

Obesity

How do we define overweight and obesity?

- It is an abnormal or excessive increase in weight due to accumulation of fat that presents a risk to health. It is a chronic, relapsing progressive disease defined by excessive adiposity that may impair health. In India, those with a BMI between 23.0 and 24.9 kg/m² are said to be overweight and those having a BMI ≥ 25 kg/m² are said to be obese.

What is morbid obesity?

Morbid obesity exists when BMI is more than or equal to 35.

What are the causes of obesity?

Main causes of obesity are wrong choices of food (with high sugar & fat and/or fast food), excessive eating and lack of physical activity (sedentary life)

What are the factors responsible for rising obesity in India?

- The factors responsible are
 - a) Consumption of unhealthy diet with high refined carbohydrate and saturated fat content, that is high on calories and low on nutrients.
 - b) Easy access to readily available, processed and packed food.
 - c) Increasing trend of eating out, where oils used are refined and unhealthy.
 - d) Use of Genetically modified crops to increase production.

- e) Inadequate physical inactivity and
- f) Sedentary lifestyle.

What are the age related factors?

Seeds of obesity are laid during intrauterine period as well as early childhood. Mother's need to watch their dietary habits during pregnancy. Good dietary habits have to be instituted in children.

As age increases, there is a natural tendency to gain weight, especially in women around menopause. Therefore as age increases, food intake (content and amount) intake has to be monitored

Do overweight and obesity put us at risk of developing any disease?

- Obese individuals are at an increased risk of developing long-term health problems such as:
 - a) Type 2 diabetes,
 - b) Hypertension,
 - c) Heart disease,
 - d) Joint problems, such as arthritis, especially knees and lower back
 - e) Respiratory difficulty especially restrictive disease due to obesity and additional problems of obstructive sleep apnea due to snoring.
 - f) Additionally, they are more likely to experience mental health problems, including despair and poor self-esteem.
 - g) Obesity also increases risk for cancer.

h) Girl children are also at risk of developing precocious puberty and polycystic ovarian syndrome (PCOS) can develop in the long run which is an important cause of infertility.

How socioeconomic conditions affect obesity?

Socioeconomic Conditions do have a profound impact on obesity. Poor socioeconomic Conditions make access to healthy food difficult.

Further, poor people are prone to eat more when ever there is access to food (because of persistent shortage of healthy, nutritious food)

However, certain things if kept in mind, will help people belonging to poor socioeconomic Conditions to overcome this handicap. Eating slowly (chewing every morsel 15-30 times) will help prevent development of obesity

How physical activity and obesity are related to each other?

Physical Activity and Obesity are closely related to each other and also part of a vicious cycle. Lack of adequate physical activity is a major contributor to obesity. Vice versa, increased weight (obesity) makes physical activity increasingly difficult. Lack of physical activity leads to physical deconditioning and related health problems such as breathlessness, high blood pressure, NAFLD, Diabetes and Joint Problems

What is the relationship between sleep and obesity ?

There is a close association between obesity and sleep. Obesity makes a patient prone to obstructive sleep apnea and snoring. This can lead to respiratory problems, thereby decreasing physical activity, contributing to further weight gain.

In addition, obese people tend to have a low self esteem, can have psychological problems, that can not only affect sleep but can also result in eating disorders that can further worsen obesity.

How does stress contribute to obesity?

Stress can cause episodes of binge eating that can cause and/or worsen obesity. Obesity can worsen psychological problems such as stress, and it can become a vicious cycle.

How do cultural factors influence the development or prevention of obesity ?

Since development of diabetes is intimately related to dietary habits, cultural factors are likely to influence development of diabetes. Societies which have high intake of cereals and direct sugars are more likely to manifest obesity and metabolic disorders including diabetes.

Secondly, the cultural practices also influence control of diabetes due to prevailing dietary practices.

What is the relationship between obesity and chronic diseases?

Obesity predisposes an individual to all chronic diseases especially

a) Metabolic diseases like diabetes & hypertension

- b) All forms of Cancer
- c) Bone and Joint problems especially back, and lower limb arthritis.
- d) Death from infectious disease

What is the effect of environmental factors on weight?

Some environmental factors do influence weight. Areas that have extreme weather conditions or long durations of days and/or night (as near poles) make people prone to psychiatric problems and eating disorders resulting in obesity.

How are different hormones related to weight?

Hormones do influence development of obesity. Insulin causes increase in appetite resulting in obesity. Adrenal hormones also result in an increase in appetite, thereby causing obesity. Weight gain can also be a clinical manifestation of hypothyroidism, because of excessive deposition of myxomatous tissue.

What is food addiction, emotional/ stress eating?

Emotion and stress is strongly related to eating disorders that lead to binge eating which strongly influences obesity.

Is stress eating the same as binge eating?

