

Prevention and management of childhood obesity

ANGELA DOWDEN

Obesity often starts in childhood and if not tackled early, can lead to many health problems in adulthood. This article discusses the measures being taken to confront the problem of obesity in children in the UK today, and what primary care practitioners can do to help.

Obesity in children has been described as a ticking time bomb, yet full details of the government's childhood obesity strategy are yet to be announced after repeated delays, and the strategy is now not expected until later this year. In its absence, where are we currently with the prevention and management of childhood obesity, and in particular what role can primary care professionals play?

The statistics are worrying, to say the least: In 2014–15 in England, over a fifth (21.9 per cent) of Reception year children (aged four to five years) assessed through the National Child Measurement Programme¹ were either overweight or obese. For children in Year 6 (aged 10 to 11 years), this proportion increased to a third (33.2 per cent).

However, there may be reason to feel modestly optimistic, as there is a sign of a plateauing in the trend. Across the 2–15 year age group, obesity peaked at 19 per cent among boys in 2004 and 19 per cent in girls a year later. Levels of obesity have been slightly lower since, though girls appear to be doing better than boys. The latest Health Survey for England data show that in 2014, obesity among boys aged 2–15 years reached



the peak level of 19 per cent again, whereas for girls obesity was at a lower level, at 16 per cent.²

But perhaps the biggest concern – and a good reason to support the argument that more resources should be focused on obesity prevention – is that once a weight issue has presented itself, it is likely to progress. National Child Measurement Programme 2014–2015 data show that the percentage of children who were obese in Year 6 (19.1 per cent) was more than double that of children in Reception (9.1 per cent).¹ Up to 79 per cent of children who are obese in their teens are likely to remain obese as adults.

Child obesity that persists into maturity can lead to health problems in adulthood such as type 2 diabetes, heart disease and certain cancers. Various diseases or conditions may also emerge in obese children while they are still young – for example type 2 diabetes, a condition previously found almost entirely in adults, is now being diagnosed in children and young people. Being an overweight child

can also impact on self-esteem and quality of life, and cause depression.

Who is responsible?

The question of why childhood obesity has increased so much yields a range of different views, and the answer seems to be: “it’s complicated”. Any or all of a list that includes government policy, parents, and the food and drink industry, could be argued to be responsible, but a Department of Health spokesperson tells *Prescriber* that “it isn’t helpful to finger point.”

In an official statement strategy, the department agreed that it is “shocking” that one in three children are leaving primary school overweight or obese and stated that: “Our childhood obesity strategy will look at everything, including sugar, that contributes to a child becoming overweight and obese. It will also set out what more can be done by all sides.”

A much-debated sugar tax has already been announced by the Chancellor, George Osborne, in the 2016 Budget, but is not due to be implemented until 2018. The new levy on soft drinks with total sugar content above 5g per 100ml will be paid by big drinks companies and will raise an estimated £520m a year – to be used for increasing the funding of sport in primary schools.

Public health researchers are largely in favour of the sugar tax as a means to help dial down childhood obesity, with the Royal Society for Public Health calling the announcement “a real step in the right direction”. Public Health England’s report *Sugar Reduction: The Evidence for Action*, published in October 2015,³ recommended the sugar tax as just one of eight suggestions to help the nation as a whole achieve the new lower recommended daily intake of sugar (5 per cent of total energy, recently down from 10 per cent). Public Health England says that reaching this new sugar intake goal will save lives from weight-related diseases, cut tooth decay, and save the NHS £576 million a year.

However, most experts agree that to tackle obesity in both children and adults, we must do much more than focus on sugar. “It’s right that a tax on sugary drinks could be part of a package

