OBESITY

Overweight

A medical condition of excess body fat that can have a negative effect on health, leading to reduced life expectancy and other health problems.

Risk factor

About Obesity

In Western countries, people are considered obese when their body mass index (BMI) exceeds 30 kg/m², with the range 25-30 kg/m² defined as overweight. BMI is closely related to both percentage body fat and total body fat.

Obesity increases the likelihood of various diseases, such as heart disease, diabetes and cancer, sleep apnea, along with other illnesses such as joint problems or high blood pressure. There are several factors contributing towards obesity and interaction between these factors is very complex. Obesity is most commonly caused by a combination of excessive food energy intake, lack of physical activity, and genetic susceptibility, although a few cases are caused primarily by genes, endocrine disorders, medications, or psychiatric illness. Evidence to support the view that some obese people eat little yet gain weight due to a slow metabolism is limited. On average, obese people have a greater energy expenditure than their thin counterparts due to the energy required to maintain an increased body mass. Moreover, social, economic, environmental factors and behavioural factors are also contributing to obesity. For instance, sedentary lifestyle plays a significant role in obesity.

Symptoms
People are considered obese when their BMI is 30 or higher.

- Any BMI $\geq 35$ or $40 \text{ kg/m}^2$ is severe obesity.
- A BMI of $\geq 35 \text{ kg/m}^2$ and experiencing obesity-related health conditions or $40$–$44.9 \text{ kg/m}^2$ is morbid obesity.
- A BMI of $\geq 45$ or $50 \text{ kg/m}^2$ is super obesity.

Other symptoms are:
- Obstructive sleep apnea
- Obesity hypoventilation syndrome

**Associated diseases**

- heart disease
- type 2 diabetes
- high blood cholesterol
- sleep apnea
- certain types of cancer
- asthma
- stroke
- migraines
- osteoarthritis
- polycystic ovarian syndrome
- menstrual disorders
- infertility
- erectile dysfunction

Binge eating disorder can increase obesity risk. In general, it can reduce life expectancy, lead to social stigmatization and it is considered to be a leading preventable causes of death.

**Complications**

Complications are either directly caused by obesity or indirectly related through mechanisms sharing a common cause such as a poor diet or a sedentary lifestyle. The strength of the link between obesity and specific conditions varies.

- high blood pressure
- triglycerides and low HDL cholesterol
- heart disease
- stroke
- cancer including cancer of the uterus, cervix, endometrium, ovaries, breast, colon, rectum, esophagus, liver, gallbladder
- breathing disorders
- gynecological problems, such as infertility and irregular periods
- erectile dysfunction and sexual health issues
- osteoarthritis
Risk factors

- genetics
- family lifestyle
- unhealthy diet
- medications
- physical inactivity,
- stress
- age

Prevention

Traditionally, obesity prevention is aimed at behavioural changes and lifestyle modification at a personal level and it is still the case today, leading to widespread stigma directed at obese individuals even by health professionals. Much time, money, and effort is risked into believing that obesity is a matter of personal responsibility while crucial opportunities to make key environmental changes and have a greater impact on obesity prevention are missed. The situation is further exacerbated by different concepts of obesity prevention made available to the obese person through public health authorities, the food and marketing industry, and, lastly, the government. Obese individuals are unable to make healthy choices when they are wrongly influenced towards unhealthy ones. Concerns have also been raised over the use of BMI as an obesity indicator. Much bias may arise due to BMI variations arising as a result of ethnicity, age, sex, and differences in body build.

How it can affect fertility

Obesity leads to infertility in both men and women. This is primarily due to excess estrogen interfering with normal ovulation in women and altering spermatogenesis in men. It is believed to cause 6% of primary infertility. The most frequent anovulatory cycles are related to polycystic ovary syndrome (PCOS) occurrence, commonly associated with obesity and hormonal disturbances in the course of obesity. Obese women also have increased risk of preterm births and low birth weight infants. On top of that, women who are obese during pregnancy have a greater risk of having child malformations.

Obesity was also found to be associated with male infertility related to erectile dysfunction, hormonal disturbances and a reduction in sperm count and quality. The risk factors of male infertility include age, some chronic diseases, especially obesity and its related disorders as well as infectious diseases, use of some medications, environmental factors (lead, arsenic,
aniline dyes, ionizing radiation, electromagnetic fields, exposure), and lifestyle factors (high-fat and high-caloric diet, low physical activity, smoking, drinking and drug use, as well as tight and plastic clothing)

It is well known that obesity is associated with erectile dysfunction. The risk factors of erectile dysfunction include obesity grade, visceral obesity, low testosterone level, and physical inactivity.

Obesity-related hormonal disturbances are not restricted to androgen deficiency. It was suggested that decreased sex hormone-binding globulin (SHBG) and increased free testosterone levels in consequence favor testosterone to estradiol conversion in adipose tissue. Decreased testosterone-to-estradiol ratio contributes to impaired spermatogenesis and infertility development.

