OBESITY
(outlines)

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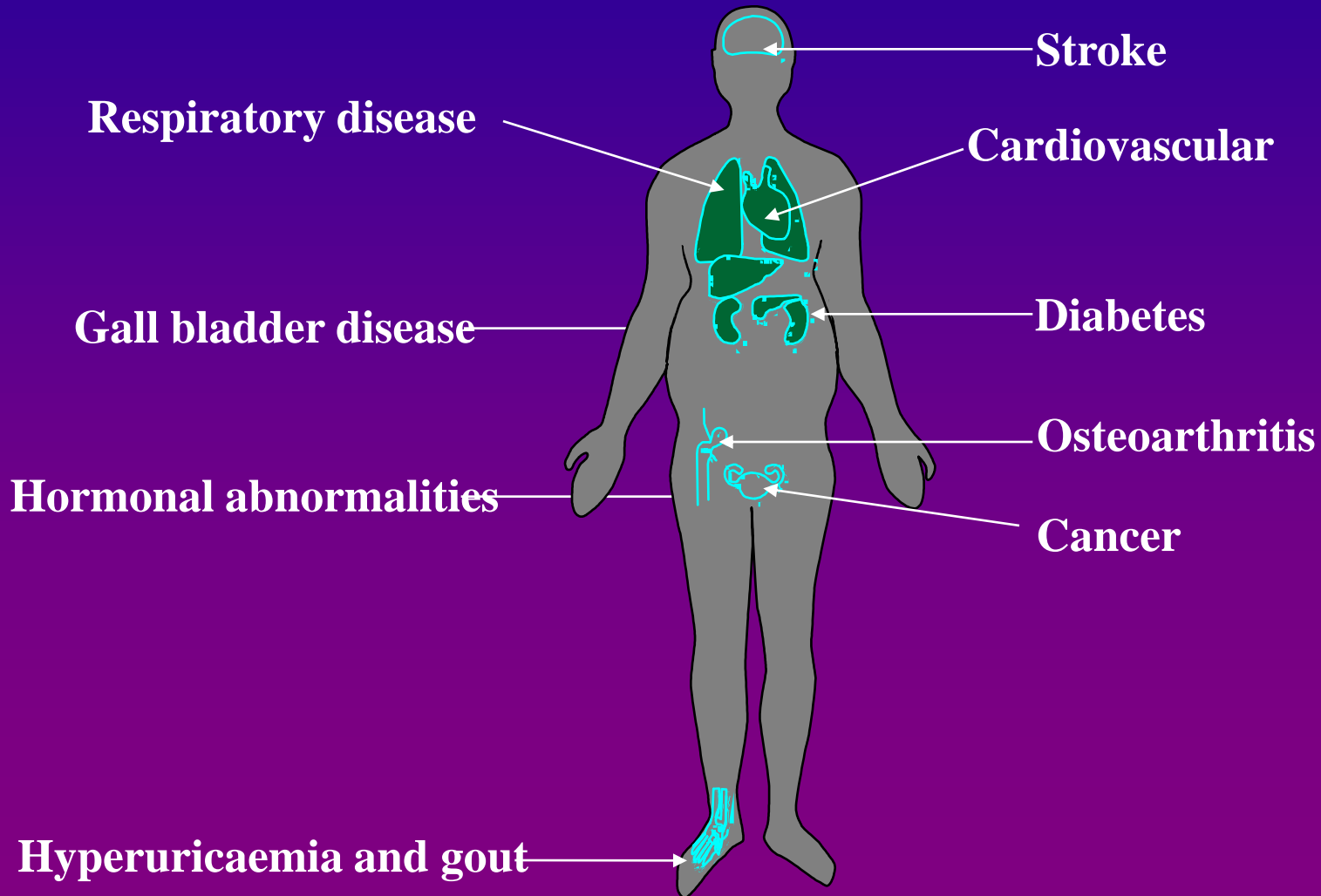