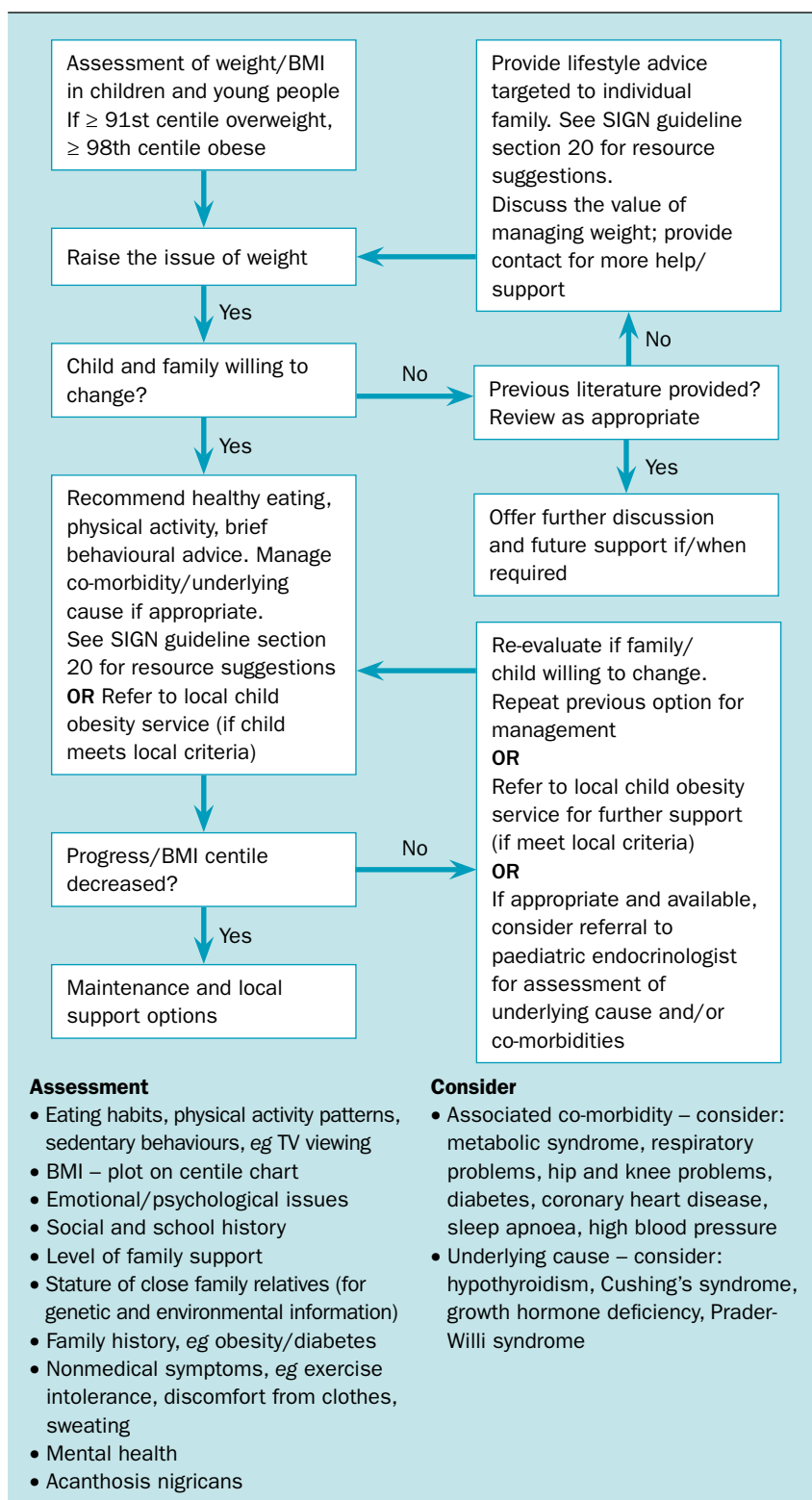


Figure 1. Suggested primary care pathway for children and young people with overweight and obesity. This figure is reproduced from SIGN 115 by kind permission of the Scottish Intercollegiate Guidelines Network¹⁰

of measures that could help lessen sugar intake, but plentiful evidence still points towards excess fat as a major contributor to excess calories – and more so than sugar,” says Naveed Satar, professor of metabolic medicine at Glasgow University. “Equally, ready access to cheap calorific foods is pervasive, and tackling such issues will be difficult.

“Cutting excess calories requires a broader approach and will take many years, but we do have to start somewhere, and ultimately the government needs to take the lead.”

Indeed, diet, sugar and calories are only part of the story. While it is indisputable that obesity occurs when energy balance is out of sync, Public Health England points out that “there are many complex behavioural and societal factors that combine to contribute to the causes of obesity”. The 2007 *Foresight* report⁴ presented an obesity system map with energy balance at its centre, around which over 100 variables directly or indirectly influence energy balance.

The challenges facing GPs

In theory, family doctors are in a unique position to help tackle the child obesity problem, given that over 98 per cent of children in the UK are registered with a GP,⁵ and general practice is where they most often come into contact with medical services.

