NICE National Institute for Health and Care Excellence

NICE guideline

Weight management: lifestyle services for overweight or obese children and young people

Public health guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline is the basis of QS94.

Overview

This guideline covers lifestyle weight management services for children and young people aged under 18 who are overweight or obese. It advises how to deliver effective weight management programmes that support children and young people to change their lifestyle and manage their weight.

Who is it for?

- Healthcare professionals and other professionals working with children and young people
- Commissioners and providers
- Children, young people and their families and carers
- Members of the public

Introduction: scope and purpose of this guidance

What is this guidance about?

This guidance aims to provide recommendations on lifestyle weight management services for overweight and obese children and young people. The recommendations cover:

- planning services
- commissioning programmes
- core components of lifestyle weight management programmes
- developing a tailored programme plan to meet individual needs
- encouraging adherence
- raising awareness of programmes
- formal referrals to programmes
- providing ongoing support
- programme staff: training, knowledge and skills
- training in how to make programme referrals
- supporting programme staff and those making programme referrals
- monitoring and evaluating programmes.

This guidance does not cover services that focus on preventing obesity (sometimes called universal obesity prevention services or tier 1 services), specialist obesity services (sometimes called tier 3 services) or the use of pharmacological or surgical treatments for obesity (sometimes called tier 4 services). In addition, it does not make recommendations for adults. (See Related NICE guidance for other recommendations that may be relevant to managing obesity among adults, children and young people.)

See About this guidance for details of how the guidance was developed and its current status.

Who is this guidance for?

The recommendations are for commissioners in local authorities and the NHS and providers of community-based services that take a 'lifestyle' approach to helping overweight or obese children and young people manage their weight. They are also for health professionals and people working with children and young people.

Although local terminology varies, these are sometimes called tier 2 services and are just 1 part of a comprehensive approach to preventing and treating obesity.

The guidance may also be of interest to children and young people, their parents, carers, families and other members of the public.

The guidance complements but does not replace NICE guidance on obesity, body mass index and waist circumference among minority ethnic groups, how local communities can prevent obesity, physical activity for children and young people, and weight management in pregnancy. (For further details, see Related NICE guidance.)

1 Recommendations

Background

The Programme Development Group (PDG) considers that the recommendations are likely to be cost effective.

The evidence underpinning the recommendations is listed in The evidence.

See also Supporting evidence for the evidence reviews, economic modelling report, expert papers and commissioned report. For the research recommendations see Recommendations for research and Gaps in the evidence respectively.

The recommendations in this guidance cover lifestyle weight management services for overweight and obese children and young people aged under 18. However, no evidence was identified about the effectiveness of such programmes specifically aimed at children under 6. The absence of such programmes from the recommendations is a result of this lack of evidence and should not be taken as a judgement on whether or not they are effective and cost effective.

Principles of weight management for children and young people

Assessing the body mass index (BMI) of children is more complicated than for adults because it changes as they grow and mature. In addition, growth patterns differ between boys and girls.

Thresholds that take into account a child's age and sex are used to assess whether their BMI is too high or too low. These are usually derived from a reference population, known as a child growth reference, with the data presented in BMI centile charts. In a clinical assessment, a child or young person on or above the 98th centile is classified as obese. A child or young person on or above the 91st centile, but below the 98th centile, is classified as overweight[1].

When monitoring and comparing groups of children and young people BMI z scores may be used. These are a measure of how many standard deviations a child or young person's BMI is above or below the average BMI for their age and gender.

In this guidance, the term BMI centile is used in recommendations that focus on working with

individual children or young people. 'BMI z score' is used in recommendations relating to monitoring and research.

Further information can be found in A simple guide to classifying body mass index in children.

Lifestyle weight management programmes

Many lifestyle weight management programmes aim to maintain the growing child's existing weight in the short term, as they grow taller. This is an appropriate short-term aim, because it will result in an improved BMI over time, and is often described as 'growing into their weight'.

Young people who are overweight or obese and are no longer growing taller will ultimately need to lose weight to improve their BMI. However, preventing further weight gain while they gain the knowledge and skills they need to make lifestyle changes, may be an appropriate short-term aim. These changes then need to become firmly established habits over the long term.

Whose health will benefit?

Children and young people who are overweight or obese.

Recommendation 1 Planning lifestyle weight management services for children and young people

Who should take action?

- Directors of public health and public health teams working on obesity and child health and wellbeing.
- Health and wellbeing boards.
- Local authority commissioners.
- Clinical commissioning groups.
- NHS England.
- Public Health England.
- Children's services.

What action should they take?

- Ensure family-based, multi-component lifestyle weight management services for children and young people are available as part of a community-wide, multi-agency approach to promoting a healthy weight and preventing and managing obesity. These services should contain the core elements described in recommendation 3. They should be provided as part of a locally agreed obesity care or weight management pathway.
- Dedicate long-term resources to support the development, implementation, delivery, promotion, monitoring and evaluation of these services. See recommendation 7 in Obesity: working with local communities (NICE public health guidance 42) and principle 7 in Behaviour change (NICE public health guidance 6).
- Use data from the joint strategic needs assessment and the National Child Measurement Programme to identify local need. See recommendation 1 in Obesity: working with local communities (NICE public health guidance 42).

