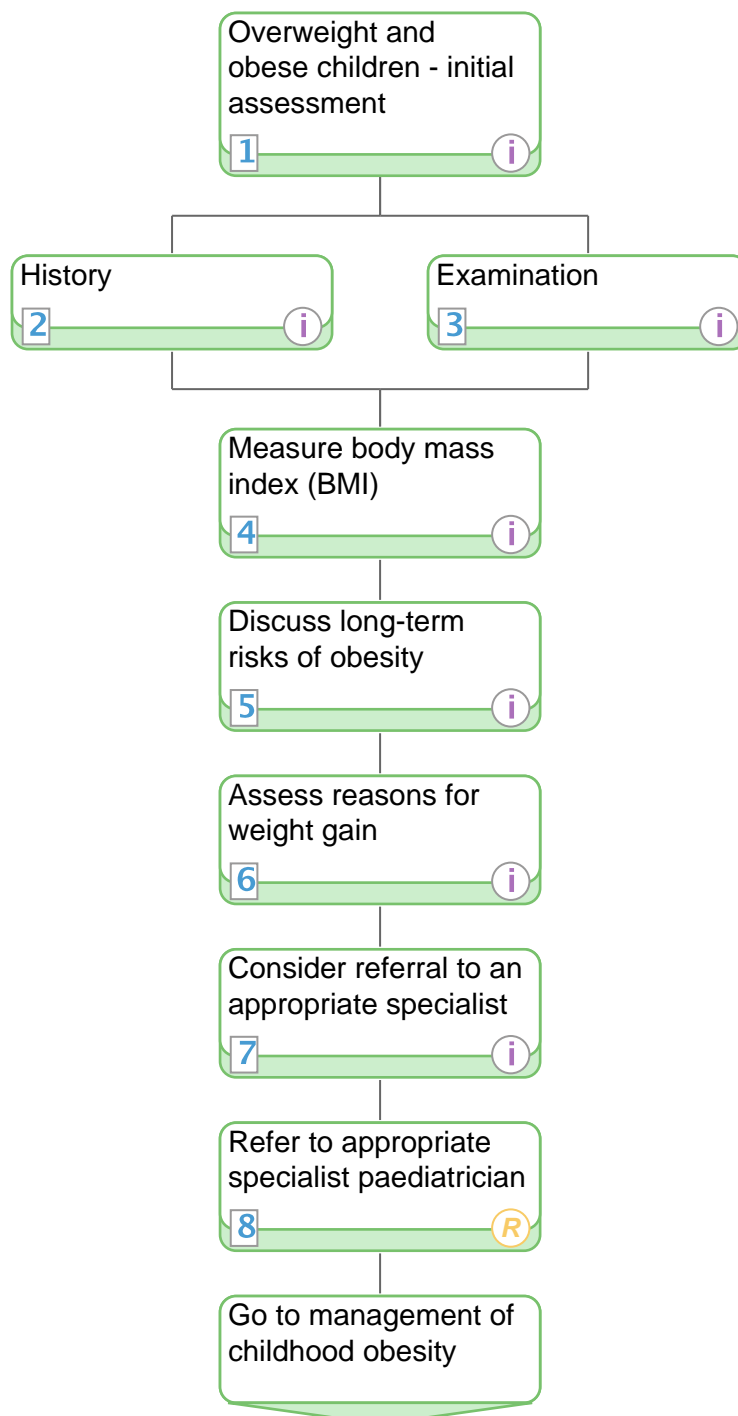
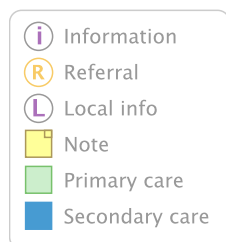


# Overweight and obese children - initial assessment

Paediatrics > More topics > Obesity in children



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Paediatrics > More topics > Obesity in children

## 1 Overweight and obese children - initial assessment

Quick info:

Scope:

- this pathway covers the management of obesity in children and young people (less than age 18 years)
- for adult obesity see 'Obesity in adults' pathway

Definition:

- obesity is the excessive accumulation of fat in the body which may be detrimental to health
- the definition of obesity may vary for different ethnicities
- body mass index ([BMI](#)) = weight/height<sup>2</sup> (kg/m<sup>2</sup>)
- there is no widely accepted consensus on the BMI cut off level that determines overweight or obesity in children
- age and gender specific BMI reference charts (1990) should be used and action is recommended when the child reaches or exceeds:
  - the 91st centile – tailored clinical intervention depending on the needs of the individual child and family
  - the 98th centile – assessment of comorbidity

Incidence and prevalence:

- an estimated 22 million children worldwide are obese
- the incidence of obesity in children is increasing
- 13.7% of children aged 2-10 years were obese (95th centile or over on BMI growth charts) in England (2003)
- 27.7% of children age 2-10 years are overweight, including obese, (85th centile or over of BMI growth charts) in England (2003)
- the UK government aims to half the annual rise in obesity in children less than age 11 years by 2010

Risk factors:

- family history, parental obesity in particular
- television viewing (especially more than 5 hours/day)
- lack of physical activity
- poor parental dietary habits
- some ethnicities
- high birth weight
- lower socio-economic status
- history of treatment for acute lymphocytic leukaemia

References:

CDC: Centre for Disease Control. Obesity still a major problem, new data show. CDC; 2004.

