# Approach to Obese Patient

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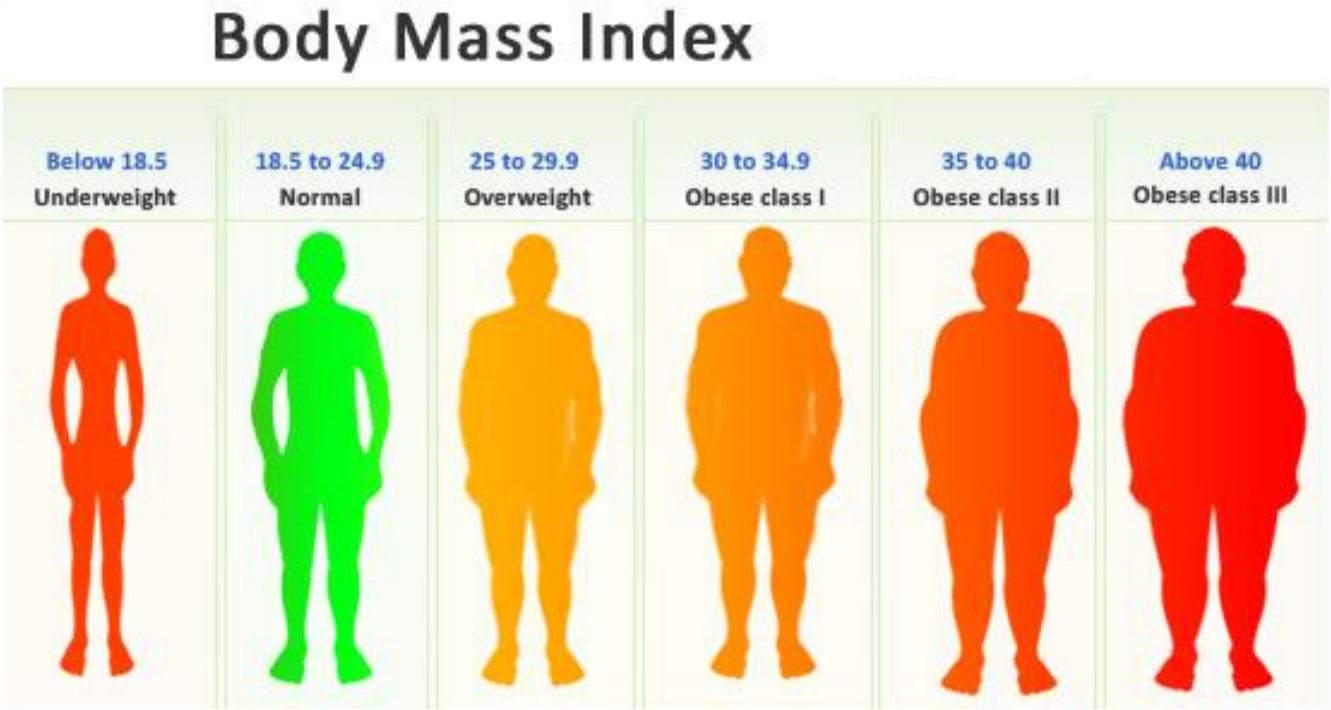
# Role play

# What is Obesity?Is it the same as being overweight?

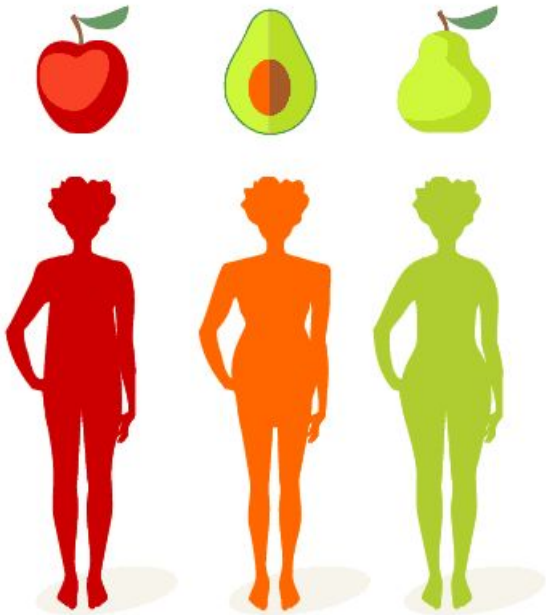
- Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health.
- Worldwide obesity has nearly tripled since 1975.
- Obesity is preventable

But how can we say that this person is obese or overweight?

