

Chrono-nutrition

Chrono-nutrition is an emerging field of nutrition research that attempts to understand the impact of meal timings on human health. It is found that in addition to the quality and quantity of the food, meal timing is also critical for a healthy body. The effect of the eating patterns on cardiometabolic diseases has been explored by M. Garaulet & co-authors and they found that independent of energy intake and physical activity, the timing of the meals is also a factor that impacts weight gain. They published a research paper in 2014 with the title “Timing of food intake and obesity: a novel association” in the journal *Physiological Behaviour*. In 2015, Gad Asher and Paolo Corsi published a more detailed study entitled “Time for food: the intimate interplay between nutrition, metabolism, and the circadian clock”. Much more research has been done and efforts are on to find the detailed effects of chrono-nutrition on human health. The roots of chrono-nutrition are considered to be in traditional Indian and Chinese knowledge.



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Hypoxia



Credit: Towfiq Barbhuiya (Canva)

Hypoxia is a condition in which the tissues of the body starve of oxygen. It occurs due to interruption of normal respiration. In extreme condition, when oxygen is entirely absent, it is called ‘anoxia’. In medicine, there are four kinds of hypoxia:

- *Hypoxemic*: It is a condition when the oxygen pressure in the blood reaching human body tissues is so low that it is unable to saturate the haemoglobin present in the blood.
- *Anaemic*: In this condition, the amount of functional haemoglobin is too low such that the capacity of the blood to carry oxygen to the tissues is too low.
- *Stagnant*: In this condition, the flow of the blood to the tissues is reduced or not evenly distributed.
- *Histotoxic*: In this condition, the cells of the tissues are poisoned, thus they are not able to make proper use of oxygen.

In 2019, the Nobel Prize was awarded to three scientists – Sir Peter J. Ratcliffe, William G. Kaelin and Gregg L. Semenza – for their research work to discover how the cells sense and adapt to reduced oxygen levels.

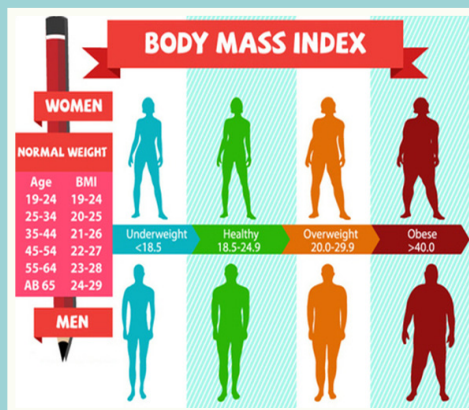
Antioxidants

Antioxidants are chemical compounds that help to protect our body against any damage caused by free radicals. Antioxidants neutralise the free radicals. The free radicals are generated in our body due to several factors such as smoking, air pollution and internal factors of the body. The free radicals are potential attackers that may harm the healthy cells. Human body generates its own antioxidants. Antioxidants can also be received from several vegetables and fruits high in antioxidants. However, there is no medical research to demonstrate that antioxidant supplements are helpful in prevention of particular diseases. The Vitamin C & E, Carotenoids (such as betacarotene, lycopene, lutein and zeaxanthin), etc. are a few examples of antioxidants.



Credit: <https://www.piqsels.com/>

Body Mass Index



Credit: Dr V-Amar (CCA-SA-4.0)

According to the US-Centre for Disease Control and Prevention, the Body Mass Index (BMI) is a number obtained by the person's weight in kilograms divided by square of his/her height in meters. People can be categorised in several weight categories such as underweight, healthy, overweight, obese and extremely obese according to this index. However, the BMI does not measure the body fatness or health of an individual. Yet, BMI appears to be strongly correlated with several adverse health outcomes consistent with the more direct measures of body fatness.

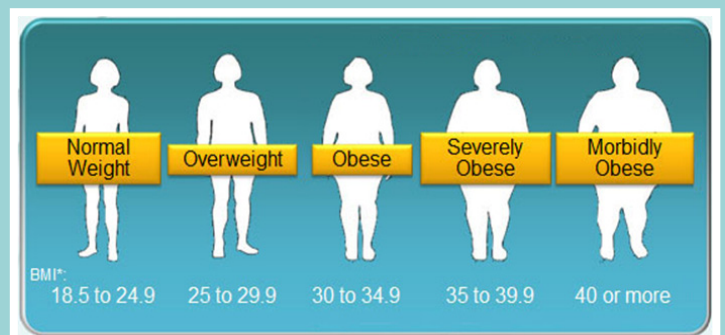
According to the US-Centre for Disease Control and Prevention, the screening range of BMI is as following:

- BMI less than 18.5: Underweight
- BMI is 18.5 to <25: Healthy

- BMI is 25.0 to <30: Overweight
- BMI is 30.0 or higher: Obese

Obesity is frequently subdivided into categories:

- Class 1: BMI of 30 to < 35
- Class 2: BMI of 35 to < 40
- Class 3 or severe obesity: BMI of 40 or higher



Credit: Thiruthonti (CCA-SA-4.0)