

OBESITY

In 2016, more than 1.9 billion adults, aged over 18 years, were recorded as overweight. Of these, 650 million were obese. Overweight or obese children under 5 years old were estimated about 41 million, while children and adolescents aged 5-19 years old were estimated over 340 million.

Overweight and obesity are defined as abnormal or excessive accumulation of fat that can lead to health problems. Obesity is one of the biggest health problems of modern societies. Worldwide, the average body weight and frequency of obesity is increasing dramatically. The main cause of obesity and overweight is the imbalance between the calories consumed by a person and calories spent in order to produce energy. This condition is due to a change in eating and lifestyle habits alongside a reduction in physical activity.

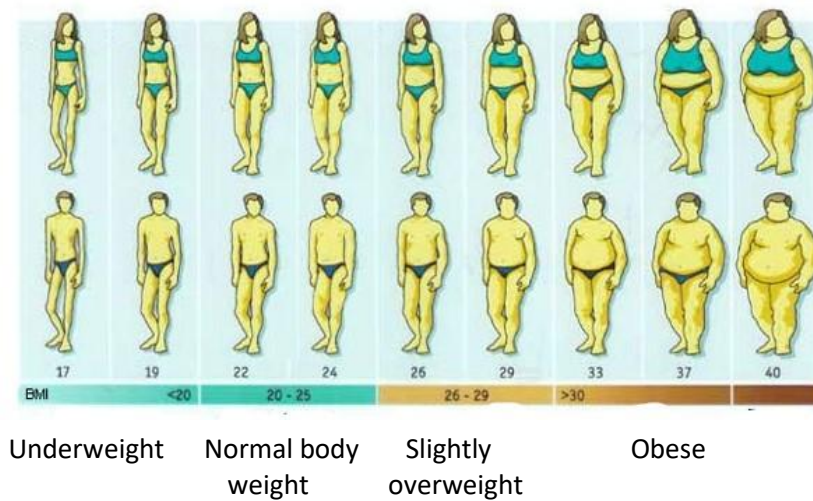
Obesity is treated as a chronic health condition which can be attributed to excessive increase in body fat. When fat is more than normal, it is stored in various body organs, such as the liver, muscles, heart, and produces hormones and substances that cause changes in body function.

Adult obesity is determined using Body Mass Index (BMI). It is calculated by the body weight, in kilograms, divided by the square of his/her body height in meters (kg/m^2).

$$\text{BMI} = \text{Weight} / \text{Height}^2$$

According to the World Health Organization (WHO), an adult is considered overweight when his/her BMI is equal to or higher than 25 and obese when his/her BMI is equal to or higher than 30 (Table 1)

Table 1. Classification of Adults based on BMI		
Classification	BMI kg/m^2	Morbidity risk
Underweight	< 18.5	Low (but there is a risk of developing other pathologic conditions)
Normal body weight	18.5 – 24.9	Moderate
Overweight	25.0 – 29.9	Ελαφρώς αυξημένος
Obese	> 30.0	
Grade I	30.0 - 34.9	Moderate serious
Grade II	35.0 - 39.9	Serious
Grade III	> 40	Very serious



Increase in obesity incidences is associated with an increased risk of type 2 diabetes mellitus, cardiovascular disease, sleep apnea and various forms of malignancies. For every 1 kg of weight gain above normal, the risk of developing type 2 diabetes mellitus is increased by 9%. Furthermore, obesity combined with diabetes can aggravate other medical conditions and make their management more difficult. When someone is obese he/she may have high levels of cholesterol and triglycerides and lower levels of "good" (HDL) cholesterol. HDL cholesterol is a mechanism that protects the human body by reducing vascular damage and conditions, such as cardiovascular and cerebrovascular disease. Therefore, the lower the level of HDL, the higher the risk of comorbidities.

Childhood obesity is associated with a higher risk of adult obesity, premature death and various disabilities during adulthood. Despite the increased risk, obese children experience breathing difficulties, increased risk of fractures, hypertension, and early signs of cardiovascular diseases, insulin resistance and psychological manifestations.

Preventing obesity and overweight is feasible, if the person itself and his/her environment help. Family and community environment play an important role in shaping habits such as healthy eating and exercise, thus preventing the risk of obesity. At an individual level, the person can:

- Reduce energy intake from total fatty acids and sugars
- Increase the consumption of fruits and vegetables, as well as pulses, whole grain cereals and nuts
- Exercise systematically (60 minutes a day for children and 150 minutes for adults)



<http://www.who.int/mediacentre/factsheets/fs311/en/>

<https://www.medicalnewstoday.com/info/obesity>

<https://www.nhs.uk/conditions/obesity/#defining-obesity>