Obesity

- ***OBJECTIVES AND INTENDED OUTCOMES***

By the end of this lesson the learner is expected to:

- Define obesity
- Describe health consequences of obesity
- Explain strategies to reduce obesity
- Explain how to reduce consequences of obesity
- Explain strategies to promote health

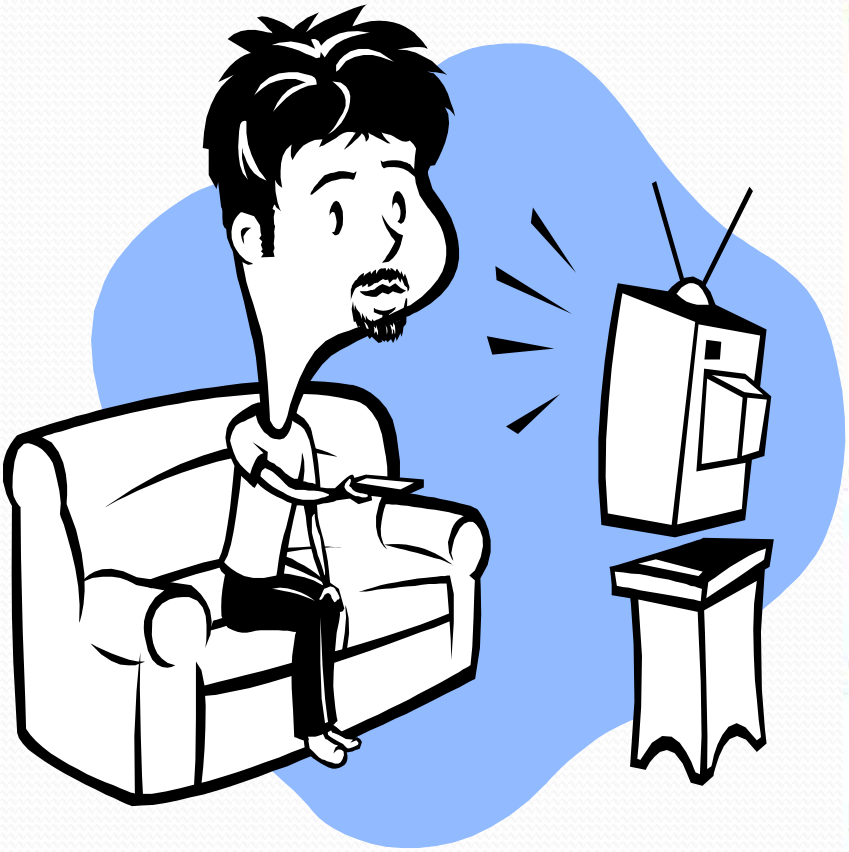
Obesity

it is a nutritional disorder as result of uncontrolled energy balance leading to increase store of energy mainly as fat depose as consequence of taking more calorie than the expended in activities or is the behavioral disorder due to a habitual or eating .

Causes of obesity

- Too much food intake
- Insufficient energy output
  - Not enough exercise
  - Low resting metabolic rate
- Genetic predisposition- lacking of lipten(gene-protein hormone involved in regulation of energy expenditure and control of appetite) → increase appetite and over eating
- Endocrine disorder: eg hypothyroidism, Cushing syndrome
- Environment favoring weight gain (over eating , inactivity, socio economic status).
- Psychological stressors
- Age and six

Causes of Obesity





Obesity is associated with increased risk of co-morbid conditions:

- Hypertension
- Dyslipidemia
- Diabetes mellitus
- Gallbladder dz.
- Sleep apnea
- Osteoarthritis
- Coronary artery dz.
- Cancers: Colon, Breast, Prostate ,Uterus ,Cervix
- OVERALL MORTALITY HIGHER!

- Infertility
- Pregnancy- difficult delivery

BMI and Health

Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight Monitor for risk
30.0 and Above	Obese Increased health risk
40.0 and above	Severely obese Major health risk

Assessment Factors For Metabolic Syndrome

- Weight/BMI
- Waist Circumference: Men>40 inches, Women>35 inches
- Blood pressure: >130/85mm Hg
- Fasting glucose: >110 mg/dL
- Triglycerides: >150mg/dL

  HDL: Men <40mg,dL; Women <50 mg/dL
- Any 3 of the above = Metabolic Syndrome
- Other risks: Cigarette smoking, Age, Gender, Family History

Assessment of obesity ;-

- Anthropometric measurement
- Wt/ht:

•Generals guide for estimation of stander Wt /Ht

***male→ for the first 150 cm → 47.7kg +2.7kg /2.5 cm ±4.5Kg**

***female → for the first 150cm → 45 kg +2.25kg /2.5cm ±4.5K**

- Mid Arm Circumference (MAC)
- Skin fold thickness
- Waist / hip ratio: healthy waist /hip ratio
  >0.8) in women
  >0.9in men
  - Waist circumference:(the smallest circumferences below the last rip and above the navel)
  - healthy Waist circumference:
    >35 inches (88 cm) in women
    >40 inches (102 cm) in men
- **Body mass index**

  BMI= Wt(Kgs)/Ht(m^2)
- Bioelectric impedence
- Infrared interactance
- Underwater weighing
- Isotope distribution
- CT
- MRI

Body Fat Distribution: Android

- Upper-body obesity--apple shape
- Associated with more heart disease, HTN, Type II Diabetes
- Abdominal fat is released right into the liver
- Encouraged by testosterone and excessive alcohol intake
- Defined as waist measurement of > 40” for men and >35” for women