Stress eating is not synonymous with binge eating. Although, both binge eating and stress eating are associated with different personality traits, they can coexist together as well.

Is obesity genetic/hereditary? How does genetics affect our weight?

Obesity can be genetic and/or hereditary as well as acquired. Genetic and/or hereditary influence is always multifactorial. Even acquired obesity could become genetic over generations

How do family dynamics affect weight?

Family dynamics directly influence the development of obesity. Eating habits of a family (in terms of use of fat or fried food and/or eating out frequently) do influence gain in weight. In such families, at times management of obesity requires modification of diet for the entire family.

What is relationship between mental health and weight ?

People who are obese can have lot of mental health issues related to their own negativity towards their body image. This can lead to episodes of depression, which can be complicated by binge eating as discussed earlier. This leads to a vicious cycle of weight gain.

Relationship between social media /peer pressure and weight ?

Social Media and Peer pressures regarding certain variety of food may influence incorrect food selection, that can result in abnormal weight gain and obesity.

What is the effect of alcohol and smoking on weight ?

Alcohol itself leads to excessive calorie consumption. Associated with is consumption of high calories fried or non-vegetarian snacks, which can result in obesity.

Smoking suppresses the appetite of an individual. The moment a person leaves smoking, it can lead to excessive eating and weight gain. Therefore smokers have to be careful about weight gain and obesity as they leave smoking.

Do any medical conditions cause weight gain?

Few Medical Conditions are associated with weight gain. They can be broadly classified into three types:

- a. Diseases which restrict movement, exercise and active lifestyle. Severe heart and lung disease, chronic kidney and liver disease and serious CNS disease.
- b. Endocrine/Hormonal diseases mainly Cushing's syndrome and Myxedema
- c. Could be related to intake of drugs, such as steroids, some antidepressants and anti-psychotic drugs.

What is craving? What is the difference between hunger and craving ?

Craving is the need to have a certain type of food. It is not related to appetite. Such craving can occur in adolescents and can lead to obesity.

Can children be affected by obesity?

Nowadays, children are increasingly getting affected by obesity. This is related, primarily to two reasons. Tendency to eat fast and processed food and decreased physical activity

What are the long term effects of childhood obesity ?

Long term effects of childhood obesity can be devastating. These include:

- a) Early onset of NCDs such as hypertension and type 2 diabetes.
- b) Mental health issues due to body image issues at the onset of adolescence.
- c) PCOD in Adolescence Girls

What are the effects of increases weight (overweight to morbid obesity) on health?

Effects of Morbid Obesity on health are profound. The ill effects of obesity are multiplied manifold. To enumerate again, they include:

- a. Inactive life leading to deconditioning which further increases weight gain.
- b. NCDs such as diabetes and hypertension
- c. Bone and Joint Problems, specially arthritis involving lower limbs
- d. Breathing disorders such as Sleep apnea and central hypoventilation causing respiratory failure.
- e. Psychiatric problems such as depression.

Does obesity affect fertility ?

Obesity can negatively affect both male and female fertility. In females, this happens in relation to PCOD. In males, development of diabetes can lead to autonomic neuropathy causing erectile dysfunction

How does obesity affect pregnancy? And vice versa?

Pregnancy leads to weight gain. Some of the women fail to come back to their pre-pregnancy weight gain.

Vice Versa obese women who become pregnant have a higher chance of developing hypertension, diabetes and toxemia of pregnancy.

Labor as well as Cesarean section can be difficult for pregnant women.

What is the effect of obesity on cognitive function ?

Per se obesity has no direct effect on cognitive function, but associated mental illness can affect cognitive functions. Also there can be cognitive problems related to early onset dementia.

Can any person be obese and still be healthy ?

It is very unlikely that an obese person can be absolutely healthy.

What is the significance if waist circumference in obesity ?

Waist circumference is also a measure of obesity. Increased waist to hip ratio is also perceived to have similar effects as an increase in weight. Waist hip ratio of > 0.9 in males and > 0.85 in females carries an increase in obesity related disease risk.

Can obesity be reversed?

Obesity can be reversed by changing life style in terms of increasing physical activity and changing dietary habits such as

- a) Stopping direct sugars
- b) Decreasing intake of Carbohydrate & Fat in diet
- c) Eating slowly

Can obesity be reversed?

Obesity can be reversed by changing life style in terms of increasing physical activity and changing dietary habits such as

- a) Stopping direct sugars
- b) Decreasing intake of Carbohydrate & Fat in diet
- c) Eating slowly

How is obesity treated?

Obesity is best treated by changes in lifestyle as mentioned above. Although drugs and surgical procedures have been used to treat morbid obesity, they are not advisable.

What are the health risks associated with obesity?