WHO: World Health Organisation. Chronic disease information sheets: obesity and overweight. WHO; 2005 [accessed 02 September 2005].

HSE: Department of Health. Obesity among children under 11. London: HSE; 2005.

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006.

## 2 History

Quick info:

Include both a detailed history and developmental assessment.

History:

- ask about presence of any symptoms
- past medical history
- current medications, such as:
  - steroids
  - diabetic medications
  - antipsychotics
  - antidepressants
- family history
- psychosocial history, including eating disorders
- history of substance abuse
- home, social and school environment, eg. ask about any bullying or teasing over weight
- developmental delay or intellectual disability – may suggest an underlying medical cause

Assess for associated and complicating features, such as:

- heat intolerance

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- exertional dyspnoea
- snoring and sleep apnoea
- cardiovascular disease
- diabetes
- hypertension
- dyslipidaemia
- orthopaedic problems
- sleep apnoea
- hypertension
- benign intracranial hypertension (headache, papilloedema)
- polycystic ovarian syndrome (hirsutism, menstrual irregularity)
- serious psychological problems

## References:

Scottish Intercollegiate Guidelines Network (SIGN). Management of obesity in children and young people. A national clinical guideline. Edinburgh: SIGN; 2003. (SIGN publication; no. 69).

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Evaluation and treatment of childhood obesity. Austin, TX: University of Texas at Austin, School of Nursing; 2004.

NHMRC. Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents. Canberra: NHMRC; 2003.

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006

## 3 Examination

### Quick info:

Include both a detailed history and developmental assessment.

### Physical assessment:

- measure height in metres
- measure weight in kilograms
- normal paediatric values for blood pressure (BP), heart rate (HR) and respiratory rate (RR) are:
  - age 2-5 years
    - HR 95-140beats/minute
    - RR 25-30breaths/minute
    - systolic BP 80-100mmHg
  - age 5-12 years
    - HR 80-120beats/minute
    - RR 20-25breaths/minute
    - systolic BP 90-110mmHg
  - older than age 12 years
    - HR 60-100beats/minute
    - RR 15-20breaths/minute
    - systolic BP 100-120mmHg

### Assess for features suggestive of specific underlying medical cause:

- endocrine causes, such as:
  - hypogonadism
  - hypothyroidism
- growth hormone deficiency:
  - infantile facies
- Cushing's syndrome:
  - central obesity
  - reduced muscle bulk
  - moon face
  - skin thinning
  - striae
  - acne
  - hirsutism
  - high blood pressure
- genetic causes, such as:
  - Bardet-Biedl syndrome:

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- obesity
- polydactyly
- learning disabilities
- hypogonadism
- pigmentary retinopathy
- Cohen's syndrome:
  - central obesity with slender arms and legs
  - low muscle tone
  - learning disabilities
  - abnormalities of the head, face, hands and feet
- Prader-Willi syndrome:
  - excessive appetite
  - low muscle tone
  - immature physical development
  - learning disabilities
- psychological causes, eg. depression

## References:

Scottish Intercollegiate Guidelines Network (SIGN). Management of obesity in children and young people. A national clinical guideline. Edinburgh: SIGN; 2003. (SIGN publication; no. 69).

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Evaluation and treatment of childhood obesity. Austin, TX: University of Texas at Austin, School of Nursing; 2004.

NHMRC. Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents. Canberra: NHMRC; 2003.

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006

## 4 Measure body mass index (BMI)

### Quick info:

- definition of obesity may differ from country to country
- body mass index ([BMI](#)) = weight/height<sup>2</sup> (kg/m<sup>2</sup>)
- there is no widely accepted consensus on the BMI cut off level that determine overweight or obesity in children
- age and gender specific BMI reference charts (1990) should be used and action is recommended when the child reaches or exceeds:
  - the 91st centile – tailored clinical intervention depending on the needs of the individual child and family
  - the 98th centile – assessment of comorbidity
- be careful when interpreting a BMI because it is not a direct measure of adiposity
- waist circumference is not recommended as a routine measure for children but may be used to give additional information on the risk of developing other long-term health problems

### References:

Scottish Intercollegiate Guidelines Network (SIGN). Management of obesity in children and young people. A national clinical guideline. Edinburgh: SIGN; 2003. (SIGN publication; no. 69).

NHMRC. Clinical Practice Guidelines for the Management of Overweight and Obesity in Children and Adolescents. Canberra: NHMRC; 2003.

