PRIMARY CARE
MED437

Approach to Obese patient

Objectives:

- How to accurately assess a patient's weight?
- How common is obesity in KSA?
- How to sensitively mention the subject of weight in a consultation?
- What to advise patients about diet and levels of activity?
- ow to advise on medications for adults?
- The different types of bariatric surgery.
- The long-term outcomes and complications of bariatric surgery.
- Appreciate the role of the primary care team in managing such a common problem.

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References

- Doctor's slides and notes

Important *Notes* *Extra* *Golden*

Editing file link

How To Accurately Assess A Patient's Weight?Adults

- Although BMI is a practical measurement, it is not a direct measure of adiposity so is potentially inaccurate in very muscular people.
- Overweight in an adult is defined as a BMI of 25 - 29.9 kg/m^2
- Obesity when BMI is over $30kg/m^2$.
- NICE guidance suggests consideration of waist circumference in addition to BMI in adults with a BMI less than 35 kg/m^2 .
- Some population groups, however, have risk factors for disease at different BMIs: at lower levels of BMI for adults of Asian origin, and higher levels of BMI for older people.
- It is important to use your clinical judgement when considering risk factors in these groups, even in people not classified as being overweight or having obesity.

How To Accurately Assess A Patient's Weight? Children

- BMI charts for children take account of their age and sex.
- Children have naturally thinner body shapes at around ages 4 to 8 years, and the lowest point in the BMI reference values for children is at those ages.
- "overweight" for children with BMI above the **91st centile**
- "very overweight" (rather than "obesity") for children with BMI above the **98th centile**.
- Use a calculator to explain BMI to parents
- https://www.nhs.uk/live-well/healthy-weight/bmi-calculator/
- To help parents and health professionals recognise which children are overweight, visual representation helps.
- Computer generated images of children ranging from underweight to overweight, called body image scales (BIS), have been produced for children aged 4 to 5 years and 10 to 11 years, which map to specific categories of weight.

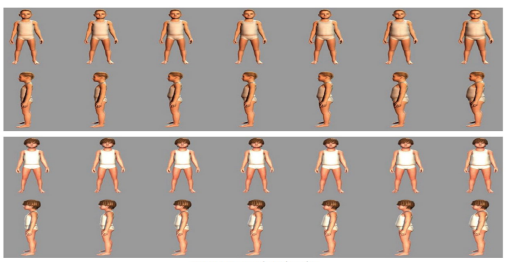


Fig. 2 Body image scales of known weight status for 4–5-year-old girls and boys (A = underweight; B, C, D = healthy weight; E = overweight; F, G = v overweight). Readers who wish to use this image should contact Prof Ashley Adamson (Ashley.Adamson@newcastle.ac.uk), for detailed instructions on h to use and insert the image into other documents.

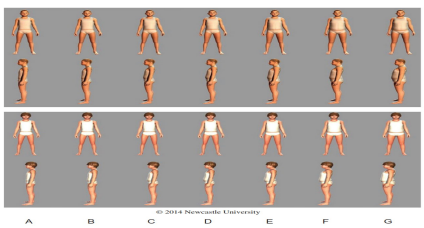
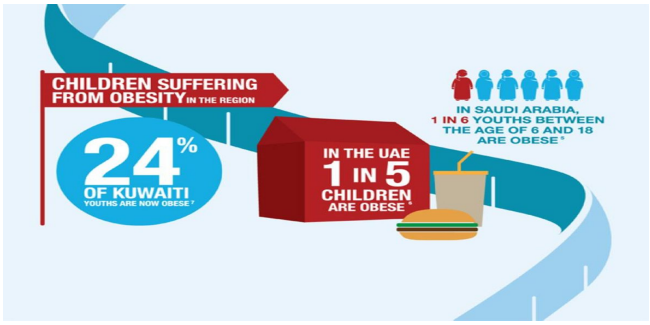


Fig. 3 Body image scales of known weight status for 10–11-year-old girls and boys (A = underweight; B, C, D = healthy weight; E = overweight; F, G = very overweight). Readers who wish to use this image should contact Prof Ashley Adamson (Ashley.Adamson@newcastle.ac.uk), for detailed instructions on how to use and insert the image into other documents.

How common is obesity in KSA?

- One study of over 2000 GPs and GP trainees found that there was a tendency to underestimate BMI, and GPs varied in how likely they were to intervene on weight management.
- Obesity is common
- It is not accurate to assess a patient's weight by appearance,
- you need to calculate their body mass index (BMI) from their weight (kg) / height (m)2 as recommended in guidance from the National Institute for Health and Care Excellence (NICE).



