

OBESITY

Definition- The term obesity means "Stout or Plump". Increase in body weight of more than 10-20% above the normal, caused by excess fat accumulation is termed as Obesity. It is regarded as the **Pandemic** with causing disaster to health.

BMI – Its is a most important indicator of Obesity along with Weight. Although there is regional and age variation

Calculated by **Weight in Kg/ Height in meter square.**

Underweight - $> 18.5 \text{ Kg / m}^2$

Normal – $18.5 - 24.9 \text{ Kg / m}^2$

Overweight – $25 - 29.9 \text{ Kg / m}^2$

Obese- $30 \text{ or greater Kg / m}^2$

Body fat distribution

- It is measured by Waist and Hip circumference.
- Waist is measured with overnight fasting at between the midpoint of the lower costal margin and iliac crest. Hip is the widest part of the gluteal region. Waist to hip ratio of above 1.0 in men, 0.9 in women is a major risk factor for metabolic syndrome (X - Angles Have healthy lifestyles- Abdominal obesity, Hyperglycaemia, Hypertension, Lipid (Increased LDL, Decreased HDL) and Cardiovascular Diseases and Stroke.
- It is important to know the Distribution of Fat than the absolute amount of excess adipose tissue.

Two Types

- 1) Increased Intrabdominal fat – **Android or apple or visceral or abdominal** is located inside the **abdominal cavity**, packed between the organs (stomach, liver, intestines, kidneys, etc.).
Adipocytes which secretes adipokines(Tnf alpha) directly drains into the liver through portal vein and induce insulin resistance(Type 2 Diabetes)
- 2) Subcutaneous Fat – **Gynoid or Pear shaped** is found just below the skin in a region called the **hypodermis**

Etiology

1) Excess Intake of Food in relation to individuals' physiological requirements

An Increase in intake of 0.5% of calorie intake than the normal needed can rise to annual rise of 1 kg of body weight.

Anxiety and Depression may both lead to increased intake of food

Training in Childhood and Social factors may play a role

Snacking and skipping of regular meals.

2) Physical Activity

Increased Automation, Car ownership, Lifts, Time spent on computers

Decrease Manual labours, Sports in schools, Walking in school or work

3) Genetic Factors

Some body burn more fat than the other and vice versa

Leptins- Important Gene in the adipose tissue which is responsible for reduction of food intake is lost causing hyperphagia and Obesity

Ghrelin- Hormone from stomach and duodenum which increases before meals and decreases after meals in lost

4) Alcohols Is a non- diet calorie which aggravates obesity, Quitting Smoking can regain appetite and gain weight

5) Reversible Causes of Obesity

1) **Endocrine**- Hypothyroidism, Cushing Syndrome, Insulinoma, Hypothalamic injury, Pregnancy and Contraceptive Pills

2) **Drugs** – Antipsychotics, Antidepressants, Beta blockers, Glucocorticoids

Clinical Features

History

A full history must include a dietary inventory and an analysis of the patient's activity level. Screening questions to exclude severe or untreated depression are vital because depression may be a consequence or a cause of excessive dietary intake and reduced activity.

The possibility of bingeing, purging, lack of satiety, food-seeking behaviour, night-eating syndrome, and other abnormal feeding habits.

When taking the history, the clinician should investigate whether other members of the patient's family have weight problems, inquire about the patient's expectations, and estimate the patient's level of motivation.

Ill effects from Increased Weight- Slowness of movements, Proneness to fall and accidents, OA of weight bearing Joints

Skin- Frequent fungal , bacterial infections, Striae may develop

Cardiovascular – Hypertension is due to cardiac output and heart rate, Atherosclerosis, Ischemic heart disease, Endothelial dysfunction

Respiratory – Exertional Dyspnoea , reduction in vital capacity due to decrease in diaphragmatic movements . **Pickwickian Syndrome-** Obesity associated with central depression of Respiration and Somnolence

Abdomen – Anterior Abdominal wall hangs down like a fold (Abdominal Apron)

GERD, Gallstones, Hernia, Non alcoholic fatty liver disease, Colon Cancer

Endocrine- Metabolic Syndrome, Pcod, Menstrual Irregularities, CA of breast, endometrium, prostate etc

Psychology – Depression, Unattractive physical appearance

Diagnosis

Measurement of Skin fold thickness, Waist to hip ratio, BMI

DEXA (Dual Energy Xray absorptiometry) gives an image of adipose tissues

Thyroid profile, Lipid profile, GTT

Management

Avoid a sedentary life. Regular and moderate exercises daily, even for ten minutes will go a long way

Avoid a high fatty diet like cakes, biscuits, candies, chocolates, butter, cheese and sugar. Avoid fried and oily food Do not over-eat. Instead eat frequent small meals, rather than infrequent large meals with unhealthy snacks in between. Eat 3 to 4 moderate meals a day with your main meal in the middle of the day.

Eat slowly. Not only will your meal last longer but it will also feel more substantial. Avoid smoking and alcohol as it predisposes a person towards obesity.