Body Fat Distribution: Gynecoid

- Lower-body obesity--Pear shape
- Encouraged by estrogen and progesterone
- Less health risk than upper-body obesity
- After menopause, upper-body obesity appears

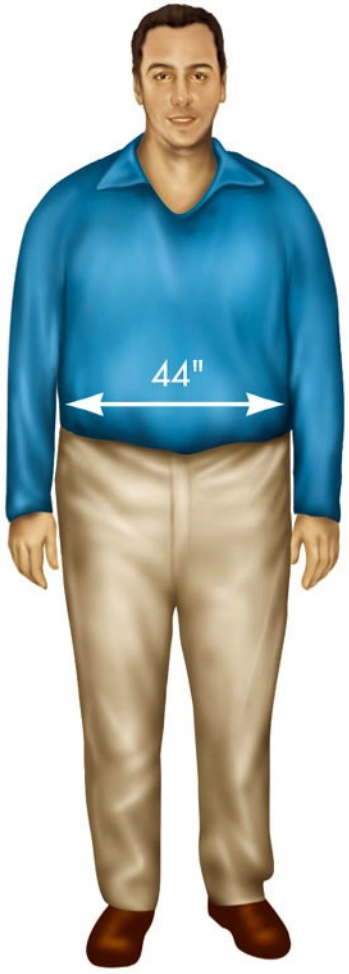
Body Fat Distribution

Pear shape

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Lower-body obesity



Upper-body obesity

apple shape

Obesity treatment

- Goals of treatment
- Prevention
- Diet
- Exercise
- Behavior modification
- Drug Therapy
- Gastric surgery

Weight Management

- Balancing energy intake and energy expenditure is the basis of weight management throughout life



Objectives of treatment :-

1.energy intake reduction to reduce the Wt to the ideal Wt (healthy Wt)

2.to maintaining healthy WT

Important points that should know by the Pt before reduction of wt regime :-

- The causes of obesity ,the important of wt reduction & successful wt reduction depend on the Pt
- Avoid of miss leading information about wt reduction
- There is no sliming food
- Dietary history of the Pt ,food intake record 3-7days
- Anthropometric measurement .(wt /ht ,waist /hip ratio /arm ,skin fat thickness ,body mass index)
- Medical checkup
- Laboratory investigation (Hb ,blood cholesterol ,blood glucose)

Principle of dietary management :-

Energy balance(energy plan)

1.Decreased caloric intake

- 500 - 1000 kcal/day less than usual
  - Lose 1-2 lbs/week(500-1000g/week)
- Women: 1000 - 1200 kcal/day total diet
- Men: 1200 - 1500 kcal/day total diet

National Heart, Lung, and Blood Institute. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: the evidence report. 1998.

Weight Loss Calculations

1 **pound of fat = 3500 calories**

Maximum weight loss should be no more than 1-2 pounds per week:

500 calories/day x 7 days/week = 3500 calories/week (1 pound)

1000 calories/day x 7 days/week = 7000 calories/week (2 pounds)

ESTIMATING ENERGY REQUIREMENT

1-HARRIS BENEDICT EQUATION

2-QUCIK METHOD

Activity Level	Over weight reduction	Normal weight	Underweight
Sedentary activity	20-25 kcal/kg body weight	30 kcal/kg body wt	35 kcal/kg body wt
Moderate activity		35 kcal/kg body wt	40 kcal/kg body wt
Heavy		40 kcal/kg	45 kcal/kg

2-Nutrients balance :-

- **Protein** : 20 -25% of total energy need or 0.8 _1g /kg /day ,protein of high biological value .
- CHO :45 -55 % total energy need From complex CHO, avoid simple sugar .minimum CHO intake 100g/day (for the brain and RBcs)

3.fat :25 -30 of the total energy need with stress on the plant fat

- high intake of dietary fibers

General advices :-

- Avoids omission of meals .
- Avoid fried food .
- more intake boiled and grilled foods
- Avoid butter full cream milk ,sugar ,sweets ,nuts ,soft drinks ,fatty meat ,dry fruits , pudding .
- Daily intake of one cup of milk (300 ml)
- Intake a cup of water or vegetable salad before meals
- Regular physical exercise at least walking 150m /week reduce wt by 500 -1000 kg /week .

2. Increased exercise

- Exercise regularly
  - Need to gradually work up to this
  - Start with brisk walking 10-45 min, 3-5 days/week
  - Work up to 60-80 min, most or all days/week
  - Aim to expend 1,000 - 2,000 kcal/week

NHLBI, ACSM

3. Behavioral Modification

- Self-monitoring
- Stimulus control
- Body image and self-esteem counseling
- Stress management
- Social support

Self-monitoring

- One of the MOST HELPFUL TOOLS IN OBESITY MANAGEMENT
- Observation and recording of behaviors
  - Total calorie intake, fat grams consumed, food groups used, situations that promote overeating, amount/intensity of exercise, weight, body composition, etc.
- Provides patient objective feedback so improvements can be made

Social support

- Those with it have more success
- Friends
- Family
- Community-based groups
  - Health clubs, education courses, Weight Watchers
- Church-related activities

Behavior modification :-

*advices help in encourage behavior modification

1.put the food in small dishes

2.slowlly and carefully chewing the food

3.leave the table food immediately after eating

4.avoid food shopping with hanger

5.store in the far away place