# Body Mass Index:




# Waist-hip ratio:



| WOMEN | HEALTH RISK | BODY SHAPE |
|---|---|---|
| 0.80 or below | Low | Pear |
| 0.81 to 0.85 | Moderate | Avocado |
| 0.85+ | High | Apple |

| MEN | HEALTH RISK | BODY SHAPE |
|---|---|---|
| 0.95 or below | Low | Pear |
| 0.96 to 1.0 | Moderate | Avocado |
| 1.0+ | High | Apple |

# Waist circumference:

| | Men | Women |
|---|---|---|
| Normal | 78-94cm | 64-80cm |
| Overweight (Elevated Risk) | 94-102cm | 80-88cm |
| Obese (High Risk) | >102cm | >88cm |

# What is the Prevalence of obesity in Saudi arabia?

- 2014 NATIONALLY (10,735) MALE 24.1% AND FEMALE 33.5% > 28.7%. MEMISH ET AL. (2014)

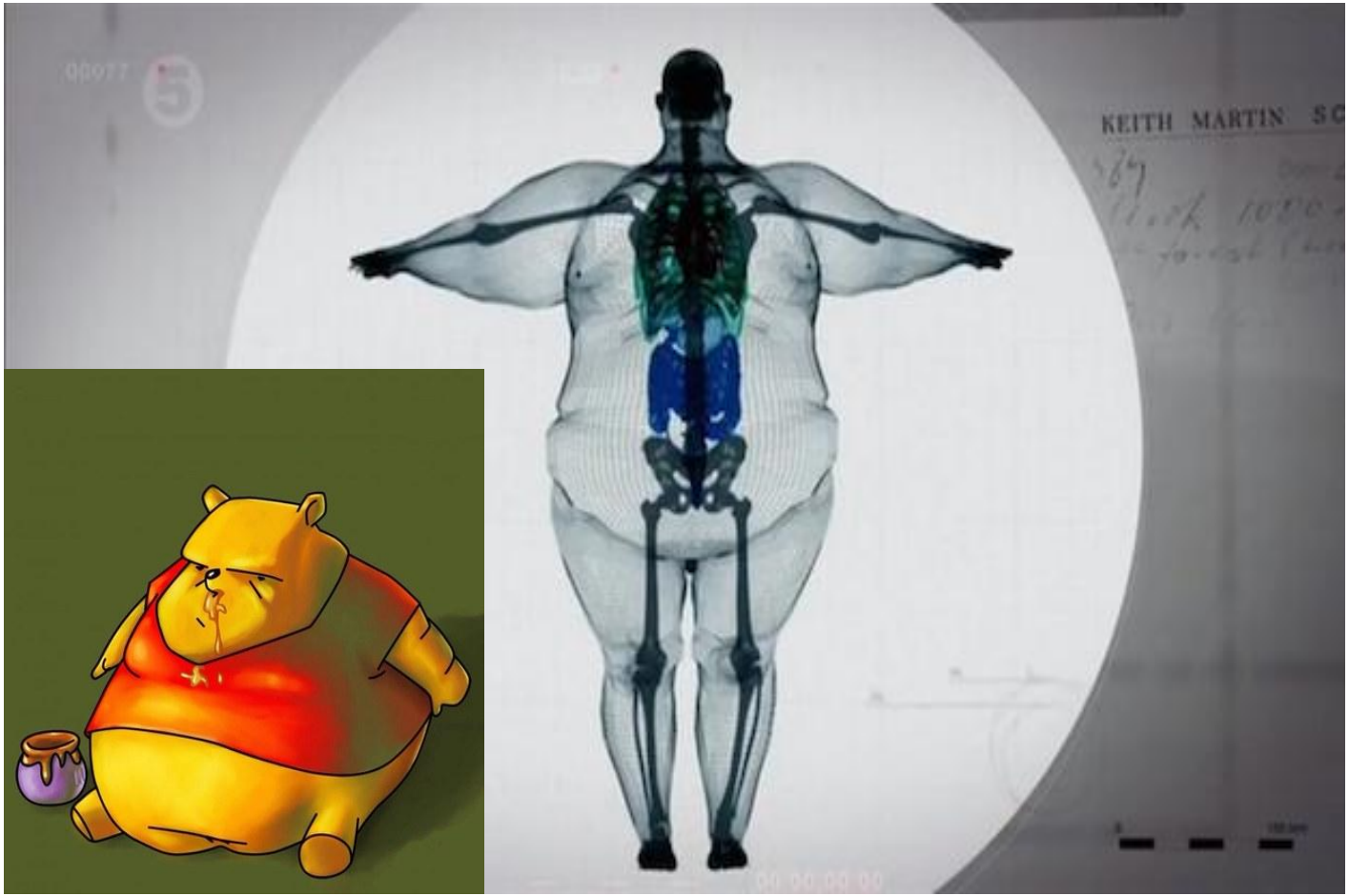
- 2014 RIYADH, JEDDAH, AND AL-KHOBAR(2,908) OBESITY: MALE = 24.1%; FEMALES = 14%

(PREVALENCE OF OVERWEIGHT EQUALS 20.8% AND 19.5%; AND PREVALENCE OF ABDOMINAL OBESITY EQUALS TO 30.3% AND 38.7% IN FEMALES AND MALES RESPECTIVELY). AL-HAZZAA ET AL. (2014)

…… AND IF THINGS CONTINUE AS THEY ARE>>>

- THE OVERALL OBESITY WILL INCREASE TO 41% IN MEN AND 78% IN WOMEN BY 2022. AL-QUWAIDHI ET AL. (2014)

Obesity has been officially recognized as a disease by the American Medical Association, an action that could put more emphasis on the health condition by doctors and insurance companies in order to minimize its effects.