Health risks associated with obesity include:

- a) Diseases such as diabetes and hypertension
- b) Atherosclerosis and heart disease
- c) Sudden Cardiac deaths due to heart attacks and pulmonary embolism
- d) Snoring and Sleep related disorders such as Sleep apnea
- e) Restrictive lung disease
- f) NAFLD

- g) Bone and Joint disease specially arthritis of lower limbs
- h) Mental disorders
- i) Incidence of Cancers

How to prevent obesity?

Obesity can be prevented by a healthy life style related to dietary habits, physical activity in a disciplined and regular manner.

Any specific diet more effective for prevention and treatment of obesity?

Diet low on direct sugars, simple refined carbohydrate and hydrogenated vegetable oils will prevent development of obesity. Also eating slowly goes a long way in preventing obesity. Seeds for obesity are laid in childhood. Therefore good dietary habits should be inculcated from childhood.

What are dietary recommendations for treatment and prevention of obesity?

As mentioned above.

What type and amount of exercise is recommended for treatment of obesity?

Only aerobic exercise is recommended for obese people. Walking and mild yogic exercises under supervision may be the only recommended exercise in the initial stages. As weight comes down exercise can become more vigorous.

Does definition of obesity consider the weight only? Any other indicators/parameters? Are the types and/or parameters different for men and women? What is difference between obesity in men and women?

BMI is the most accepted measure of obesity. BMI is calculated by dividing weight in Kg by square of height in metres. A BMI of 26 or more is considered to be obesity in Indians. Similarly waist more than 90 cm in men and 80 cm in women is considered as obesity. Waist Hip Ratio has already been mentioned previously.

Importance of hydration in weight management

It is very important to take adequate amount of water (fluids) during processes of weight reduction, as water makes up for 55-60% of human body (60 in males & 55 in females). Loss of water can result in tiredness and exhaustion.

How can food marketing affect the weight management of consumers?

Good Marketing and advertising can influence food intake, as marketers may only highlight positive health effects of food. One such marketing gimmick is 'no added sugar' while such products may contain up to 10% sugar. Therefore one must read food labels carefully and not take food only on marketing information

Are there any public policies related to prevention of obesity?

The only public policies related to prevention of obesity are:

- a. Necessity to display nutritional information on all food items by FSSAI.
- b. Availability of YOGA & advice for health promotion at Arogya Mandirs.

Importance of breakfast in weight management

Every individual should decide his own requirement for breakfast. Traditionally, Indians never believed in an early breakfast. Being primarily an agricultural country, first meal of a farmer was at 10-11 AM. Later a concept originated from the west stating 'Breakfast like a King'. But it is best to give a 12-16 hour gap after the last meal of the day. Timings of both could be decided by an individual himself based on his work profile.

What is intermittent fasting?

The concept of a 16 hour gap after the last meal of the day has been termed as intermittent fasting

Type of diet and eating timings for weight management.

Type of diet can be decided individually by any individual based on local food available and traditions but should be low on direct sugars, refined and simple carbohydrates (especially Maida), processed & packaged food, and soft drinks.

Any healthy snacking tips?

Although, snacking is never healthy, if someone needs to snack, fresh fruit, dry fruit, salads, roasted grams & cereals without fat could be the preferred option.

Tips for grocery shopping for weight management

While grocery shopping, one must remember to read complete food labels before buying. Also it is best to avoid processed and preserved food that are likely to have a high content of sugar, salt as well as fat (mostly palm oil).

Cooking methods/ modifications to prevent /treat obesity

Cooking methods are important for management of obesity. Cooking methods which use minimum fat but are quick, are best to preserve nutritive value and natural taste of food. Generally steaming or light roasting without oil is the best. If one has to fry, deep frying is preferred over shallow frying.

Importance of portion size in weight management

Small portion sizes and slow eating (chewing 15-30 times with every bite) are extremely important for management of diabetes.

Any behavioural strategies to follow for weight management?

The most important behavioral strategy for weight management is regularity in meal timings and content. Also, it is best to avoid eating out (specially fast and preserved food).

There are different weight reduction programmes? Are they effective? How to decide which one to follow?

Best weight reduction programs are those which provide for a slow weight reduction over 1 year or so. A reduction aim of 1 Kg per month is most realistic. At the same time one should not feel energy less while pursuing weight loss. Programs/diets that offer drastic reduction are best avoided.

How to follow healthy eating while dining out, in social gatherings, etc?

It is difficult to decide healthy eating while dining out, because of uncertainty regarding content of fat in cooked food and hygiene in case of uncooked food like fruits, sprouts and salad.

Is the weight management strategy same in children and adults? If no, what is the difference?

Weight management strategies in adults and children are essentially same with two differences

- a. A child may find it difficult to follow discipline and adult can because of increased activity and basic nature of childhood.

- b. In growing children too much restriction may compromise on essential dietary requirement for growth and development.