How to sensitively mention the subject of weight in a consultation?

Public Health England

Protecting and improving the nation's health

LET'S TALK ABOUT WEIGHT

A step-by-step guide to brief interventions with adults for health and care professionals

ASK

"Before you leave, could I check your weight today?"

Weigh and measure the patient

Calculate BMI

BMI = Weight in kg divided by height in metres squared [weight (kg) / height (m^2)]

ADVISE

"One of the best ways to lose weight is with support and [insert name of weight management service] is available today*. I can refer you now if you are willing to give it a go?"

Consider referral options:
See supporting guidance for referral criteria

Considerations:
State that referral is available (*and free if this applies in your area. Consider directing to commercial services if local provision is not available)

Keep conversations brief (30 seconds)

Confidence is key

ASSIST

Patient receives advice **positively**	• Let the patient know what the next steps are • Suggest a follow up appointment to monitor the patient and to provide help and encouragement with their weight
Patient is **receptive** but **non-committal** about a referral e.g. wants to try to lose weight themselves	• Show acceptance of patient's wishes, acknowledge their concerns and recognise the difficulties of weight loss. Re-emphasise the importance of working to achieve a healthier weight, re-offer your support • Suggest a follow up appointment to monitor the patient and to provide help and encouragement with their weight
Patient **does not want to engage** in conversation about weight management	• Show acceptance of patient's wishes, re-offer your support should they change their mind • Don't force the issue – leave the door open

ACTIONS

1. Make the referral if patient accepts offer
2. Note in patient's records any conversations about weight and the outcomes
3. Remember to follow up with your patient

Tips To Broach The Subject Of Weight In The Consultation without Causing Offence

Examples of ways of mentioning weight in a consultation

- Often patients are only too aware of the need to lose weight, and so an open question along the lines of ***"How do you think your weight is today?"*** may help initiate a valuable discussion
- Another technique is to use a patient's **obesity-related condition** to highlight the **benefits of losing weight**. For example, you can link a *patient's control of their type 2 diabetes to weight loss*

Are there any routine blood tests or other tests that are useful to assess for comorbidities or possible reasons for a person's gain in weight, particularly for people who feel their lifestyle is not a contributing factor?

Genetics Vs environment

Although an estimated 40 to 70% of obesity is due to common genetic predisposition, the obesogenic environment appears to be the **main contributor** to increasing trends in BMI over recent years. Moreover, studies show that the influence of genes on body weight can be modified by healthy environments.

Assessment Of Adults (Condition Causing Obesity)

Hypothyroidism	can cause weight gain and other symptoms including tiredness and lethargy.
Cushing's syndrome	only investigate if there is a clinical suspicion that this could represent the underlying aetiology. Initial screening tests for Cushing's syndrome are the overnight low dose dexamethasone suppression test and/or 24 hour urinary cortisol collections
Hypothalamic damage	conditions that damage the hypothalamus (for example craniopharyngioma post neurosurgery) can lead to obesity associated with disordered appetite (hyperphagia)
¨Mental health factors **Depression**	Depression is one of the key mental health factors in obesity, and thus mood is important to optimise wherever possible. Medical conditions such as untreated hypothyroidism or obstructive sleep apnoea (OSA) may adversely contribute to a patient's low mood
Binge eating disorder	Binge eating disorder is frequently associated with obesity and is particularly common among people referred for bariatric surgery. [45] Compared with other eating disorders, binge eating disorder is more common in **men** and middle aged people. [45] Typically patients present with two or more binges per week for several months, with no compensatory behaviours. Patients generally report that they use food as a coping mechanism

Emotional eating	Generally this is not as severe as binge eating disorder, but nevertheless can have a serious impact on a patient's weight
Substance abuse	Excessive alcohol ingestion can lead to a substantial calorie intake, whilst contributing little in the way of nutritional benefit
Abuse and domestic violence	Abuse, in particular sexual abuse, is associated with weight gain. [41] In our experience, a typical clinical scenario would be of a young female being abused and turning to food for comfort, with the subsequent weight gain allowing the patient to experience a sense of protection from further abuse. It is very hard to get any such history, or even a hint, during childhood, and it is commonly reported in retrospect (for example in response to research studies or during psychological evaluation for bariatric surgery). Clinicians need to be very sensitive when considering the possibility, without casting suspicions on those families who seek help for child obesity
Medications	A number of commonly prescribed medications can cause weight gain such as atypical antipsychotics, gabapentin, some hypoglycemic agents, amitriptyline, and mirtazapine. [32] Where possible, these should be reviewed and be substituted for medications that fulfil the same purpose, but are either weight neutral or will help to lose weight.

