

Obesity



Unit: Understanding medical conditions for exercise referral

Obesity

- Recognised by the World Health Organisation as:
 - a global epidemic
 - a disease in its own right
 - largely preventable through changes in lifestyle
- Contributory environmental factors include:
 - excess calories,
 - fast foods,
 - lack of activity,
 - labour saving technology,
 - long working hours,
 - high stress
 - hormonal disruption

Classification

- Body Mass Index (BMI)
 - easy to use
 - requires no specialist equipment

BMI (kg/m ²)	Description
<18.5	Underweight
18.5 to 24	Normal
25-29	Overweight
>30	Obese
>40	Morbidly obese

Classification

Adults: Central adiposity measured by waist circumference

Increased health risk

- waist circumference equal to or greater than:
 - 94 cm in men
 - 80 cm in women

Substantially increased risk

- waist circumference equal to or greater than:
 - 102 cm in men
 - 88 cm in women

(NICE. 2006)

Prevalence

- For adults in the UK:
 - Has trebled during the past 25 years.
- For children in the UK:
 - One third will leave primary school overweight, or obese.
- The National Audit Office report obesity:
 - Increases with age.
 - Is more prevalent among lower socio-economic and lower-income groups, with a particularly strong social class gradient among women.
 - Is more prevalent among certain ethnic groups, particularly among African Caribbean and Pakistani women.
 - Is a problem across all regions in England but shows some important regional variations.

Cost to the nation

In 2015 the Health Select Committee (HSC) reports:

- Obesity costs the NHS approximately £5.1 billion every year.
- Obesity is a major risk factor for type 2 diabetes which costs the NHS a further £8.8 billion per year.
- Only £638 million is spent on obesity prevention programmes.

Public Health England discusses that:

- The indirect costs of obesity may be approximately £16 billion, however they may be as much as £27 billion.

Presentation

- Excess of body fat
- Being slightly overweight may not present too many noticeable problems.
- Short term issues may include:
 - breathlessness
 - increased sweating
 - snoring and/or difficulty sleeping
 - inability to cope with sudden onset of physical activity
 - joint pain
- Longer term issues that are more harmful to health include:
 - high blood pressure (hypertension)
 - high cholesterol levels (hypercholesterolaemia)
 - type 2 diabetes

Risk factors

Risk factors that increase the risk of obesity include:

- genetic factors
- inactivity
- unhealthy diet
- family lifestyle
- those who were previously overweight and who have lost weight
- smokers who have stopped smoking
- those who change from an active to an inactive lifestyle
- pregnancy
- sleep disturbances
- certain medications
- age
- socioeconomic status



Part two

ACCEPTED TREATMENTS

Intervention

Lifestyle intervention

- Stage 1: reducing calorie intake and becoming more active
- Stage 2: (BMI over 30 and weight loss slowed) a 'very low calorie diet' (below 1000 kcals) for up to 12 weeks or on certain days of the week

Pharmacological intervention

- BMI in excess of 30
- Have applied lifestyle advice and still not lost enough weight

Surgery – last resort

- morbidly obese
- no success with previous methods
- involves reducing the size of the stomach to prevent larger food intakes, or
- bypassing part of the gut, to prevent the absorption of food into the blood stream, increasing excretion

Common medications

Orlistat

- inhibits gastric and pancreatic enzymes
- leads to increased excretion of undigested fats out of the bowel.

Credible sources:

- *British National Formulary (BNF)*
 - *MIMs*
 - *Patient UK*
 - *NICE*

Side effects may include

- Oily stools
- Faecal urgency
- Mild gastrointestinal discomfort
- Bloating
- Flatulence
- Headaches



*Any
implications for
exercise?*

Medication and exercise

- Generally, will not affect the exercise response
- Potential implications before, during and after exercise
 - Oily stools
 - Faecal urgency
- Consider side effects of other medications being taken for comorbid conditions
 - Diabetes
 - Hypertension
 - Hypercholesterolaemia



Part three

EXERCISE GUIDELINES AND CONSIDERATIONS

Rationale for exercise

- Reducing body fat levels
- Increasing energy expenditure
- Shift towards a negative energy balance
 - the body becomes reliant on fat stores to provide the lacking energy
- Alter metabolism for longer periods of time
- Increasing aerobic fitness levels
 - increases the ability to deliver oxygen to the cells
 - increases reliance on aerobic energy producing pathways
 - shifts the body towards its most efficient energy producing pathways that provide the largest amount of total energy

Exercise recommendations

Mode of exercise	FIT principles
Aerobic	<ul style="list-style-type: none"> • 40%-70% maximum heart rate (66% MHR for males; 70% MHR for females) • Monitor RPE and HR during exercise • >5 days/week • 30-60mins per session or 2-3 sessions per day of 20-30 mins each; accumulate 200-300 mins of activity per week • Emphasise duration over intensity (until fitness improves)
Resistance	<ul style="list-style-type: none"> • 2-4 sets 10-15 reps • 60%-75% 1RM • 20-30 mins per session • 1-3 days/week
Flexibility	<ul style="list-style-type: none"> • Static stretches hold for 10-30 secs • Daily or at least 5 sessions per week

Exercise considerations

- Optimize energy expenditure
 - Accumulate
 - ADLs
- Minimize potential for injury
 - Low impact
 - Reduce weight-bearing
- Other
 - Restrictions of body bulk
 - Modify exercise positions
 - Self-esteem & confidence
 - Stigma



Comorbidities

- Consider
 - Any change in risk stratification?
 - Effects of medications
 - Exercise recommendations for other conditions
 - Further adaptations and modifications?