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Obesity and mortality
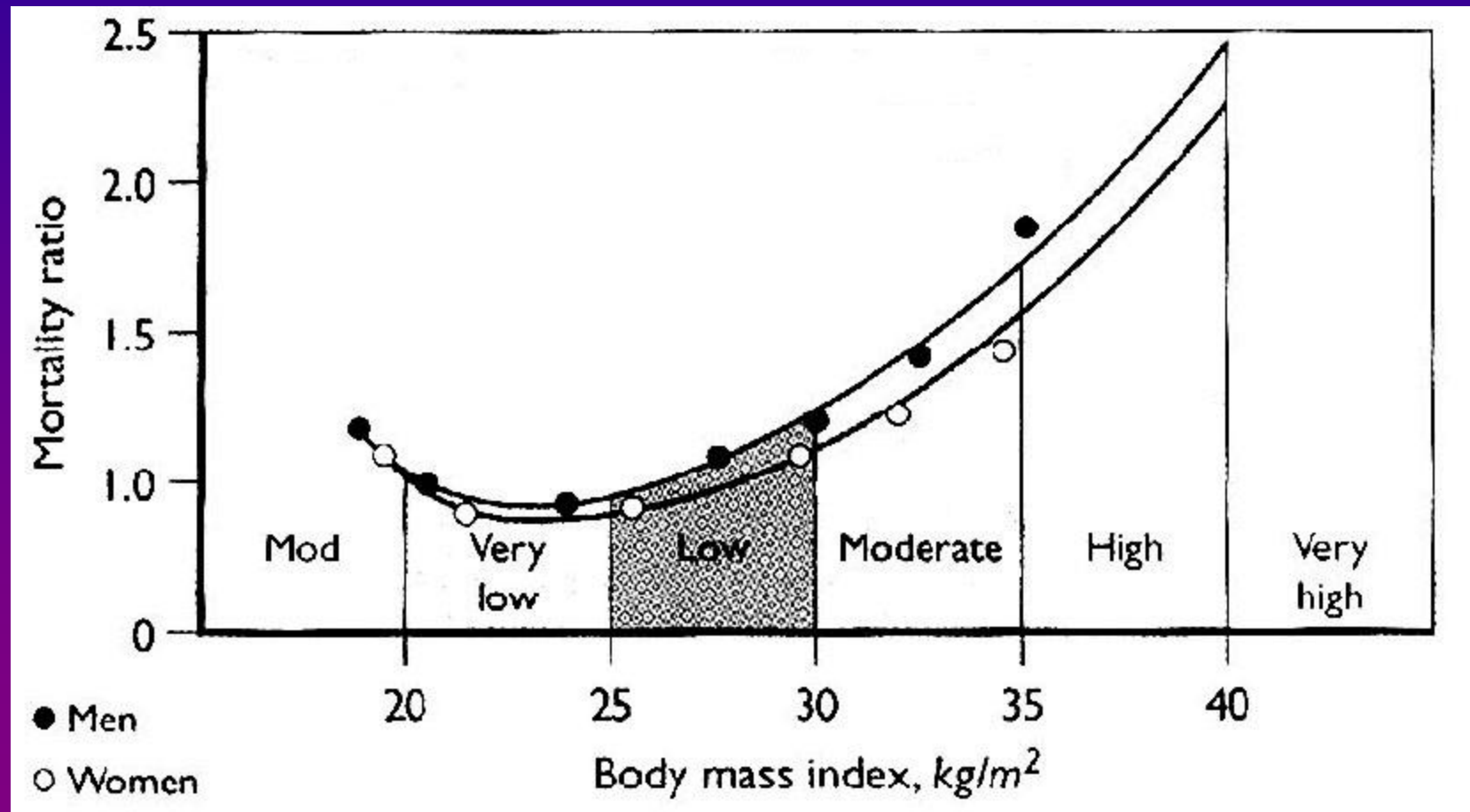
Physical Effects of Obesity

