

Human Anatomy & Physiology Practical – Anthropometric Data and Body Composition

Learning Objectives

- To understand the measurements involved in body composition
- To perform bioelectrical impedance/ waist & hip circumference/ and body mass index on class
- Compare the results for all three measures and discuss the differences in values between the measures
- To be able to record data on excel documents accurately and understand the effects of the measurements you have taken.

Anthropometric Data

- Take each other height using the stadiometer
- Take each others weight using the scales
- Document each others age, height, weight and gender on an excel document for discussion

Body Mass Index

- Strong association between lifestyle, disease risk and obesity
- Can assist in the identification of certain lifestyle traits in relation to specific conditions
- Was utilised on obesity-related disease
- Not to be taken in isolation

Waist and Hip Ratios

- Used to identify body fat distribution
- Higher values of Abdominal Body Fat indicate higher adiposity in the abdomen, whilst lower values indicate greater hip adiposity.
- Abdominal adiposity associated with some Cardiovascular Diseases
- Not to be taken in isolation

Waist-to-Hip Ratio (WHR) Norms				
Gender	Excellent	Good	Average	At Risk
Males	<0.85	0.85–0.89	0.90–0.95	≥0.95
Females	<0.75	0.75–0.79	0.80–0.86	≥0.86

Task

- Step onto the Bio-electrical machine (under direction of the lab technician) and take hold of the handles. The machine will analyse your body composition.
- For hip-waist circumference – waist from line of the belly button and hips from the widest lateral part of your client's hips
- Take values for height and weight. Follow the calculation $(\text{weight}) / (\text{height} \times \text{height})$ to calculate BMI

Task

Compare results between BEI and the other measures as stated in the protocols

Background reading – familiarise yourself with the chapter in Seeley Stephens and Tate/ Sport & exercise physiology testing guidelines

Record all your results on the excel document under a separate TAB