

## Anthropometry Measurements of Obesity and Causes

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### About the Study

Anthropometric measures are commonly registered in the health care: weight, height, waist circumference (waist), and hip circumference (hip). Additionally, two quotients derived from these measures, body mass index (BMI, weight kg/height m<sup>2</sup>) and waist-to-hip ratio (waist/hip), are often used.

Obesity is a medical condition involving an abnormal or excessive fat accumulation. That presents a negative effect on death. Obesity is defined as having Body Mass Index (BMI) of 30 kg/m<sup>2</sup> or more. The range 25-30 kg/m<sup>2</sup> is defined as overweight. A body mass index is a measurement obtained by dividing a person's weight by the square of the person's height.

### Causes of Obesity

#### Common causes of obesity

Obesity is caused by eating more calories than you burn through exercise and normal daily activities. As a result, body stores these excess calories as fat. Inactivity- having a sedentary lifestyle. Unhealthy eating such as eating a poor diet of foods high in calories. Lack of sleep, this can lead to hormonal changes that can increase appetite. may also crave foods high in calories, which can contribute to weight gain. Genetics can play a role in how body converts food into energy and how body burns calories during exercise. Aging, which lead to a decrease in the amount of muscle in body. This decreased muscle mass lead slower metabolic rate, making it easier to gain weight. Certain medications may cause weight gain or changes in the body composition, such as insulin, antidepressants, steroids and some form of hormonal contraception.

#### Medical causes of obesity

- Polycystic ovary syndrome
- Prader-willi syndrome
- Cushing syndrome
- Hypothyroidism
- Diagnosis

### Anthropometry Measurements of Obesity

- BMI
- Waist hip ratio
- Skin fold thickness

- Air displacement plethysmography
- Total body electrical conductivity

#### Body Mass Index (BMI)

Calculated as weight (kg)/height(m<sup>2</sup>). Correlation between rise in BMI and complications.

BMI measures the individual's total weight relative to its height (kg/m<sup>2</sup>). BMI may be high in a very muscular person and women having greater fat mass which gives the misleading BMI range in certain cases.

#### Waist hip ratio

- Obesity is further evaluated in terms of fat distribution around the waist
- Men with waist measurement of 94 cm or more and women with a waist measurement of 80 cm or more are more likely to develop obesity-related health problems.
- Obesity is a chronic medical conditions that increase your risk of diseases and health problems particularly certain types of cancer, cardiovascular diseases, type 2 diabetes, osteoarthritis, infertility, irregular periods, nonalcoholic fatty liver, obstructive sleep apnea.
- Obesity can also affect quality of life and lead to psychological problems such as depression, low self esteem, shame, guilt and social isolation. Obesity is more common in women than in men. Obesity is a leading preventable causes of death worldwide, mainly affected groups are children and adults.

#### Skin fold thickness

Measure the thickness of fold of skin with its underlying layer of fat. There are key locations of body. Which have shown in research studies to be representative of total amount of fat on the body. Because of key locations people can't measure their own fat.

#### Air displacement plethysmography

Air Displacement Plethysmography (ADP) is a two-component model that assesses mass and volume and therefore an estimation of Body Density (BD). From this, body density derived from mass divided by volume can provide estimation of fat and Fat-Free Mass (FFM).

### Total body electrical conductivity

A conductivity meter measures the amount of electrical current or conductance in a solution. Conductivity is useful in determining the overall health of a natural water body. Conductivity meters are common in any water treatment or monitoring situation, as in environmental laboratories. A conductivity system measures conductance by means of

electronics connected to a sensor immersed in a solution. The analyzer circuitry impresses an alternating voltage on the sensor and measures the sizes of the resulting signal. An integral temperature sensor incorporated into its circuitry adjusts the reading to a standard temperature. The units of conductivity are siemens per cm (s/cm).