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006.

## 5 Discuss long-term risks of obesity

### Quick info:

- children who are overweight or obese have a high chance of being obese as adults, with increased risk of diseases associated with obesity in adult life, such as:
  - coronary heart disease
  - type 2 diabetes
  - osteoarthritis; and
  - some cancers
- surprise, anger, denial or disbelief may be expressed when obesity is discussed with a family
- explain that 'overweight' and 'obese' are clinical terms with health implications, not an issue of looks

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- assess for underlying medical causes and associated features as detailed in the nodes below

Reference:

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006

## 6 Assess reasons for weight gain

Quick info:

- to maintain a healthy weight a child needs to be in 'energy balance'
- weight gain occurs if energy intake (from food) is greater than energy output employed in everyday activities
- weight gain usually occurs gradually, often parents and children do not notice this happening
- many accept weight gain as inevitable but the main causes are a tendency to be inactive and poor diet
- assess the following:
  - the child and parent's view of the child's weight
  - symptoms
  - consider the possible reasons for weight gain
  - eating patterns and daily activity levels
  - explore any detrimental beliefs about eating, physical activity and weight gain
  - willingness and motivation to change
  - any previous attempts at weight loss and how successful these were
  - comorbidities (such as hypertension, hyperinsulinaemia, dyslipidaemia, type 2 diabetes, psychosocial dysfunction and exacerbation of conditions such as asthma)
  - risk factors and psychosocial distress, such as low self esteem, teasing and bullying
  - family history of overweight and obesity and comorbidities
  - environmental, social and family factors that may contribute to overweight and obesity and the success of treatment
  - growth and pubertal status

Appreciate that people from certain ethnic and socioeconomic backgrounds may have different beliefs about weight management and perceptions about a healthy weight

Reference:

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006

## 7 Consider referral to an appropriate specialist

Quick info:

Consider paediatric or specialist referral for overweight or obese children with:

- BMI over 98th centile (for further assessment of underlying comorbidity);
- significant associated complicating features or comorbidity, eg. sleep apnoea, orthopaedic problems; or
- complex needs, eg. learning difficulties

References:

Scottish Intercollegiate Guidelines Network (SIGN). Management of obesity in children and young people. A national clinical guideline. Edinburgh: SIGN; 2003. (SIGN publication; no. 69).

NICE. Obesity: guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43. London: National Institute for Health and Clinical Excellence; 2006.

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# Overweight and obese children - initial assessment

Paediatrics > More topics > Obesity in children

## Key Dates

Due for review: 28-Feb-2009

Last reviewed: 31-Jul-2008, by International

Updated: 30-Oct-2008

## Accreditations

The editorial process used to create this pathway is accredited by:

NHS Institute for Innovation and Improvement:

Accreditation attained: 28-Feb-2007

Due for review: 28-Feb-2009

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## Certifications

The evidence for this pathway is certified by:

BMJ Publishing Group Ltd:

Certification attained: 30-Apr-2008

Due for review: 30-Apr-2009

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## Evidence summary for Overweight and obese children - initial assessment

The pathway is based on our interpretation of the following guidelines (5, 7, 11). All of these guidelines have been assessed for quality and prioritised for inclusion based on their methodological quality. All intervention nodes (i.e. those concerning therapy and therapeutic advice) have been graded for the quality of the evidence underlying them. Supporting resources for key non-interventional nodes have also been listed, but non-interventional nodes have not been graded. This pathway has undergone external peer review.

Update: This pathway was updated in February 2007 based on the NICE guidance (11).

Search date: Aug-2005

## Evidence grades:

- 1** Intervention node supported by level 1 guidelines or systematic reviews
- 2** Intervention node supported by level 2 guidelines
- E** Intervention node based on expert clinical opinion
- U** Non-intervention node, not graded

## Evidence grading:

### Graded node titles that appear on this page

Overweight and obese children - initial assessment

History

Measure body mass index (BMI)

Discuss long-term risks of obesity

Assess reasons for weight gain

Consider referral to an appropriate specialist

Examination

### Evidence grade

**U**

**U**

**U**

**U**

**U**

**U**

**U**

### Reference IDs

8, 9, 10, 11

5, 6, 7, 11

5, 7, 11

11

11

5, 11

5, 6, 7, 11

## References

This is a list of all the references that have passed critical appraisal for use in the pathway Obesity in children

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## ID Reference

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<http://mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD001872/frame.html>
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[jsessionid=LxcRMOBzCfQcP3g9L21prvx6fRq0c7TjBNFJqwSg7Tpj144qsBt!31132260!181195628!80911-1](http://www.ms-se.com/pt/re/msse/abstract.00005768-199911001-00011.htm)
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- 6 University of Texas at Austin School of Nursing Family Nurse Practitioner Program. Evaluation and treatment of childhood obesity. Austin, TX: University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program; 2004.  
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