Medications that can promote weight gain and suggestions for alternative treatments

Adapted from Domecq et al, *J Clin Endocrinol Metab* 2015. [32]

Drugs that can promote weight gain	Alternative drugs that can promote weight loss or are weight-neutral
Psychiatric/neurological treatments	
▪ **Antipsychotics:** olanzapine, clozapine, risperidone, ziprasidone ▪ **Antidepressants:** selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants, lithium ▪ **Antiepileptic drugs:** valproate, gabapentin, carbamazepine	▪ **Antipsychotics:** aripiprazole ▪ **Antidepressants:** bupropion, nefazodone. Some SSRIs (eg fluoxetine) can cause weight loss, and tricyclic antidepressants can also occasionally cause anorexia and weight loss ▪ **Antiepileptic drugs:** topiramate, lamotrigine, zonisamide
Diabetes treatments	
▪ Insulin ▪ Sulfonylureas ▪ Thiazolidinediones	▪ Metformin ▪ Acarbose ▪ Dipeptidylpeptidase-4 (DPP-4) inhibitors ▪ Sodium glucose co-transporter 2 (SGLT-2) inhibitors ▪ Glucagon-like peptide-1 (GLP-1) receptor agonists
Other	
▪ Hormonal contraceptives ▪ Corticosteroids	▪ Barrier contraceptive methods

Comorbidity	Screening mechanism
Ischaemic heart disease	•From patient's history: ask about exertional chest pain. If present consider cardiology referral
Hypertension	•From patient's examination
Obstructive sleep apnoea	•From patient's history: ask about excessive snoring, witnessed apnoeic attacks, daytime somnolence, early morning headaches. If relevant measure their neck; a large neck circumference (more than 43 cm) is associated with increased risk. •Use questionnaire: **stopbang.ca** •If the STOPBANG score is 3 to 4, or their history is suggestive of obstructive sleep apnoea in a patient with BMI more than 35 kg/m^2, proceed to sleep studies.
Renal	•Blood tests: electrolytes and creatinine •Urine tests: albumin/creatinine ratio

EB Screen To Assess For Comorbidities (Cont'd

Comorbidity	Screening mechanism
Type 2 diabetes	•Blood test: HbA1c. If HbA1c is not possible then use fasting glucose and consider oral glucose tolerance test
Dyslipidaemia	•Blood test: non-fasting full lipid profile in first instance; fasting as required afterwards
Liver disease	•Blood test: liver function tests. •Blood test: use FIB-4 scoring for liver fibrosis, especially in high risk patients (i.e. those with type 2 diabetes) and review platelet count (thrombocytopenia suggests portal hypertension)
Anxiety and depression	•From patient's history •Use validated questionnaires, eg GAD-7 and PHQ-9

Assessment of Children

- Endocrine causes
- Mental health factors
- Congenital syndromes: Fragile X, Prader Willi, Bardet-Biedl, Albright's hereditary osteodystrophy
- **BMI** (adjusted for age and gender)
- Signs of neuro-developmental delay, learning difficulties, dysmorphic features, and short stature.
- Measure BP (adjust for age and size)
- Check urine for glucose and protein

Remember that in children, hormonal and syndromic causes of obesity are associated with **short stature** (relative to parental heights) or poor growth in height, whereas nutritional causes of obesity promote tall stature

NICE Guidance on Exercise & Physical Activity 2014

All adults:

- Be physically active every day.
- Maintain strength in the major muscle groups.
- >=150 min mod intensity activity/week.