# Causes of obesity

# Causes of obesity:

## Behavioral / Psychological

- Physical inactivity
- unhealthy Diet
- Smoking Cessation
- Ongoing binge eating disorder*,
- depression

## Environment

- Low income
- Culture

## Endocrine

- PCOS
- Hypothyroidism,
- Cushing

## DRUGS

- steroids,
- antipsychotics (e.g. olanzapine),
- contraceptives (especially depo-injections),
- sulfonylureas ,
- insulin

## Genetic

# How can we prevent obesity?

# PRIMARY PREVENTION:

## EDUCATION

### A) MAINTAINING A BALANCED DIET AND A HEALTHY BEHAVIOR

SPECIAL CONSIDERATION FOR CHILDREN:

- AVOID USING FOOD AS A REWARD. - ENCOURAGEMENT OF HEALTHY FOOD CONSUMPTION.

### B) EXERCISING AND ACTIVE LIFE STYLE:

WALK AND EXERCISE FOR 30 MINUTE OR MORE, 5 DAYS A WEEK. - REDUCE TIME SPENT IN FRONT OF TV, COMPUTER, AND MOBILES.

### C) BREAST FEEDING:

A RECENT SYSTEMATIC REVIEW HOWEVER FOUND ONLY A 10 PERCENT REDUCTION OF OVERWEIGHT CHILDREN WITH LONG TERM BREAST FEEDING

# Secondary Prevention:

A) Exercise

B) Diet

C) Drug Management

E) Bariatric surgery

# Tertiary prevention:

Decreasing the progression to more severe obesity

- Reducing the likelihood of associated musculoskeletal, metabolic, or vascular disorders (e.g., osteoarthritis, diabetes, or cardiovascular disease).

# Health risks of obesity

People who have obesity, compared to those with a normal or healthy weight, are at increased risk for many serious diseases and health conditions


Psychosocial
Poor Self-esteem
Depression
Eating Disorders
Neurological
Pseudotumor cerebri
Pulmonary
Sleep Apnoea
Asthma
Exercise Intolerance
Cardiovascular
Dyslipidaemia
Hypertension
Coagulopathy
Chronic Inflammation
Endothelial Dysfunction
Gastrointestinal
Gallstones
Steatohepatitis
Endocrine
Type 2 diabetes
Precocious Puberty
Polycystic Ovary Syndrome(girls)
Hypogonadism(boys)
Renal
Glomerulosc
Musculoskeletal
Flat Feet
Forearm Fracture
Blount's Disease
Slipped Capital Femoral Epiphysis
: Physically
: Psychologically

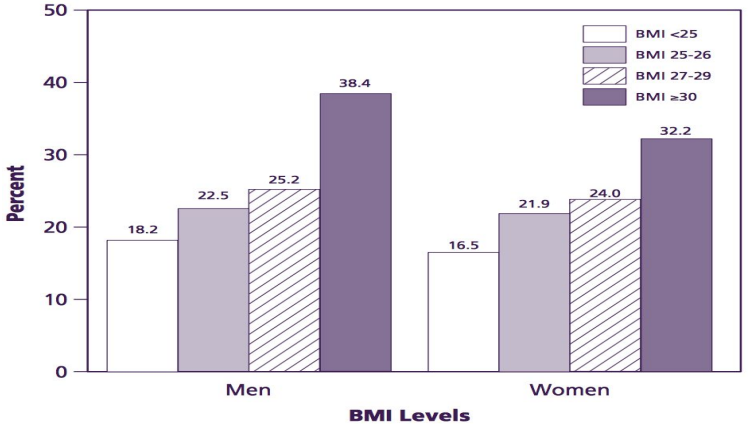
- An important need for primary care physicians is to identify these comorbidities and the resulting outcomes.
- Awareness of the disorders with the strongest associations with obesity is important to allow early diagnosis and treatment, and to identify the patients most likely to benefit from weight loss.
- Early identification and assessment of risks so that appropriate interventions can be implemented to reduce risk and mortality.


## High blood pressure is defined as:

mean systolic blood pressure ≥ 140 mm Hg, or mean diastolic blood pressure ≥ 90 mm Hg,
or currently taking anti- hypertensive medication.

The pathophysiology underlying the development of hypertension associated with obesity includes sodium retention and associated increases in vascular resistance, blood volume, and cardiac output.