Stroke

Respiratory disease

Cardiovascular

Gall bladder disease

Diabetes

Osteoarthritis

Hormonal abnormalities

Cancer

Hyperuricaemia and gout

Obesity

- WHO:

  "Abnormal or excessive fat accumulation in adipose tissue, to the extent that health is impaired"[1,2]

- Presence of an abnormal absolute amount or relative proportion of body fat.

1. WHO. Obesity: Preventing and Managing the Global Epidemic. Technical report 894. Geneva: WHO, 2000;256

2. Garrow JS. Obesity and Related Diseases. Edinburgh: Churchill Livingstone, 1998.

Surrogate measures of adiposity

- Ideal body weight
- Weight
- Anthropometric measures
- Body mass index (BMI):
- Recommended by WHO
- Relatively reliable except in:

    - Extremes of age or height
    - Very fit individuals with muscular build

Physical status: the use and interpretation of anthropometry. Report of a WHO expert committee. Geneva: WHO, 1995; 329

WHO recommended definition of obesity (2000)

Classification	BMI(kg/m^2)	Risk of co-morbidities
Underweight	<18.5	Low (but risk of other clinical problems increased)
Normal range	18.5-24.9	Average
Overweight Pre-obese	>25.0 25-29.9	Mildly increase

WHO recommended definition of obesity (2000)

Classification	BMI(kg/m^2)	Risk of co-morbidities
Obese	>30	
Class I	30-34.9	Moderate
Class II	35-39.9	Severe
Class III	>40.0	Very severe

WHO. Obesity: Preventing and Managing the Global Epidemic. Technical report 894. Geneva: WHO, 2000

Central Obesity

- Central or visceral obesity is associated with more metabolic disease:

- DM$_2$

- Hypertension

- Dyslipidemia

? How to assess central or visceral obesity?

Central Obesity

- MRI
- Dual X-ray absorptiometry (DEXA)
- Single CT slice L4/L5
- Waist: hip ratio
- Waist circumference

The narrowest circumference midway between the
lower border of the ribs
and the upper border of the iliac crest,
taken from the side

Etiology & Pathogenesis

- Multifactorial
- Biochemical/Dietary/behavioral pathways.
- Imbalance between energy intake and energy expenditure