However, a population-based cohort study that looked at the UK primary health electronic record of 91,413 overweight and obese patients,⁶ found that 90 per cent of overweight patients had no weight management intervention recorded. Intervention was more frequent among obese patients, but 59 per cent of patients with morbid obesity still had no intervention recorded.

This was in adults, but Professor David Haslam, a GP and chair of the National Obesity Forum charity believes that the situation is likely to be just as bad in children.

“In fact, I would argue that there could be even less motivation for GPs to try to tackle child than adult obesity, because they are not incentivised to do so through the QOF [Quality and Outcomes Framework].

- The majority of children do not eat the recommended minimum of five portions of a variety of fruit and vegetables per day: among children aged 11–18 years, 10.1 per cent of boys and 7.5 per cent of girls meet the five-a-day recommendation
- Children aged 11–18 years consume an average of 2.9 portions of fruit and vegetables per day; significantly lower than the recommended minimum
- Among children aged 5–15 years, those aged 11–12 years consume the smallest number of portions of fruit and vegetables per day (2.3 portions for boys and 2.8 portions for girls)
- Children living in households with the highest incomes consume the largest number of portions of fruit and vegetables per day (3.9 portions for girls and 3.5 portions for boys)
- Children's consumption of added or processed sugars (nonmilk extrinsic sugars) significantly exceeds the maximum recommended level
- Children's consumption of saturated fat as part of their daily food energy significantly exceeds the maximum recommended level of 11 per cent of total food energy; younger children aged 4–10 years obtain significantly more of their food energy from saturated fat than older children aged 11–18 years (13.1 per cent for boys and 13.3 per cent for girls aged 4–10 years, compared with 12.7 per cent for boys and 12.4 per cent for girls aged 11–18 years)

Table 1. What do children eat? (Public Health England data)¹³

“The QOF is a voluntary annual reward and incentive programme for all GP surgeries in England, Wales, Scotland and Northern Ireland. It currently has just one indicator for obesity, rewarding a paltry eight QOF points for GPs who make a register of the number of obese adults that have visited their practice. This is bad enough (given there are many more indicators and points available for tackling smoking, for example), but even worse when you consider there are no incentives for obesity in children under 18 years at all.

“The other problem is that there is no coherent plan for tackling childhood obesity. Measuring childhood obesity through the National Child Measurement Programme is stumbling along, but with no sequel suggesting how those identified are actually managed.”

Professor Haslam adds that while there is good evidence from worldwide child obesity management programmes, such as MEND (Mind, Exercise, Nutrition... Do it!), EPODE (Ensemble Prévenons l'Obésité Des Enfants – Together Let's Prevent Childhood Obesity) and the Carnegie Weight Management programme, that the knowledge and services to treat obesity in childhood exist, the resources and political will are somewhat lacking.

“In the days when the NHS provided MEND in widespread fashion, it was eas-

ier to engage families,” says Professor Haslam. “Now that public health has been devolved to local authorities, it's more hit and miss as to what services are commissioned locally. Local public health budgets have also been slashed – the £2.8 billion originally earmarked for councils to spend in 2015–16 has been cut by 7 per cent.”

Public Health England's 2015 *National Mapping of Weight Management Services* report⁷ found that tier 2 (community-based) lifestyle weight management services for children and young people were reported as available in 85 of 152 local authorities, with a geographical coverage of 56 per cent. Coverage could be higher than this because some authorities did not respond or responded incompletely.

Guidelines

Two NICE guidelines cover best practice in preventing and treating obesity in children and young people – these are the 2014 guideline *Obesity: Identification, Assessment and Management* (CG189),⁸ and the 2015 guideline *Preventing Excess Weight Gain* (NG7).⁹ Both are replacements for sections of an earlier 2006 obesity guideline, but make only minor changes. A third guideline – the 2010 Scottish Intercollegiate Guideline Networks (SIGN) guideline 115

*Management of Obesity*¹⁰ is listed on the RCGP's obesity resource list and features a particularly helpful flowchart illustrating a primary care pathway for children and young people who are overweight or obese (see Figure 1)

In addition, the 2015 NICE quality standard *Obesity in Children and Young People: Prevention and Lifestyle Weight Management Programmes* (QS94)¹¹ sets out what organisations such as local authorities and the NHS should do to help prevent children and young people from becoming overweight or obese, while the 2013 NICE public health guideline *Weight Management: Lifestyle Services for Overweight or Obese Children and Young People* (PH47)¹² is aimed at commissioners of community-based services that help overweight or obese children manage their weight.