Obesity prevention:

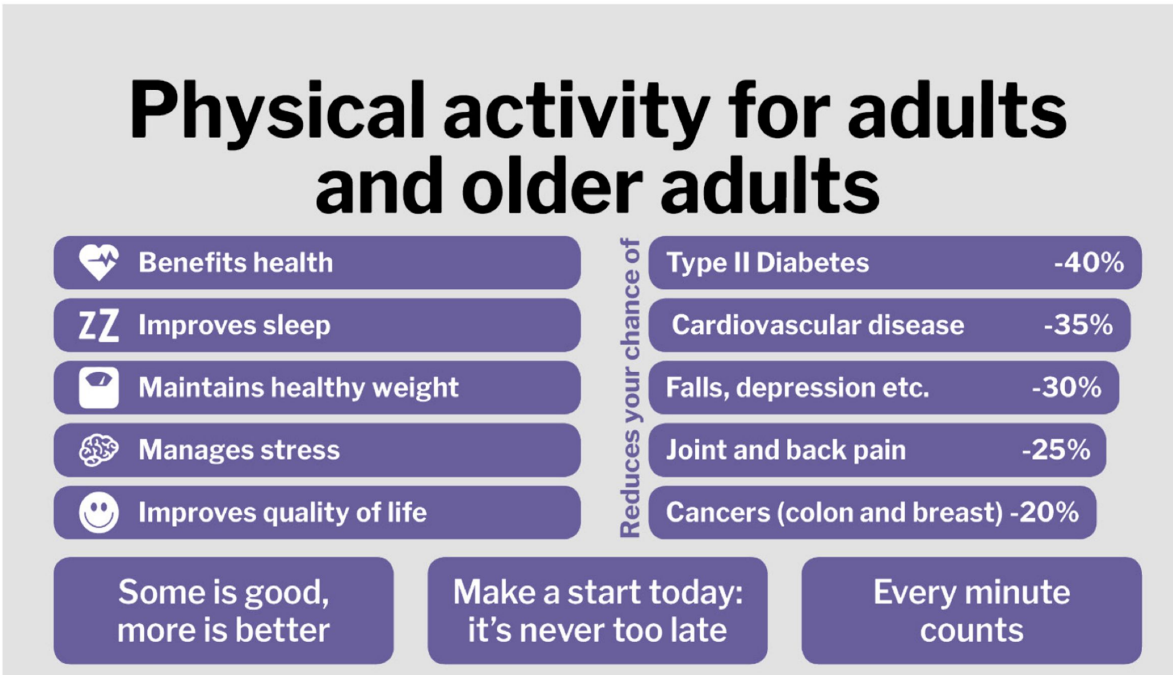
- Do 45 to 60 min of mod intensity activity a day, *particularly if they do not reduce their energy intake*

Obese & lost weight

- May need to do 60 to 90 min of activity a day to avoid regaining weight.

Recommended activity for maintenance of ideal weight:

- Activities that can be incorporated into everyday life such as brisk walking, gardening, or cycling
- Supervised exercise programmes
- Other activities such as swimming, aiming to walk a certain number of steps each day, or climbing stairs.
- It is important to stress that activity levels can be increased at no cost to the patient.



Nutrition Advice: NICE GUIDANCE 2014

-Total energy intake should be less than energy expenditure.

-PHCP refer patients to local weight management services.

-**For sustainable weight loss:**

-Diets that have a 600 kcal/day deficit (contain 600 kcal fewer than the person needs to stay the same weight).

-Diets that reduce calories by lowering the fat content (low-fat diets).

-Expert support and intensive follow-up.

-Dietary changes should be tailored to food preferences.

-Encourage patients to improve their diet even if they do not lose weight.

-Patients have to be ready to make lifestyle changes.

What are the main options for medication in adults who have obesity?

ORLISTAT

-It must be taken with a **nutritionally balanced, low fat diet,** containing **approx 30% calories from fat.**

-The diet should **be rich in fruit and vegetables,** with the daily intake of fat, carbohydrate, and protein distributed **over three main meals.**

-The recommended dose of orlistat is one **120 mg capsule three times per day**, taken with water immediately before, during, or up to one hour after each main meal.

-If a meal is missed or contains no fat, the dose of orlistat should be omitted.

-If your patient fails to follow the dietary advice it means they are at increased risk of developing gastrointestinal symptoms.

-Orlistat is recommended for patients to lose weight if they have:

-A BMI of **28 kg/m^2** or more with **associated risk factors**

-A BMI of **30 kg/m^2 or more.**

-Orlistat therapy should be continued **beyond three months** only if the person has lost at least **5%** of their initial body weight after starting the drug treatment.

LIRAGLUTIDE

- is a glucagon-like peptide-1 (GLP-1) receptor agonist.
- It can only be prescribed in **secondary care** in a specialist weight management service
- NICE guidance: As an option for adults who have a **BMI of at least 35 kg/m^2** (or 32.5 kg/m^2 for members of minority ethnic groups) with **non-diabetic hyperglycaemia and a high risk of cardiovascular disease.**
- It must be prescribed alongside a reduced calorie diet and increased physical activity.