Figure 2. NHANES III Age-Adjusted Prevalence of Hypertension* According to Body Mass Index



The direct and independent association between blood pressure and BMI or weight has been shown in numerous cross-sectional studies, including the large international study of salt (INTERSALT) carried out in more than 10,000 men and women. INTERSALT reported that a 10 kg (22 lb) higher body weight is associated with 3.0 mm Hg higher systolic and 2.3 mm Hg higher diastolic blood pressure. 6 These differences in blood pressure translate into an estimated

12 percent increased risk for CHD and 24 percent increased risk for stroke.

# Coronary Heart Disease

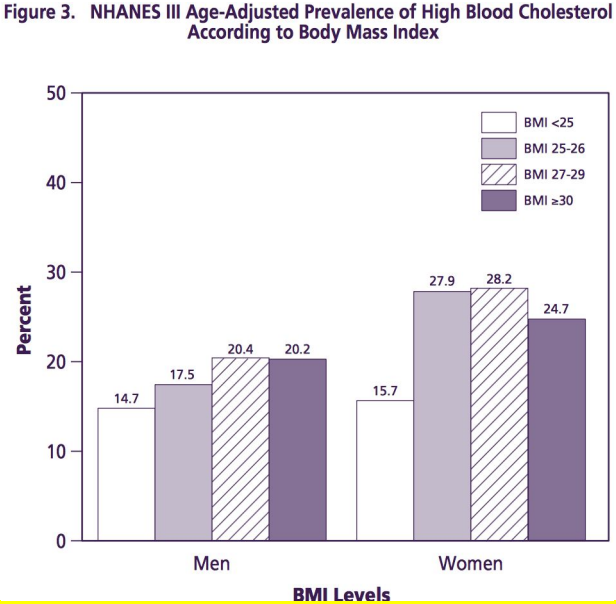
-Recent studies have shown that the risks of nonfatal myocardial infarction and CHD death increase with increasing levels of BMI.

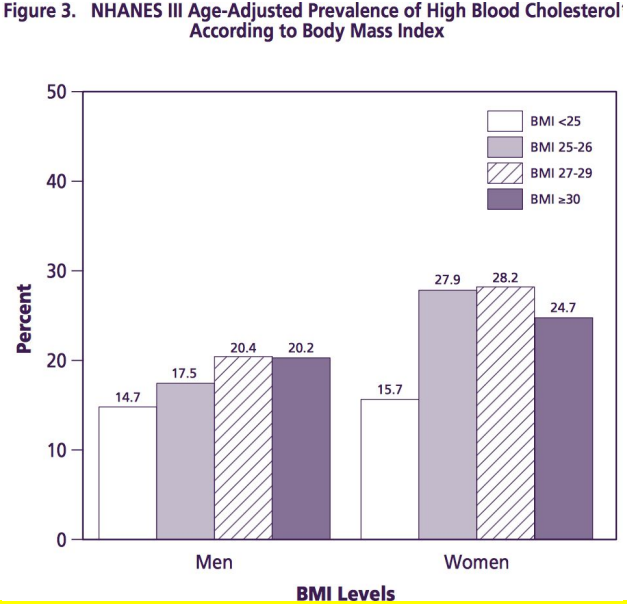
-Weight gains of 5 to 8 kg (11 to 17.6 lb) increased CHD risk (nonfatal myocardial infarction and CHD death) by 25 percent

-Risks are lowest in men and women with BMIs of 22 or less and increase with even modest elevations of BMI.

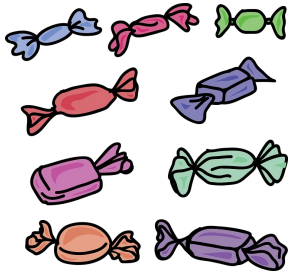
# DYSLIPIDEMIA


High total cholesterol ≥240 mg/d
High triglycerides
Low high-density lipoprotein cholesterol
Normal to elevated low-density lipoprotein cholesterol ≥ 160 mg/dL.



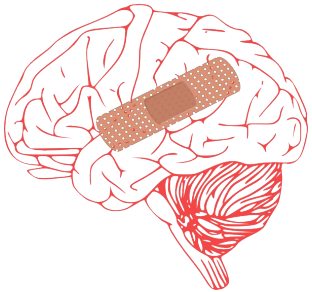
# Diabetes Mellitus



-The relative risk of diabetes increases by approximately 25 percent for each additional unit of BMI over 22 kg/m2 .

-Both cross-sectional and longitudinal studies show that abdominal obesity is a major risk factor for type 2 diabetes.

# Stroke



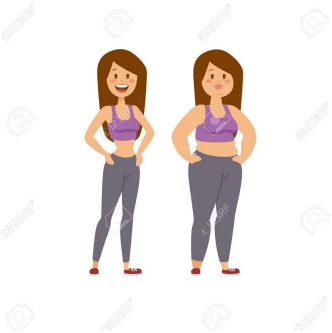
Ischemic stroke risk is 75 percent higher in women with BMI > 27, and 137 percent higher in women with a BMI > 32, compared with women having a BMI < 21.