Correct measurement

Crucial in making any objective assessment of a child's weight is using an approved tool such as the Royal College of Paediatrics and Child Health (RCPCH) age- and sex-appropriate growth charts, or the NHS Choice online BMI calculator (<http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx>), which calculates a child's BMI centile as recommended, and indicates whether it is in the healthy range. Adult BMI thresholds should not be used, nor is visual judgement acceptable as it tends to be unreliable. Waist circumference is not recommended as a routine measure in children and should only be used to give additional information on the risk of developing other long-term health problems.

According to NICE guideline CG189,⁸ tailored clinical intervention should be considered for children with a BMI at or above the 91st centile, depending on the needs of the individual child and family, while assessment for co-morbidities such as hypertension, hyperinsulinaemia, dyslipidaemia, type 2 diabetes and psychosocial dysfunction should be considered for children with a BMI at or above the 98th centile.

The National Child Measurement Service also includes the following four pointers for GPs:

- Most parents believe their child is a

- Rollnick S, et al Motivational interviewing in the overweight and obese: <http://www.bmj.com/content/340/bmj.c1900%20>
- Healthy eating and fitness information for the public: Change4Life: www.nhs.uk/change4life
- Free British Heart Foundation game and learning tool to help young people think more about food and activity: www.yoobot.co.uk
- Free BMJ e-learning session (with CPD points) on the causes and consequences of child obesity and how to treat it: earning.bmj.com/learning/module-intro/childhood-obesity-diagnosis-management-prevention.html?moduleId=10008188
- Official UK 2–18 years child growth charts available for download, along with training materials to support use of the charts: www.rcpch.ac.uk/child-health/research-projects/uk-who-growth-charts/uk-growth-chart-resources-2-18-years/uk-2-18-yea
- NHS BMI calculator (calculates a child's BMI centile in line with the approach used by the National Child Measurement Programme, and that recommended by NICE and the RCPCH): www.nhs.uk/bmi
- The relevant NICE guidelines relating to obesity (CG189, NG7, QS94, PH47): www.nice.org.uk/guidance

Table 2. Online resources for primary care practitioners

healthy weight, even if they are overweight. They may need help to understand that children are unlikely to “grow out of puppy fat” without a change in current eating and exercise patterns.

- Motivational interviewing can be an effective approach to help families choose and achieve behaviour change goals.
- Some signposting and referral information, including local weight management and support services and child weight training resources, is essential. Although parents and children may be sensitive about weight, many families are keen to find out what help and support is available.
- Follow-up is also essential. Overweight and obesity are commonly chronic relapsing conditions that require long-term attention.

Making an impact: diet, activity, drugs?

For data on the current state of children's diets according to Public Health England, see Table 1.¹³ NICE guideline NG7 suggests the following dietary measures for obesity prevention, applicable to both adults and children:⁹

- Reducing the overall energy density of the diet (for example, by reducing how often fried foods, biscuits, savoury snacks and confectionery are eaten; substituting energy-dense items with fruits, vegetables or water; choosing smaller

portions of energy-dense foods and limiting intake of ‘fast’ or ‘takeaway’ foods).

- Reducing the consumption of sugary drinks and swapping them for water, coffee, tea or ‘diet’ drinks.
- Reducing total fat intake by choosing lower fat options for the main sources of fat in the diet, reducing portion size or frequency of consumption of foods high in fat (such as meat and meat products, milk and dairy products, fats and oils, and baked foods such as pizza, biscuits and cakes).
- Eating breakfast but being careful not to increase overall daily energy intake, eg opting for unsweetened wholegrain cereals or bread, lower fat milk and a portion of fruit.
- Increasing the proportion of high-fibre or wholegrain foods eaten.
- Limiting intake of meat and meat products – no more than 70g of red and processed meat a day on average.

Physical activity steps recommended by NICE guideline NG7 for obesity prevention (both children and adults) include:⁹

- Increasing regular walking, particularly brisk walking, or cycling as a form of active travel, eg to school or other local destinations.
- Increasing activities during leisure time and breaks (including some periods of moderate-to-vigorous physical activity). This could include any form of physical

activity, sport or exercise such as walking, cycling, swimming, dancing or gardening.