Recommendation 2 Commissioning lifestyle weight management programmes for children and young people

Who should take action?

- Directors of public health and public health teams working on obesity and child health and wellbeing.
- Health and wellbeing boards.
- Local authority commissioners.
- Clinical commissioning groups.
- NHS England.
- Public Health England.
- Children's services.

What action should they take?

- Identify needs using the joint strategic needs assessment. Use community engagement techniques with local families to identify any barriers and facilitators discouraging or encouraging the uptake and completion of programmes.
- Commission lifestyle weight management services to meet the needs of local children and young people, including those of different ages, different stages of development and from different cultural backgrounds. Services should be in line with the health and wellbeing strategy.
- Consider how best to provide services for overweight or obese children and young people with special needs or disabilities. For example, through specific programmes where these are available. Or by making reasonable adaptations to mainstream programmes (including training staff) and evaluating them. Ensure there is an appropriate interface with specialist obesity services to help those with more complex needs manage their weight.
- Ensure all lifestyle weight management programmes are designed and developed with input from a multidisciplinary team and have taken into account the views of children, young people and their families. The team should include professionals who specialise in children, young people and weight management. These include the following:
  - a state registered dietitian or registered nutritionist
  - a physical activity specialist
  - a behaviour-change expert, such as a health promotion specialist (for physical activity, a sport and exercise psychologist may be appropriate)
  - a health or clinical psychologist, or a child or adolescent psychiatrist, to provide expertise in mental wellbeing
  - a paediatrician or paediatric nurse.
- Ensure programme content is regularly reviewed and updated by the multidisciplinary team.
- Ensure providers can demonstrate that staff are trained to deliver the specific programme commissioned and are experienced in working with children, young people and their families.
- Ensure sufficient resources are dedicated to monitoring and evaluation.

- Ensure there are clearly defined programme objectives, outputs, outcomes and monitoring and evaluation requirements in programme specifications and in contracts. Contracts should also specify any at-risk groups that should be targeted, such as black and minority ethnic groups, or children and young people from low income families or neighbourhoods.
- Ensure key performance indicators are agreed with programme providers, including the proportion of sessions that must be attended to complete the programme (see recommendation 15).
- Ensure the contract or programme specification requires that height and weight are measured and that both BMI and BMI for age and gender (BMI z score) are recorded. All children and young people should be measured at the following times:
  - at recruitment to the programme
  - at completion of the programme
  - 6 months after completing the programme
  - 1 year after completing the programme.

For recommendations for providers see recommendations 3, 5, 10 and 14.

See also recommendation 10 in Obesity: working with local communities (NICE public health guidance 42).

Recommendation 3 Lifestyle weight management programmes: core components

Who should take action?

- Providers of lifestyle weight management programmes.

What action should they take?

- Ensure all lifestyle weight management programmes for overweight and obese children and young people are multi-component. They should focus on:
  - diet and healthy eating habits
  - physical activity
  - reducing the amount of time spent being sedentary
  - strategies for changing the behaviour of the child or young person and all close family members.

- Ensure the following core components, developed with the input of a multidisciplinary team (see recommendation 2) are included:
  - Behaviour-change techniques to increase motivation and confidence in the ability to change. This includes strategies to help the family identify how changes can be implemented and sustained at home.
  - Positive parenting skills training, including problem-solving skills, to support changes in behaviour.
  - An emphasis on the importance of encouraging all family members to eat healthily and to be physically active, regardless of their weight.
  - A tailored plan to meet individual needs, appropriate to the child or young person's age, gender, ethnicity, cultural background, economic and family circumstances, any special needs and how obese or overweight they are. This should include helping them and their family to set goals, monitor progress against them and provide feedback (see recommendation 4).
  - Information and help to master skills in, for example, how to interpret nutritional labelling and how to modify culturally appropriate recipes on a budget.
  - Help to identify opportunities to become less sedentary and to build physical activity into their daily life (for example, by walking to school and through active play).
  - A range of physical activities (such as games, dancing and aerobics) that the children or young people enjoy and that can help them gradually become more active.
  - Information for family members who may not attend the programme itself to explain the programme's aims and objectives and how they can provide support.
  - Ongoing support and follow-up for participants who have completed the programme.

Recommendation 4 Developing a tailored plan to meet individual needs

Who should take action?

- Providers of lifestyle weight management programmes.

What action should they take?