BARIATRIC SURGERY

- Bariatric surgery is an important tool to help people lose weight and maintain weight loss.
- Not all patients are suitable for bariatric surgery, either due to medical, surgical, or psychological concerns.
- All people referred for bariatric surgery must be ready to commit to long term follow-up.
- Bariatric surgery is a treatment option for an adult according to NICE if:
  - They have a **BMI of 40 kg/m^2 or more.** It is the option of choice for adults with a BMI of more than 50 kg/m^2 when other interventions have not been effective
  - They have a BMI **between 35 kg/m^2 and 40 kg/m^2** and also other serious disease (for example, **type 2 diabetes or hypertension**) that could be improved if they lost weight.

Types of Bariatric Surgery Procedures:

(A) Horizontal=gastroplasty

(B) vertical= banded gastroplasty

(C) Roux-en-Y=gastric bypass is the gold standard for weight loss although the most common bariatric surgery nowadays is sleeve gastrectomy

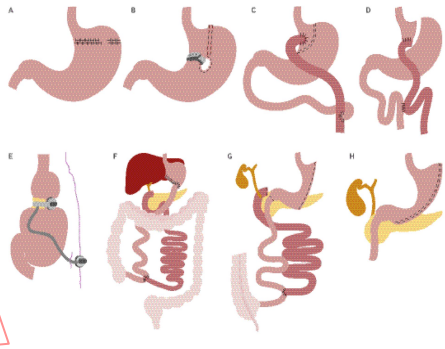
D) transected Roux-en-Y=gastric bypass

(E) laparoscopic=adjustable gastric band

(F)biliopancreatic diversion

(G) Biliopancreatic diversion with duodenal switch

(H) vertical sleeve gastrectomy



What kinds of complications or side effects of bariatric surgery should I look out for?

Complications of bariatric surgery can present:

- As a **direct** consequence of the surgery, for example surgical adhesions or internal herniation
- As an **indirect** consequence, for example nutritional deficiencies or conditions caused by weight loss.
- Dumping, Postprandial hypoglycemia, Weight loss can precipitate gout and gallstones, Calcium oxalate renal stones, Some of the malabsorptive procedures have blind ending loops that may lead to bacterial overgrowth.

What nutritional deficiencies may occur post-bariatric surgery?

Nutrient	Details
Vitamin D	Calcium and vitamin D deficiency may occur after **all types** of bariatric surgery. Regular bone density measurements are recommended every two to five years in patients.
Iron	**Iron deficiency is common**. Prophylactic iron supplementation is recommended in all premenopausal women, and iron-deficient postmenopausal women and men.
Vitamin B12	Vitamin B12 deficiency is likely to occur at some stage in procedures where there is **exclusion of the lower part of the stomach**, which is required for production of intrinsic factor. However, it may occur with other procedures such as **gastric banding** if there is a low intake of meat or dairy products. To prevent vitamin B12 deficiency most guidelines suggest giving vitamin B12 prophylactically.
Folate	As patients are advised to take a multivitamin supplement, it is rare to see folate deficiency. However, higher doses and specific supplements will be required in pregnancy for the avoidance of neural tube defects.
Thiamine	Consider thiamine deficiency in patients with intractable vomiting, and in those with unexplained cardiological or neurological symptoms. There should be a low index of suspicion for this condition as it is easily overlooked, easily treated, and if untreated can result in severe and irreversible consequences.
Other	Other deficiencies may occur, especially with the more malabsorptive procedures (including RYGB, biliopancreatic diversion, or duodenal switch). These can include Vitamin A, Vitamin K, selenium, zinc, and copper. These are typically more likely to occur if patients are not compliant in taking complete multivitamin and mineral preparations.

Questions

1. 44-year-old man attends your PC clinic with a BMI of 44 kg/m² and a weight of 130 kg. He complains of being tired all the time and being sleepy in the day.
Which one of the following comorbidities would you particularly ask about when taking his history?
A. Anxiety.
B. Type 2 Diabetes.
C. Liver disease.
D. Obstructive sleep apnea.

2. A 7-year-old boy presents with his parents to your primary care clinic with concerns that there may be a possible underlying medical cause for his rapid gain in weight over the previous 18 months. You assess him to see whether or not he needs referral to secondary care.
Which one of the following features is the most informative in addressing this question?
A.A history of school refusal.
B. Poor growth in height.
C. A family history of type 2 diabetes
D.Parents' weight.

Answers:
1.D
2.B