# Osteoarthritis

-Individuals who are overweight or obese increase their risk for the development of osteoarthritis.

-The association between increased weight and the risk for development of knee osteoarthritis is stronger in women than in men.

-In a study of twin middle-aged women, it was estimated that for every kilogram increase of weight, the risk of developing osteoarthritis increases by 9 to 13 percent. The twins with knee osteoarthritis were generally 3 to 5 kg (6.6 to 11 lb) heavier than the co-twin with no dis- ease.



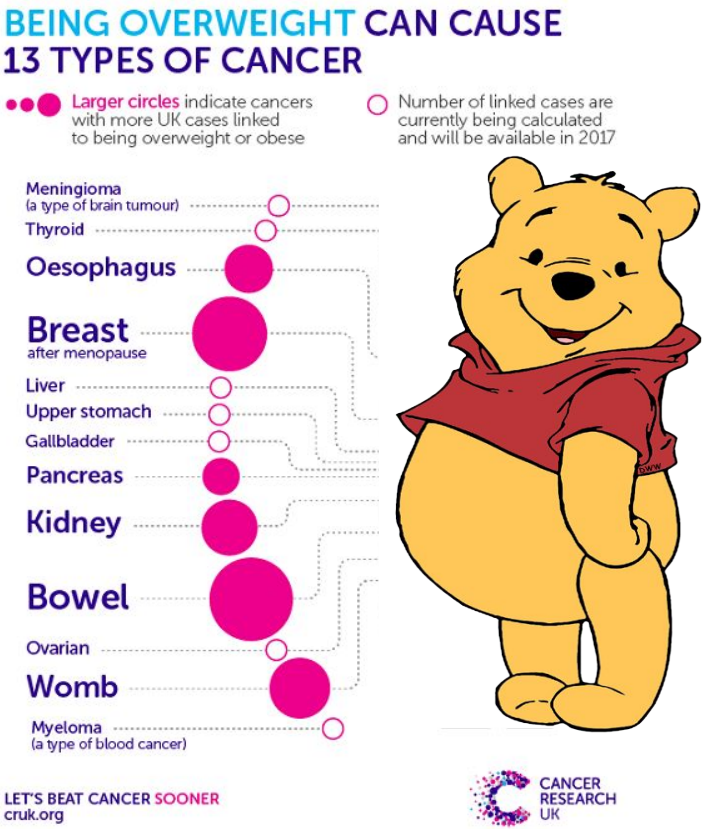
# Sleep Apnea


-The major pathophysiologic consequences of severe sleep apnea include arterial hypoxemia, recurrent arousals from sleep, increased sympathetic tone, pulmonary and systemic hypertension, and cardiac arrhythmias.

-Most people with sleep apnea have a *BMI > 30.*

Large neck girth in both men and women who snore is highly predictive of sleep apnea.

# Cancer


BEING OVERWEIGHT CAN CAUSE
13 TYPES OF CANCER
Larger circles indicate cancers with more UK cases linked to being overweight or obese
Number of linked cases are currently being calculated and will be available in 2017
Meningioma
(a type of brain tumour)
Thyroid
Oesophagus
Breast
after menopause
Liver
Upper stomach
Gallbladder
Pancreas
Kidney
Bowel
Ovarian
Womb
Myeloma
(a type of blood cancer)
LET'S BEAT CANCER SOONER
cruk.org
CANCER RESEARCH UK

# Obesity and Women's Reproductive Health

*Menstrual Function and Fertility*

-Obesity in premenopausal women is associated with menstrual irregularity and amenorrhea..
-a case control study suggested that the greater the BMI at age 18 years, even at levels lower than those considered obese, the greater the risk of subsequent ovulatory infertility.
-The most prominent condition associated with abdominal obesity is polycystic ovarian syndrome.

*Pregnancy*

-higher prepregnancy weights have been shown to increase the risk of late fetal deaths.
-Obesity during pregnancy is associated with increased morbidity for both the mother and the child. A tenfold increase in the prevalence of hypertension and a 10 percent incidence of gestational diabetes have been reported in obese pregnant women.

# Psychosocial Aspects of Overweight and Obesity

-social stigmatization
-Psychopathology

obese individuals seeking treatment reported more psychopathology and binge eating compared to the other groups.

-binge eating disorder.

It is estimated to occur in 20 to 50 percent of individuals who seek specialized obesity treatment.

