneva: World Health Organization.

https://www.who.int/publications/i/item/9789241501491

Overview: accuracy and clinical assessment

Huxley R, Mendis S, Zheleznyakov E, Reddy S, Chan J (2010) Body mass index, waist circumference and waist:hip ratio as predictors of cardiovascular risk - a review of the literature. Eur J Clin Nutr 64:16-22

https://www.ncbi.nlm.nih.gov/pubmed/19654593

Nuttall F. Q. (2015). Body Mass Index: Obesity, BMI, and Health: A Critical Review. Nutrition today, 50(3), 117-128.

https://www.ncbi.nlm.nih.gov/pubmed/27340299

Cohn JN (2007). Review: increased waist circumference or waist-to-hip ratio is associated with increased risk of cardiovascular events. Evid Based Med 12:184

https://www.ncbi.nlm.nih.gov/pubmed/17403720

Resting Metabolic Rate (RMR)

Accuracy: validation with indirect calorimetry

Frankenfield D, Roth-Yousey L, Compher C (2005) Comparison of predictive equations for resting metabolic rate in healthy nonobese and obese adults: a systematic review. J Am Diet Assoc 105:775-789

https://www.ncbi.nlm.nih.gov/pubmed/15883556

Bioelectric Impedance Measurement (BIA)

Accuracy: overview of validation studies with DXA/UWW

Moon JR (2013) Body composition in athletes and sports nutrition: an examination of the bioimpedance analysis technique. Eur J Clin Nutr 67 Suppl 1:S54-59

https://www.ncbi.nlm.nih.gov/pubmed/23299872

Accuracy: validation study of different BIA devices

Pateyjohns IR, Brinkworth GD, Buckley JD, Noakes M, Clifton PM (2006) Comparison of three bioelectrical impedance methods with DXA in overweight and obese men. Obesity (Silver Spring) 14:2064-2070

https://www.ncbi.nlm.nih.gov/pubmed/17135624

Skinfold Thickness Measurement (Caliper)

Accuracy: overview of validation studies

Wells JC, Fewtrell MS (2006) Measuring body composition. Arch Dis Child 91:612-617

https://www.ncbi.nlm.nih.gov/pubmed/16790722