Caloric intake

Energy expenditure
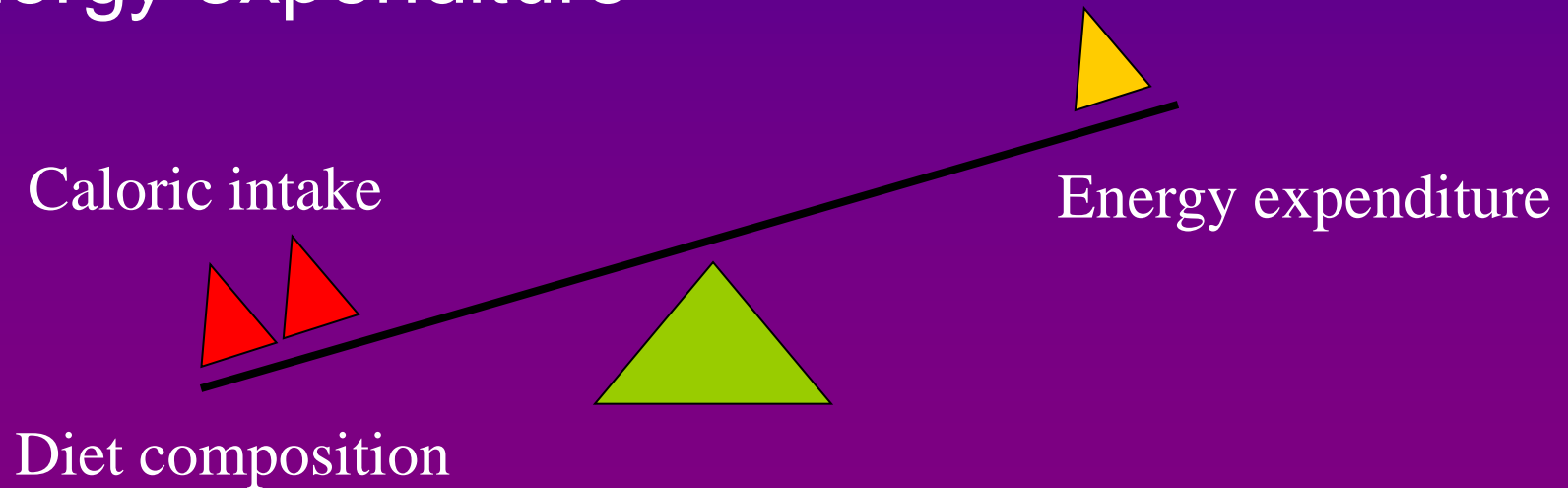
Diet composition

Body weight and composition regulation
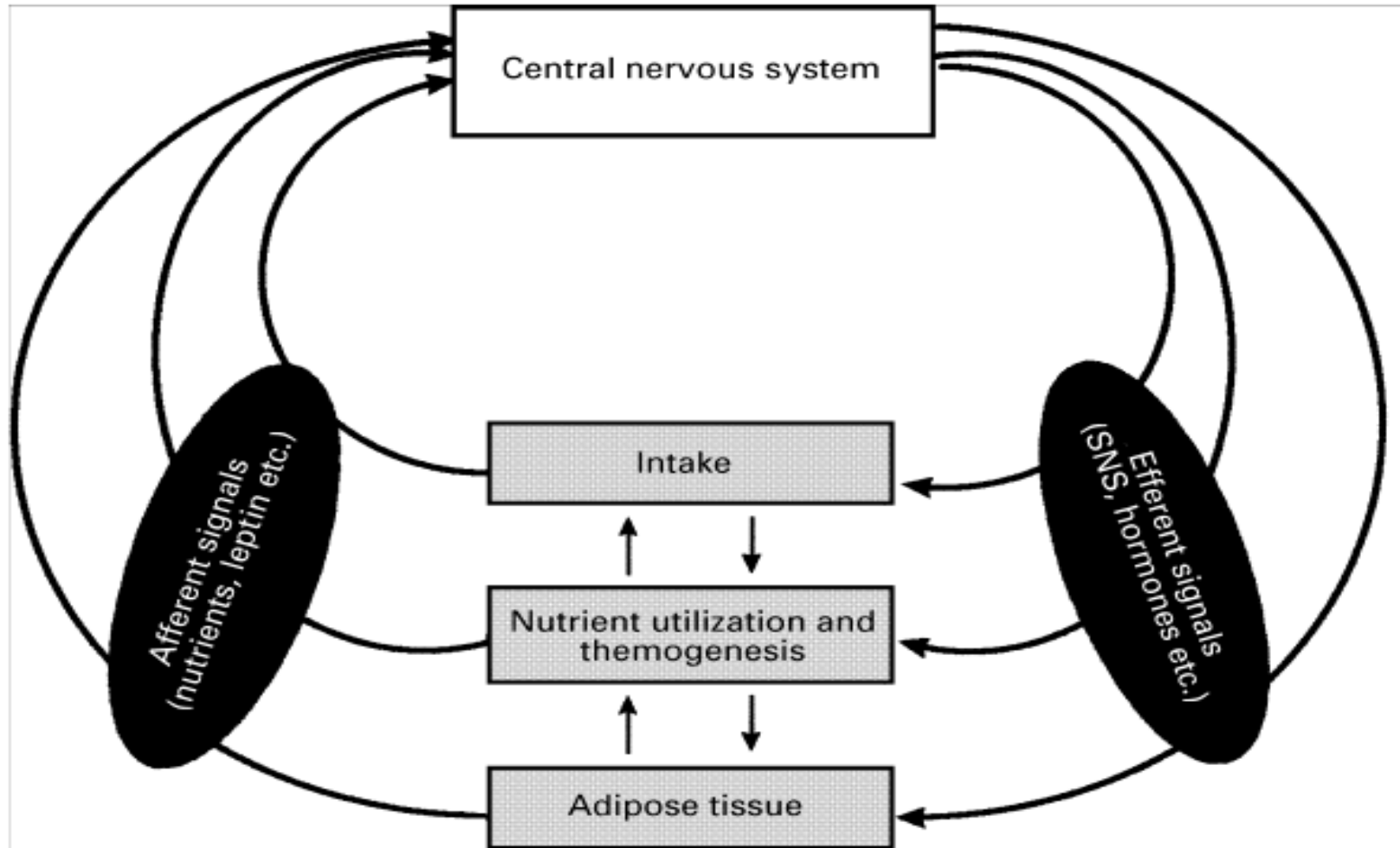
Etiology & Pathogenesis

Body weight is ultimately determined by the interaction of:

- Genetic

- Environmental and

- Psychosocial factors

- Acting through several physiological mediators of food intake and energy expenditure

(Jebb, 1997; Cooling *et al*. 1998; Weinsier *et al*. 1998).