-body image perceptions.

in some groups of obese persons, these individuals are more dissatisfied and preoccupied with their physical appearance, and avoid more social situations due to their appearance

# Don't be sad winnie

# THE 5AS APPROACH*

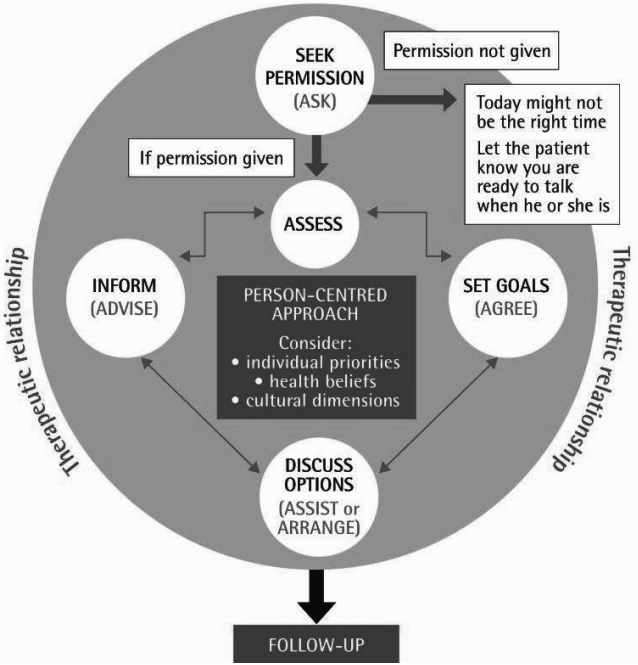
**Figure 1. The 5 *As* framework***


*In Canada, the United States, the United Kingdom, and Australia, the 5 *As* might represent slightly different verbs (eg, *assist* in Canada and the United States is *arrange* in Australia).

* Sturgiss E, van Weel C. The 5 *As* framework for obesity management: Do we need a more intricate model? *Canadian Family Physician*. 2017;63(7):506-508.

# THE EVIDENCE BASED APPROACH TO DECREASE WEIGHT

**Figure 2. Proposed model for the management of obesity within each consultation**



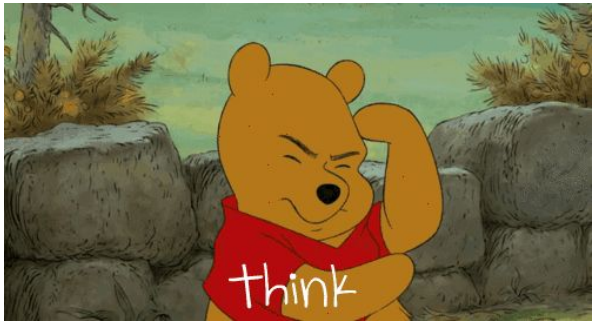

THE INITIAL GOAL OF WEIGHT LOSS THERAPY SHOULD BE TO REDUCE BODY WEIGHT BY APPROXIMATELY **10 PERCENT** FROM BASELINE. WITH SUCCESS, FURTHER WEIGHT LOSS CAN BE ATTEMPTED IF INDICATED THROUGH FURTHER ASSESSMENT.

WEIGHT LOSS SHOULD BE ABOUT 1 TO 2 LB/WEEK FOR A PERIOD OF 6 MONTHS, WITH THE SUBSEQUENT STRATEGY BASED ON THE AMOUNT OF WEIGHT LOST

*Summary of Evidence-Based Recommendations. Available from: https://www.ncbi.nlm.nih.gov/books/NBK2009/

# THE EVIDENCE BASED APPROACH TO DECREASE WEIGHT

## So, what is the PLAN ?




1 **Lifestyle Modification**

*Weight loss and weight maintenance therapy should employ the combination of LCDs, increased physical activity, and behavior therapy. Evidence Category A*

2 **Pharmacotherapy**

*Weight loss drugs approved by the FDA may be used as part of a comprehensive weight loss program*

3 **Surgical**

*Weight loss surgery is an option for carefully selected patients with clinically severe obesity*

Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.

# 1) Lifestyle Modification

*Diet :*

LCDs are recommended for weight loss in overweight and obese persons. Evidence Category A. Reducing fat as part of an LCD is a practical way to reduce calories.

Reducing dietary fat alone without reducing calories is NOT sufficient for weight loss. However, reducing dietary fat, along WITH reducing dietary carbohydrates, can facilitate caloric reduction.

A diet that is individually planned to help create a deficit of 500 to 1,000 kcal/day should be an integral part of any program aimed at achieving a weight loss of 1 to 2 lb/week.

# 1) Lifestyle Modification

## Physical Activity :

Physical activity is recommended as part of a comprehensive weight loss therapy and weight control program because it: (1) modestly contributes to weight loss in overweight and obese adults , (2) may decrease abdominal fat (3) increases cardiorespiratory fitness , and (4) may help with maintenance of weight loss .

Physical activity should be an integral part of weight loss therapy and weight maintenance. Initially, moderate levels of physical activity for 30 to 45 minutes, 3 to 5 days a week, should be encouraged. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, and preferably all, days of the week.

# 1) Lifestyle Modification

15 articles reviewed and included in the guidelines contain strong evidence that the combination of a reduced-calorie diet and increased physical activity produces greater weight loss than diet alone or physical activity alone .

