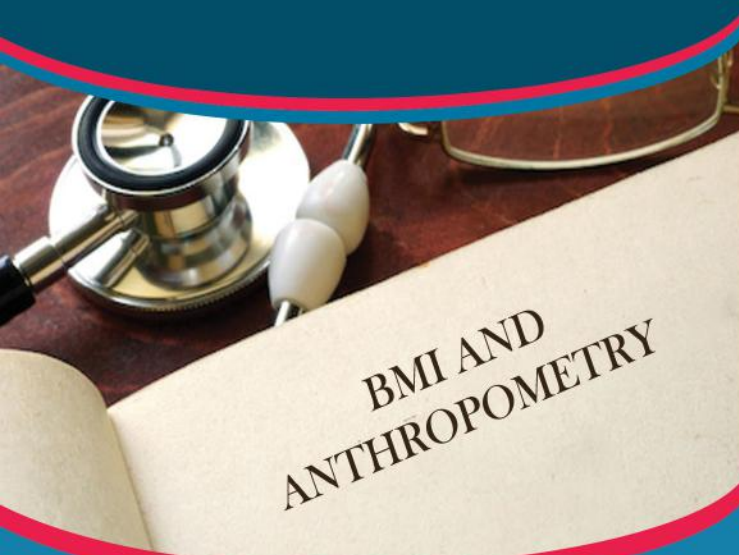




BMI And Anthropometry



The BMI calculation is the weight in kilograms, divided by the height in meters squared.

► BMI Ranges ◀

Commonly accepted BMI ranges are underweight (under 18.5 kg/m²), normal weight (18.5 to 25), overweight (25 to 30), and obese (over 30). One of the main deficiencies of BMI is that it does not differentiate between fat mass and fat-free mass. Not all people with high levels of body fat have a BMI of 30 or greater, and some people with very high BMIs may have little fat mass. Another main deficiency of BMI is that it does not account for body fat distribution. Indices assessing the distribution of body fat include waist circumference (WC), waist-to-hip ratio (WHR), or a waist-to-height ratio (WHtR). The waist circumference (WC) and the waist-to-hip ratio (WHR), have become widely accepted measures for assessing abdominal obesity.

► Other anthropometric measurements ◀

The amount of subcutaneous fat can be estimated by measuring thickness directly using a skinfold caliper at different sites on the body. The sites most often used are the upper arm (biceps and triceps), under the scapula (subscapular), and above the iliac crest (suprailiac). Circumferences are more reliable than skinfolds. It is measured at the minimum circumference between the iliac crest and the rib cage using an anthropometric tape.



► Skinfold landmarks on the right side of the body:

- Triceps skinfold
- Biceps skinfold
- Volar forearm skinfold
- Subscapular skinfold (below shoulder blade)
- Abdominal skinfold
- Suprailiac skinfold
- Thigh skinfold

► **Body circumferences:** Mid-brachial, calf, waist, and hip circumferences were measured using a flexible non-elastic measuring tape.

► **Girth Measurement Method:** Girth dimensions are measured using a soft metric tape.

- Chest circumference in the normal position
 - Arm circumference relaxed
 - Arm circumference flexed
 - Gluteal circumference
 - Abdominal circumference
 - Waist circumference



BMI And Anthropometry



- ▶ Skinfold thickness
- ▶ Head circumference

Anthropometric measurements are a series of quantitative measurements of the muscle, bone, and adipose tissue used to assess the composition of the body.

▶ BMI and Anthropometry ◀ Definition

Anthropometry is the most common technique used to assess the presence and degree of protein-energy malnutrition. It can be also used to measure an individual to determine if he or she needs nutrition intervention or it can be used to measure many individuals to determine if malnutrition is a problem in a population. Some common anthropometric measurements include:

- ▶ Height or length
- ▶ Weight
- ▶ Mid-upper arm circumference (MUAC)
 - ▶ Demi-span or arm span
 - ▶ Knee height
 - ▶ Sitting height



The core elements of anthropometry are height, weight, body mass index (BMI), body circumferences (waist, hip, and limbs), and skinfold thickness.

These measurements are important because they represent diagnostic criteria for obesity, which significantly increases the risk for conditions such as cardiovascular disease, hypertension, diabetes mellitus, and many more.

BMI is another commonly employed index of nutritional status and used as a gauge of malnutrition in children and adults. BMI is useful to identify obesity and the severity of obesity. Anthropometric measurements are often also used as part of the evaluation of fitness in athletes.