

Health science

Study guide - unit 6 - Assessment of nutritional status

Nutritional assessment

Nutritional assessment methods allow medical professionals to assess a person's nutritional status.

They will interpret the results to understand the patient's health status and advise them on how to improve their diet and overall nutritional status.

An ideal nutritional status occurs when the intake of nutrients matches the nutritional requirements or needs of a person.

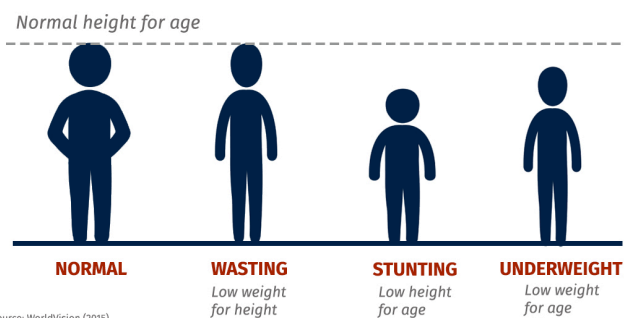
Malnutrition and Undernutrition



▪ **Malnutrition:** A physical condition in which people experience either nutrition deficiencies (undernutrition) or an excess of certain nutrients (overnutrition)

▪ **Undernutrition:** The physical condition resulting from deficiencies in one or several macro- and micronutrients. It impairs growth, pregnancy, lactation, physical work, cognitive function, and disease resistance and recovery

Different types of undernutrition



The purpose of nutritional assessment

- Identify people who are malnourished or at risk of malnourishment
- Identify issues or diseases that may be present
- Develop healthcare programmes to meet the needs of a community
- Measure the effectiveness of nutritional programmes and interventions once they are carried out

Nutritional assessment techniques

Anthropometric methods

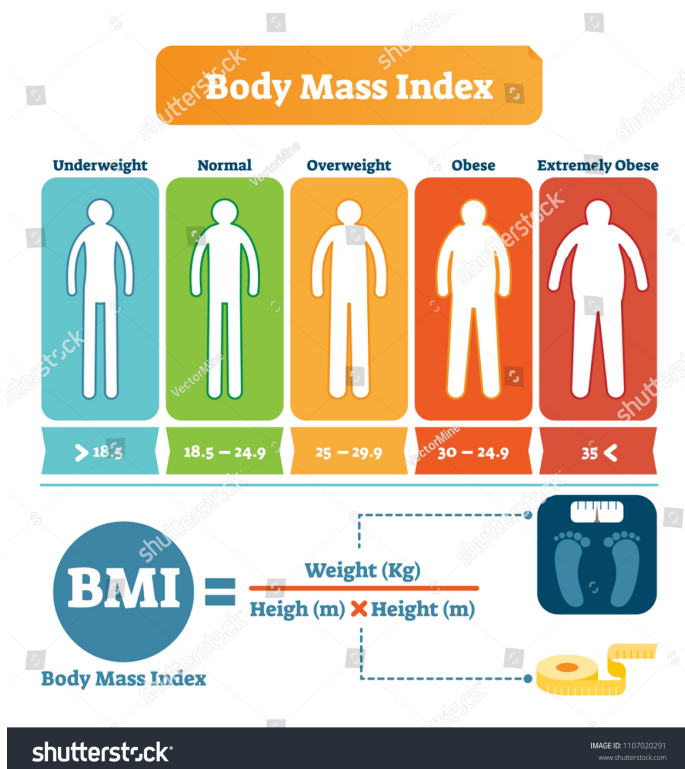
Biochemical methods (laboratory)

Clinical methods

Dietary assessment

Environmental factors



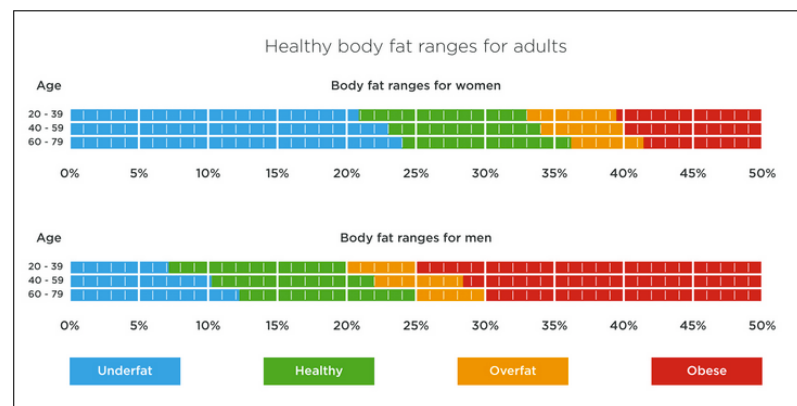


BMI is a measure of weight for height. It does not consider fat mass or muscle mass. A person could have a lot of muscle which would add to their weight and increase their BMI even though they have a healthy amount of fat.