Behaviour Therapy: is a useful adjunct when incorporated into treatment for weight loss and weight maintenance

# 2) Pharmacotherapy

*Weight loss drugs approved by the FDA may be used as part of a comprehensive weight loss program, including dietary therapy and physical activity for patients with a* BMI of ≥ 30 with no concomitant obesity-related risk factors or diseases, and for patients with a BMI of ≥ 27 with concomitant obesity-related risk factors or diseases. *Weight loss drugs should never be used without concomitant lifestyle modifications. Continual assessment of drug therapy for efficacy and safety is necessary. If the drug is efficacious in helping the patient to lose and/or maintain weight loss and there are no serious adverse effects, it can be continued. If not, it should be discontinued.*

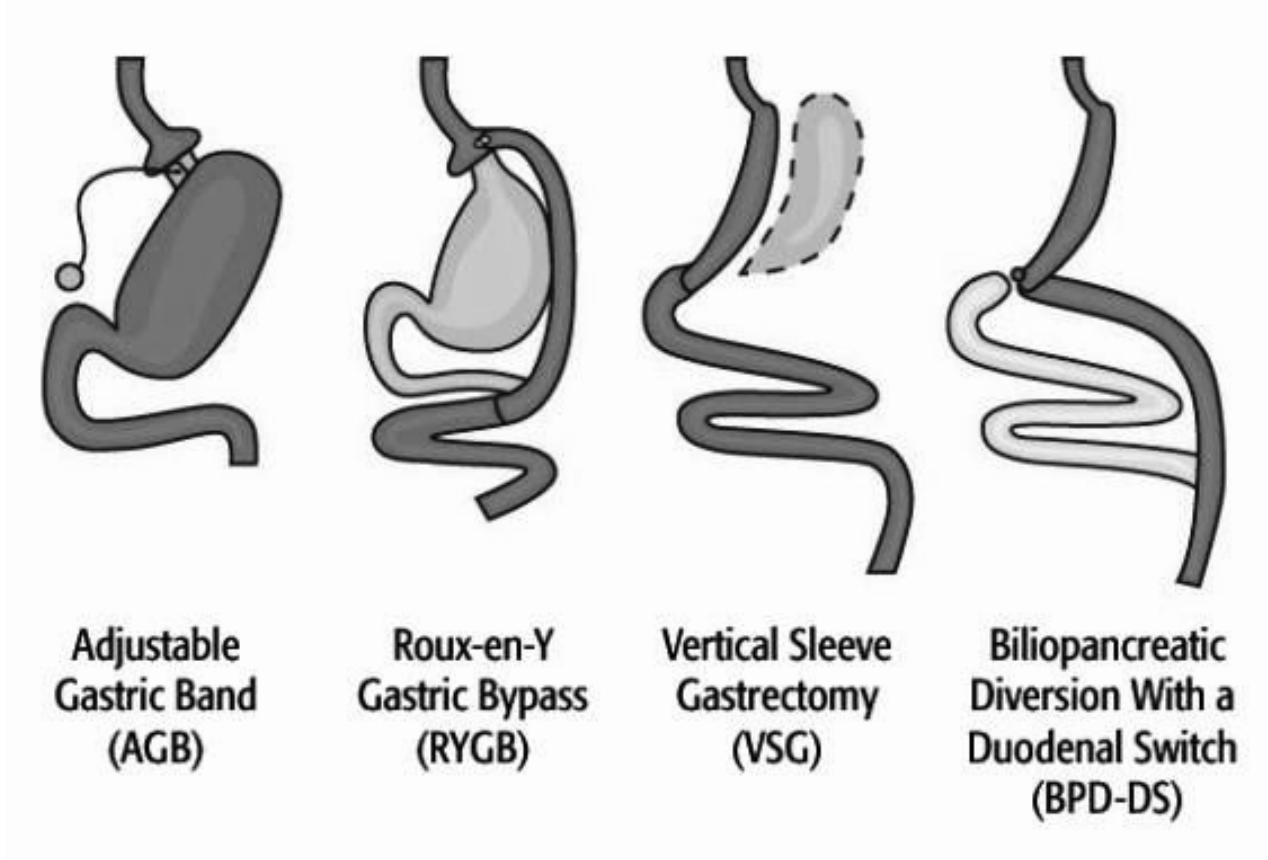
# What Are the FDA approved drugs for obesity treatment?