Both obesity and infertility are the important risk factors of psychological disturbances and poor quality of life among women and men in reproductive age. On the other hand, the mood disorders may exacerbate the hormonal disturbances and worsen the effectiveness of infertility management.

Multiple reproductive dysfunctions have been associated with obesity including anovulation, and infertility. Obese patients undergoing IVF or intracytoplasmic sperm injection (ICSI) treatment are known to have increased FSH requirement, fewer collected oocytes, and frequent cycle cancellation, lower pregnancy rate and increase miscarriage rate than their non-obese counterpart.

Prognosis

The main treatment for obesity consists of dieting and physical exercise. Diet programs may produce weight loss over the short term, but maintaining this weight loss is frequently difficult and often requires making exercise and a lower calorie diet a permanent part of an individual's lifestyle. Success rates of long-term weight loss maintenance with lifestyle changes are low, ranging from 2 to 20%. Dietary and lifestyle changes are effective in limiting excessive weight gain in pregnancy and improve outcomes for both the mother and the child.

One medication, orlistat (Alli; Xenical), is current widely available and approved for long term use. Weight loss however is modest with an average of 2.9 kg (6.4 lb) at 1 to 4 years and there is little information on how these drugs affect longer-term complications of obesity. Its use is associated with high rates of gastrointestinal side effects.
The most effective treatment for obesity is bariatric surgery. Surgery for severe obesity is associated with long-term weight loss and decreased overall mortality. One study found a weight loss of between 14% and 25% (depending on the type of procedure performed) at 10 years, and a 29% reduction in all cause mortality when compared to standard weight loss measures. However, due to its cost and the risk of complications, researchers are searching for other effective yet less invasive treatments.

Find more about related issues

Diagnoses

Antiphospholipid syndrome
A condition when immune system mistakenly attacks some of the standard proteins in blood.
Learn more at: www.fertilitypedia.org/therapy/diag/antiphospholipid-syndrome-do-rf

Azoospermia
Complete absence of sperm in the ejaculate of a man.
Learn more at: www.fertilitypedia.org/therapy/diag/azoospermia

Ejaculatory disorders
A class of sexual disorders defined as the subjective lack of normal ejaculation.
Learn more at: www.fertilitypedia.org/therapy/diag/ejaculatory-disorders

Endometrial cancer
Cancer that arises from the endometrium, the lining of the uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-cancer

Endometrial hyperplasia
Thickening of the lining of the uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-hyperplasia

Endometrial polyp
The finger like overgrowths attached to the inner wall of the uterus that extend into the uterine cavity which are made of endometrial tissue
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-polyp
**Erectile dysfunction**
The inability (that lasts more than 6 months) to develop or maintain an erection of the penis during sexual activity.
Learn more at: [www.fertilitypedia.org/therapy/diag/erectile-dysfunction](http://www.fertilitypedia.org/therapy/diag/erectile-dysfunction)

**Idiopathic male infertility**
A condition in which fertility impairment occurs spontaneously or due to an unknown cause.
Learn more at: [www.fertilitypedia.org/therapy/diag/idiopathic-male-infertility](http://www.fertilitypedia.org/therapy/diag/idiopathic-male-infertility)

**Menstrual cycle disorders**
An abnormal condition in a woman's menstrual cycle.
Learn more at: [www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders](http://www.fertilitypedia.org/therapy/diag/menstrual-cycle-disorders)

**Oligoasthenoteratozoospermia**
Male fertility diagnosis defined as a combination of low sperm concentration, reduced motility and abnormal sperm morphology in the ejaculate.
Learn more at: [www.fertilitypedia.org/therapy/diag/oligoasthenoteratozoospermia](http://www.fertilitypedia.org/therapy/diag/oligoasthenoteratozoospermia)

**Oligomenorrhea**
Light or infrequent menstrual flow at intervals of 39 days to 6 months or 5–7 cycles in a year.
Learn more at: [www.fertilitypedia.org/therapy/diag/oligomenorrhea](http://www.fertilitypedia.org/therapy/diag/oligomenorrhea)

**Polycystic ovary syndrome**
A condition in which a woman has an imbalance of female sex hormones. This may lead to changes in the menstrual cycle, cysts in the ovaries, trouble g
Learn more at: [www.fertilitypedia.org/therapy/diag/polycystic-ovary-syndrome](http://www.fertilitypedia.org/therapy/diag/polycystic-ovary-syndrome)

**Uterine fibroids**
The most common benign smooth muscle tumors of the uterus encountered in women of reproductive age.
Learn more at: [www.fertilitypedia.org/therapy/diag/uterine-fibroids](http://www.fertilitypedia.org/therapy/diag/uterine-fibroids)

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**Sources**

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