- Increasing activity as part of daily routines (such as taking regular breaks from sitting, and taking the stairs instead of the lift).
- Reducing TV viewing and other screen time, eg setting a limit to watch TV for no more than two hours a day.

Extra advice specifically for parents and carers includes eating meals with children and young people and encouraging young people to get enough sleep, as insufficient sleep may increase the risk of excess weight gain in children and young people.

NICE guideline CG189 is clear that drug treatment (using the gastrointestinal lipase inhibitor orlistat) for obesity should be a last resort in children,⁸ only to be considered if both tier 2 (community) and tier 3 (specialist) obesity services have produced no results and a child is still severely obese with comorbidities.

On the rare occasions that orlistat is given, it must be in a specialist paediatric setting, by multidisciplinary teams with experience of prescribing in this age group. A six to 12-month trial only is recommended, with regular review to assess effectiveness, adverse effects and adherence. Needless to say, bariatric surgery is not recommended in children apart from in the most exceptional circumstances and then only if the child has reached, or has almost reached, physiological maturity.

Future research

A pledge in January by the National Institute for Health Research (NIHR;

the research arm of the NHS) that it plans to invest millions of pounds into research addressing the prevention and treatment of overweight and obesity is being heralded as a welcome boost to the fight against obesity over the next few years.

"We, at Public Health England, are very excited that the NIHR will be funding practical and relevant research to help underpin the prevention and management of obesity locally and nationally," says Professor Kevin Fenton, PHE's National Director of Health and Wellbeing.

The NIHR has asked researchers to submit applications covering a broad spectrum of research that will evaluate interventions and services to determine what practices are cost-effective in preventing and treating obesity in both children and adults.

Chief medical officer Dame Sally Davies' 2014 annual report (released in December 2015)¹⁴ highlights obesity in women as another national priority that could have an impact on child obesity going forward. The theory is that a pregnant woman's health (including whether she is obese) affects the conditions inside the womb, which in turn can have lifelong consequences for the health of the child, including their risk of obesity or type 2 diabetes.

In short, it seems that the impact of child obesity can start even before birth and if not tackled effectively, can persist long into adulthood, with all the associated health costs that this can bring.

References

1. Health and Social Care Information Centre. *National Child Measurement Programme – England, 2014–15*. 26 November 2015.

2. Health and Social Care Information Centre. *Health Survey for England – 2014*. 16 December 2015.
3. Public Health England. *Sugar reduction. The evidence for action*. October 2015.
4. Government Office for Science. *Foresight. Tackling obesities: Future choices*. 2nd edn. 17 October 2007.
5. Saxena S, et al. Primary care of children: the unique role of GPs. *Br J Gen Pract* 2012;62(600):340–1.
6. Booth H, et al. Access to weight reduction interventions for overweight and obese patients in UK primary care: population-based cohort study. *BMJ Open* 2015;5:e006642.
7. Public Health England. *National mapping of weight management services*. December 2015. <https://www.gov.uk/government/publications/weight-management-services-national-mapping>
8. NICE. *Obesity: Identification, assessment and management*. CG189. November 2014.
9. NICE. *Preventing excess weight gain*. NG7. March 2015.
10. Scottish Intercollegiate Guidelines Network (SIGN). *Management of obesity. A national clinical guideline*. Edinburgh: SIGN, February 2010. SIGN 115. Available from: <http://www.sign.ac.uk>. Cited May 2016.
11. NICE. *Obesity in children and young people: prevention and lifestyle weight management programmes*. QS94. July 2015.
12. NICE. *Weight management: lifestyle services for overweight or obese children and young people*. PH47. October 2013.
13. Public Health England. *Child diet data fact sheet*. December 2015. http://www.noo.org.uk/securefiles/160321_1209/Child-dietfactsheetDec2015.pdf
14. Department of Health. *Chief Medical Officer annual report 2014: Women's health*. 11 December 2015.

Declaration of interests

None to declare.

Angela Dowden is a freelance journalist and registered nutritionist



Share your views

If you have any issues you would like to air with your colleagues or comments on articles published in *Prescriber*, the editor would be pleased to receive them and, if appropriate, publish them on our forum page. Please send your comments to:

The editor, *Prescriber*, The Atrium, Southern Gate, Chichester, West Sussex PO19 8SQ, or e-mail to prescriber@wiley.com