Sometimes it is useful to use BMI with body fat percentage to assess health. A person could be overweight or obese according to their BMI, but their body fat percentage could be quite low. This happens a lot with sports players and athletes who have a lot of muscle.

Measuring body fat

Before you can calculate body fat percentage, you must first measure the amount of fat on the body.



DEXA scanner

This is an x-ray that shows an exact breakdown of fat mass, bone density and muscle mass

Skinfold thickness

Skin folds are areas of skin that can fold when pinched. Callipers are used to measure the skin at different parts of the body.

Bioelectrical impedance analysis (BIA)

Sends a weak electrical current through the body. The machine can tell when the current is travelling through fat

After you have measured the body fat, you can then calculate the body fat percentage. You need three things for this:

- Total body weight (TBW) in kilograms (kg)
- Body fat in kilograms (kg)
- Age

Formula: $\text{body fat} / \text{TBW} \times 100$

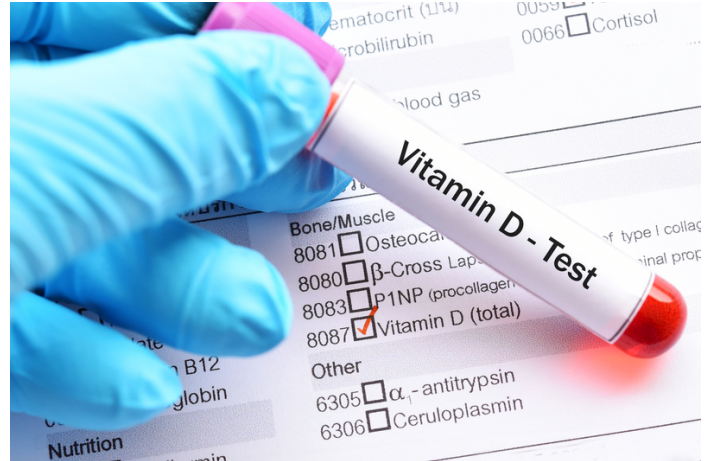
Biochemical methods

These are laboratory measurements of nutritional assessment. This involves testing samples of blood and urine. When your body digests food, chemicals and nutrients are released into your blood stream. These travel around your body and are either stored, used up as energy or exit through your urine.

The results

To have accurate results of the biochemical measurements, the laboratory specialist needs to know certain things about the patient who is being tested.

- Previous medical history
- Current medications
- A clinical examination report



Clinical methods

These are a physical examination. Medical professionals look for physical clues of nutrition related health problems on the body. These clues may be seen or felt in different parts of the body.

Tissues of the body that can show nutrient deficiencies include:

- Skin
- Eyes
- Gums
- Hair
- Nails
- Mouth



What is checked in a physical exam?

Medical professionals need to know the patients medical history when completing a physical exam.

The following things will be checked:

- Diarrhoea and other digestive issues
- Medications
- Previous or current medical conditions
- Physical appearance
- Signs of infection
- Nutritional supplement use

Dietary methods

This is where the patient must record their eating patterns or the food and drinks they consumed in a given period of time. This method relies on the honesty of the patient to accurately record the correct foods, the correct cooking methods and amounts eaten.



Recording dietary intakes

Three of the most common ways to measure dietary intake are:

- Twenty-four-hour dietary recall
- Three-day food diary
- Food frequency questionnaire

Environmental factors

Different environmental factors can have a significant impact on a person's nutritional status. This includes a person's access to healthy food, ability to cook healthy meals and cultural factors that may affect their food choice.



SOCIAL FACTORS

Socioeconomic status

This can impact a person's eating habits and food choice. If someone has limited income, they may not be able to spend much money on food. Healthier foods are generally more expensive than unhealthy foods. Where someone lives can impact their ability to cook meals.

Dietary restrictions

- Allergies and intolerances
- Cultural factors
- Vegan and vegetarian diet



In some countries food availability will depend on the weather and seasons.

There could be other reasons that food can't reach certain areas, such as war or natural disasters.