| Name | MOA | Effects | Side Effects | Contraindications |
|---|---|---|---|---|
| Orlistat | Peripherally acting pancreatic lipase inhibitor; reduces absorption of ingested fat | Orlistat plus behavioral counseling doubled weight loss seen with placebo/counseling. Progression to diabetes reduced. | Gastrointestinal (diarrhea, flatulence), especially if large amounts fat are ingested. | Pregnancy, cholestasis, chronic malabsorption syndromes, coadministration with cyclosporine. Can increase urinary oxalate and predispose to kidney stones. |
| Phentermine Topiramate ER | Combination of appetite-suppressant sympathomimetic amine and anticonvulsant | Additive effect of drug combination leads to more weight loss than either agent alone; reduced progression to type 2 diabetes | Paresthesia, dizziness, dysgeusia, insomnia, constipation, dry mouth. | pregnancy should be ruled out before starting the medication, and women of childbearing age should use contraception and have monthly pregnancy testing during use. |
| Lorcaserin | Selective serotonin 2c (5HT-2c) receptor agonist; stimulates 5HT-2c receptors (not other serotonin receptors) in the appetite center of the brain. | Average weight loss 8%; improved blood pressure, lipids, glycemic control. | Headache, dizziness, fatigue, nausea, dry mouth, constipation; hypoglycemia with concomitant antidiabetic agents. | Pregnancy<br>(Risk for serotonergic syndrome/neuroleptic malignant syndrome if the patient is taking serotonergic or antidopaminergic agent) |
| Naltrexone SR/Bupropion SR | Effects may occur in the hypothalamic appetite center or the mesocorticolimbic dopamine system and other brain areas related to reward-driven behaviors | Long-term use; combination produces > 8% weight loss (diminished appetite and cravings); > 12% weight loss when combined with intensive lifestyle intervention. Also improves glycemic control. | Nausea, constipation, diarrhea, headache; most resolve in days to weeks and do not recur. | Uncontrolled hypertension; seizure disorders; chronic opioid use; MAOI use; pregnancy |
| Liraglutide 3.0 mg | Glucagon-like peptide 1 receptor agonist. | Achieved 9% weight loss; 71% maintained at 3 years. Reduced progression to diabetes by 80%. | Nausea; gastrointestinal symptoms | History of medullary thyroid carcinoma, multiple endocrine neoplasia type 2, acute pancreatitis, pregnancy, breastfeeding. |

FDA Approved drugs for obesity https://www.medscape.com/viewarticle/876411_2

# 3) Surgical therapy

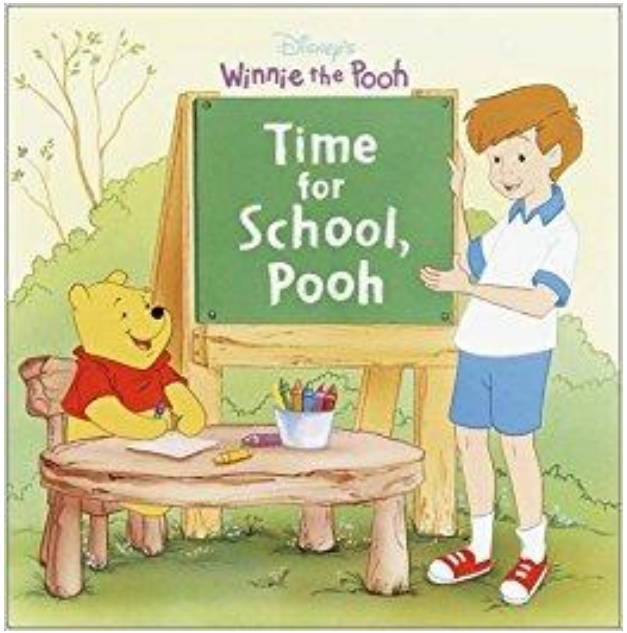

Weight loss surgery is an option for carefully selected patients with clinically severe obesity (BMI ≥ 40 or ≥ 35 with comorbid conditions) when less invasive methods of weight loss have failed and the patient is at high risk for obesity-associated morbidity or mortality.




# What are the commonest types of bariatric surgeries ?

# Weight Loss Maintenance

A weight maintenance program should be a priority after the initial 6 months of weight loss therapy.




# What is our ROLE AS A MEDICAL STUDENTS AND HEALTH TEAM??

# Role of medical students and health team in the community

- Serve as leaders and role models, within one's practice and community, to encourage healthy changes in physical activity, nutrition, and the built environment.
- Interpreting BMI percentile for age
- Counseling on nutrition and physical activity
- Motivational interviewing skills
- **Educate the public**

# What is the Role of schools??

# Role of schools

- Educate the parents
- Educate the children
- Screening
- More nutritious food
- Physical activity
- Health services
- Health education


www.almowaten.net
Kinder
bueno
OREO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KOPIKO
Flutes


CHARMS
KRANCH

sometimes
the smallest
things take
up the most
room in your
heart

-winnie the pooh

GeniusQuotes.net

# MCQ

https://www.mentimeter.com/s/9672b718c10d22db890635a597d54a60/49c65b403a4d/edit

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Sturgiss E, van Weel C. The 5 *As* framework for obesity management: Do we need a more intricate model? *Canadian Family Physician.* 2017;63(7):506-508 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5507219/

FDA Approved drugs for obesity https://www.medscape.com/viewarticle/876411_2

Guide to weight loss surgeries

https://www.mayoclinic.org/tests-procedures/bariatric-surgery/in-depth/weight-loss-surgery/art-20045334

# Thank You
# Any Questions?