How does gut health affect weight? What is role of probiotics?

Gut health (more importantly preservation of gut flora) is vital to weight management. This should be done naturally by intake of curd and naturally fermented food and avoid drugs likely to affect stomach acid. Also chewing slowly helps preserve the gut health.

What is keto diet? Is it advisable for all?

Keto diet is a diet rich in fat and proteins with near zero carbohydrate, it produces a state of ketosis, that can theoretically affect drastic weight loss. But such special diets are potentially harmful in the long run and best avoided.

Does Yoga and meditation help as active physical exercise in managing / reducing weight?

Yes, Yoga and meditation are important. They help in stabilizing one's mind so as to reduce stress and eating problems that accompany such stress.

What is liposuction? What is bariatric surgery? How useful are these modalities in short and long term?

Liposuction is a procedure that is used to suck out subcutaneous fat from areas with excessive deposition. Bariatric surgery is a surgery that artificially reduces the size of stomach to decrease requirement of food. Both the procedures may have a dramatic effect initially but carry the risks that can be associated with any surgery. They should be avoided unless a person is morbidly obese

How to help craving, binge eating, night time eating, etc?

Regular food timing, proper chewing of food, slow eating over 20-30 minutes and meditation are some of the strategies that will help take care of craving and binge eating. Night time eating is best avoided by changing strategy to early sleeping and early morning rise.

What are distorted eating patterns?

Distorted eating patterns are those which are not normal. Binge eating and/or night time eating and eating frequently between meals are some examples

Like overweight has adverse effects on health, does the same apply to underweight? How?

The concept of overweight and underweight is to be understood in terms of bony framework. For the same age normal weight ranges from a lower limit for small (lean) bony structure to upper limit for a large (stout) bony structure. This is not fully captured even by the BMI. Therefore additional parameters like Waist Hip Ratio are

used. Per se being underweight or malnourishment is a concept of childhood, poorly studied in adults.

How to promote healthy lifestyle at workplace?

Healthy life style can be easily promoted at work place as well. Simple things like taking stairs instead of a lift while going up and down or taking a short walk every one to two hours or simple rotational exercises of shoulders even at work to mention a few. To avoid unnecessary intake of sweetened or caffeine containing beverages and snacks at meetings.

How to incorporate physical activity in busy office hours/ work schedule?

Has been mentioned above. In addition, use of public transport to get to work will also incorporate walking.

Effect of technology and weight on each other?

Technology, that has made life easy has created physical inactivity. Availability of lift, escalators and walkalators is a case in point. Technology while easing life, also makes people lazy

Importance of regular health checkups in weight management?

One can monitor ones weight him/herself. Even without weighing machines tightening of clothes around waist and arms could be a good indicator. While medical check ups will help diagnose life

style related diseases, they wouldn't help in weight management per se.

Do the lifestyle diseases reverse after weight reduction once they develop ?

Lifestyle diseases, both diabetes and hypertension, can both reverse with proper lifestyle and weight management if dietary discipline can be maintained over a period of 1-2 years initially. Thereafter this discipline can become a part of life.

How to measure the progress of obesity management?

Obesity management as mentioned earlier is best done with monthly measurements with an aim of reducing 1-2 Kg every month. This kind of weight loss is sustainable.

Once achieved , how to maintain the ideal weight for long term?

As mentioned above initial lifestyle discipline for 1-2 years is difficult to maintain, thereafter it sustains as the beneficial effects of weight reduction become evident

How can I prevent my child from becoming overweight and obese?

- Encourage your child to stay away from screens (mobiles, tablets, computers and television) and play outdoors

- Discourage them from instant, processed food and unhealthy snacks.
- Encourage eating freshly prepared food at home.
- Encourage your child to sit with the family, and eat his/her food slowly over 20-30 minutes, chewing every morsel 15-30 times before swallowing.
- Discouraging eating in front of television and/or any other type of screens.
- Discuss with them importance of fruits & vegetables, pack at least one fruit in their lunch-box-tiffin.
- Develop innovative ways to increase vegetable intake by adding them to rice, chapati flour, Khichdi (eaten in all parts of the country) to give a few examples.
- Discourage too much use of sweets, confectionary, bakery products, bread, chocolates, and packed sugar containing drinks (Nearly all commercially available drinks have a sugar content that may range from 5 – 25 per cent).
- Best is to lead by example. Do what you expect your child to do.

What is considered a healthy diet?

- Quite a few of the things have discussed in the previous question as well. Generally, a healthy meal must include
 - a) Adequate quantity of vegetables,
 - b) Adequate whole grains
 - c) Pulses and/or beans
 - d) A modest portions of nuts (even groundnuts would do) or seeds

e) A selection of fruits

f) Plain fermented yogurt or curd.