Etiological classification of obesity

- Neuroendocrine disease
- Drug-induced
- Dietary
- Reduced energy expenditure
- Genetic factors

Dietary obesity

- High carbohydrate diet
- Hi fat diet

Energy expenditure

- Resting metabolism
- Physical exercise
- Dietary thermogenesis (thermic effect of food)
- Adaptive thermogenesis

Obesity

Management

Diet

- Careful Training in :
    Selection of lower fat, lower carb foods
    Modified food guide pyramid
    Increase fruits & vegetables
    Lower fat preparation techniques
    Estimation of portion size

Exercise for Weight Maintenance

Modified from Pavlou KN, et al. *Am J Clin Nutr*. 1989;49:1115-1123.
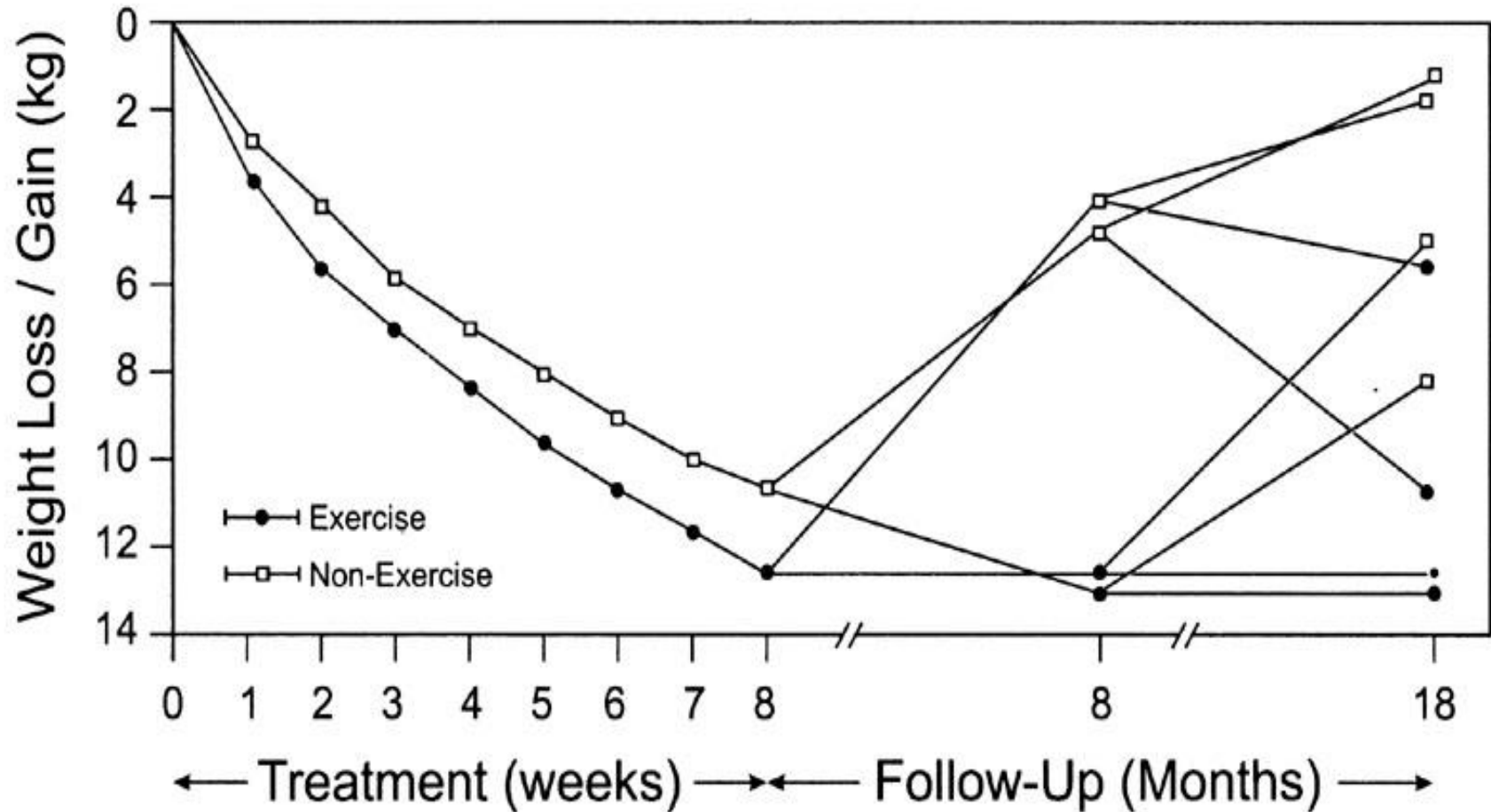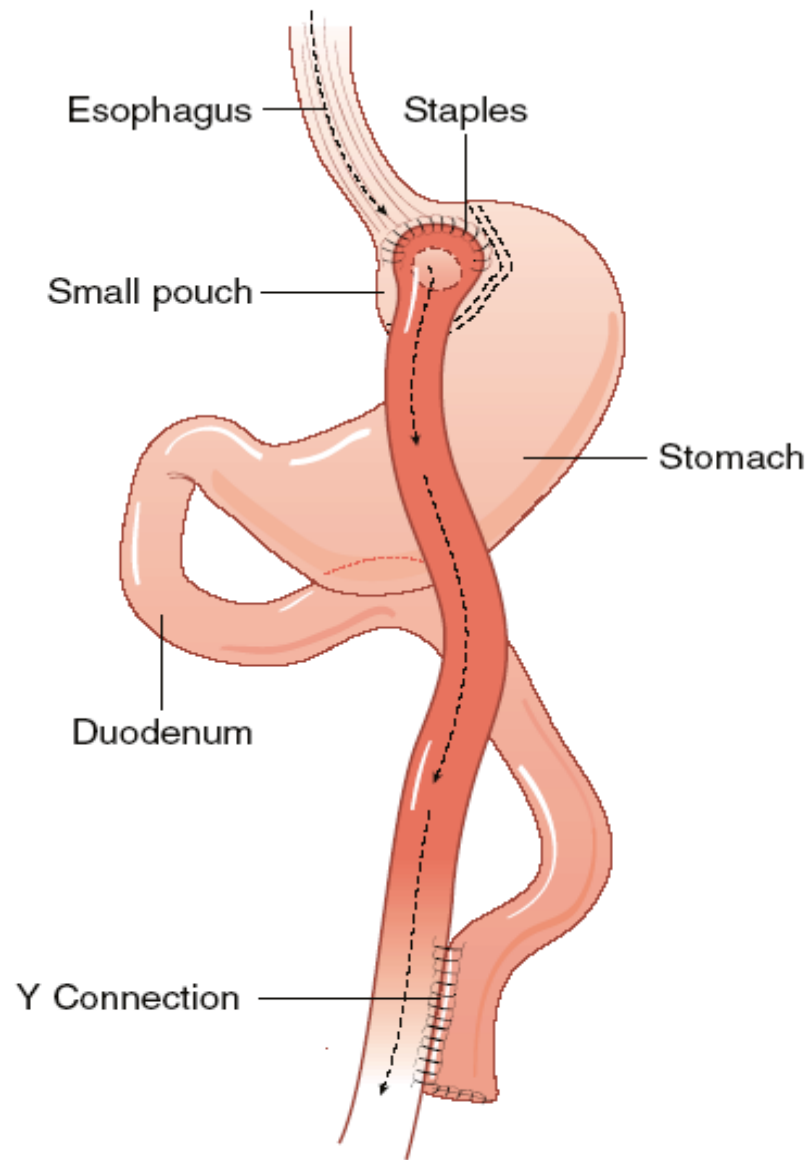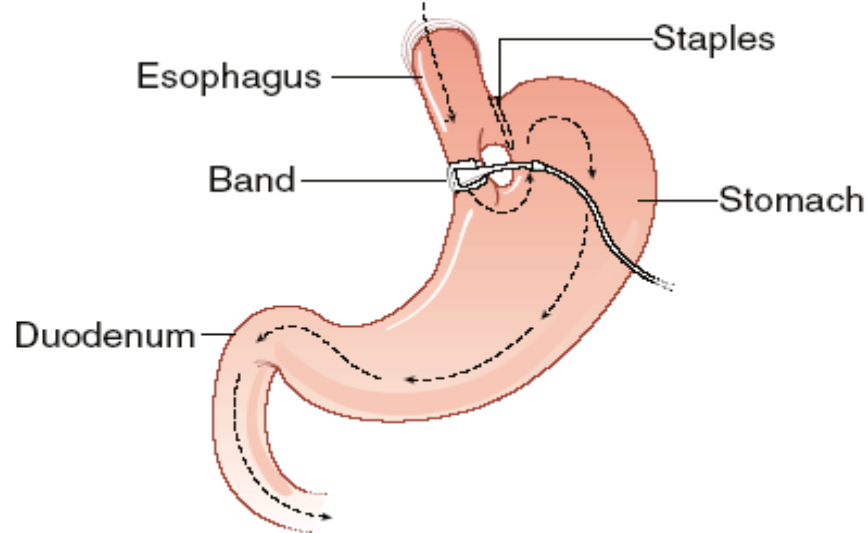
Orlistat

- A lipase inhibitor, reduces the absorption of dietary fat
- Lowers Cholesterol (4-11%) & LDL (5-10%)
- Major C/I:
- Chronic malabsorption syndrome
- Cholestasis
- Pregnancy and breast feeding
- Dose:
- 120 mg/ immediately before, during, or up to 1 hour after each main meal (up to max. 360mg/day)
- Max. period of treatment is 2 year
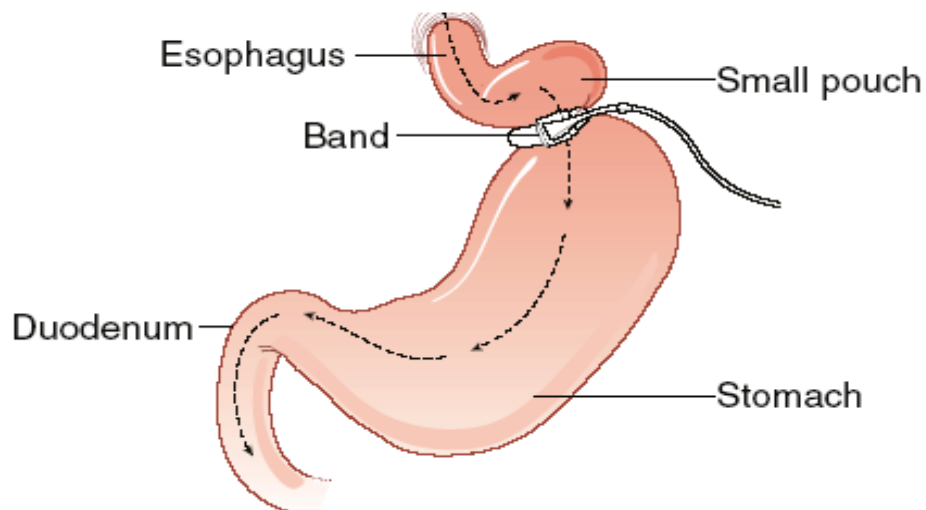
FIGURE 1

Bariatric surgical techniques for weight loss

Gastric bypass (Roux en Y)

- Esophagus
- Staples
- Small pouch
- Stomach
- Duodenum
- Y Connection

Gastroplasty (vertical banded)

- Esophagus
- Staples
- Band
- Stomach
- Duodenum

Gastric banding (horizontal)

- Esophagus
- Small pouch
- Band
- Duodenum
- Stomach

ILLUSTRATION BY JENNIFER FAIRMAN

Thank You