- Assess each child or young person for obesity-associated diseases or conditions (comorbidities). Use a locally approved comorbidities assessment tool, where available. Assessment is particularly important if the child or young person and their family have self-referred to the programme, or have not been assessed by a health professional. Refer them to their GP if any concerns are identified.
- Identify whether the child or young person's mental wellbeing is affected by their weight. For example, whether there are any signs of psychological distress, depression, bulimia, self-harming or other mental health problems related to their weight.
- Identify whether their weight is a consequence of circumstances that have affected their mental wellbeing. (For example, if they have experienced bereavement or have caring responsibilities.)
- If concerns about their mental wellbeing are identified refer the child or young person to their GP for assessment and treatment and, if appropriate, for onward referral to child and adolescent mental health services (CAMHS). (Note: such concerns may be identified at any stage of a weight management programme.)
- Take account of the child or young person's self-esteem, self-perception and any previous attempts to manage their weight. Provide opportunities, in either a group or one-to-one session, for them to talk about any victimisation or distress if they wish. (This includes any history of bullying or teasing.)
- Find out whether the family recognises that their child is overweight or obese and the potential benefits of managing their weight. Discuss the family's history of attempts to manage their weight, and their existing knowledge of, and attitudes towards, food, physical activity and the amount of time spent being sedentary.
- Weigh, measure, determine and record the child or young person's BMI. Offer to do the same for parents, carers and other family members. Measurements should be undertaken by staff who have been trained using standard protocols (see recommendation 11).
- They should use validated, transportable instruments that are regularly calibrated.
- Emphasise that the programme may benefit the whole family. In addition, offer information about local lifestyle weight management services to adult family members who are overweight or obese.

- Encourage children and young people from around the age of 12 (depending on their ability and stage of development) to monitor their eating, physical activity and any sedentary behaviour. For example, encourage them to keep a record of time spent watching television or playing computer games, and what they snack on and when, to identify areas that need addressing. For younger children, parents and carers should monitor these behaviours, with the involvement of the child according to their age and stage of development.

- Work with children from around the age of 12 (depending on their ability and stage of development) to identify situations in which it would be possible for them to eat more healthily or to become less sedentary and more active. For example, this might involve gradually reducing TV viewing at certain times and replacing this with more active pastimes. Work with the parents and carers of younger children to achieve the same.

- Aim to gradually increase the amount of moderate to vigorous-intensity physical activity programme participants do every day. Focus on activities they enjoy and that are easily accessible. This includes activities that can be built into daily life, such as active play, walking or cycling. Aim to achieve the age-specific UK physical activity guidelines.

- Agree dietary changes that are age-appropriate, affordable, culturally sensitive and consistent with healthy eating advice. Ensure nutrient needs for growth and development are met by including healthier choices, in appropriate amounts, from each of the food groups (see NHS Choices Eatwell plate). Changes to diet should take into account the child or young person's likes and dislikes.

- Manage expectations of what can be realistically achieved over the duration of the programme. Small but realistic goals should be mutually agreed with the child or young person and their family. These should relate to goals that they value and that motivate them to attend.

- Work with participants and their families to regularly monitor progress against the goals and provide feedback. Praise progress and achievements and update the goals as the child or young person progresses through the programme. If they do not meet their goals, discuss the possible causes for this and modify them if necessary.

- Stress the importance of maintaining changes, no matter how small, over the longer term. Encourage participants to take up offers of ongoing support (see recommendation 10).

Recommendation 5 Encouraging adherence to lifestyle weight management programmes

Who should take action?

- Providers of lifestyle weight management programmes.

What action should they take?

- Offer programmes to groups of children or young people and their families. Where necessary, offer programmes to individual families, if this better meets their needs and preferences. For example, some families may prefer to attend individual sessions initially and attend group sessions as their confidence and self-esteem grows.
- Offer a range of programmes for children and young people of different ages and at different stages of development. If group sessions are offered, work with groups of peers and their parents or carers. Note, some adolescents may respond better to programmes if their sessions are separate from those for their parents and carers.
- Offer programmes in venues that have the necessary facilities, are easily accessible and where the child or young person and their family feel comfortable. For example, use local community venues that have space for physical activities or games, and that can be reached quickly and easily by walking, cycling or using public transport.
- Offer programmes at a range of times that are convenient for families with children of different ages and for working parents and carers. For example, some sessions could be offered in the evenings or at weekends.
- Adopt a flexible approach so that participants can accommodate other commitments. They may also prefer to attend programmes more frequently initially and less frequently as their skills and confidence in making changes grows. For example, use rolling programmes that allow participants to start at different points and cover the same material but not necessarily in the same order.
- Emphasise the importance of parental (or carer) support and their commitment to adhere to the programme. Stress that this support and commitment should extend beyond the duration of the programme itself and that outcomes will be reviewed for at least the first year after completion.

- Maintain regular contact with participants. Promptly follow up those who miss sessions to establish why and to restore commitment. Focus on participants from disadvantaged groups and those who miss sessions early on in the programme.
- Try to retain the same team of staff throughout each cycle of the programme.

Recommendation 6 Raising awareness of lifestyle weight management programmes: commissioners and programme providers

Who should take action?

- Directors of public health and their teams.
- Local authority commissioners.
- NHS commissioners.
- NHS and local authority communications teams.
- Providers of lifestyle weight management programmes.

What action should they take?

- Local authorities should ensure an up-to-date list of local lifestyle weight management programmes for children and young people is maintained. This should form part of a list of services commissioned for the local obesity care or weight management pathway. It should be regularly disseminated, or accessible to organisations in the public, community and voluntary sectors.

- Use children's centres, libraries, the local media, professional and voluntary organisations working with children and young people and schools to raise awareness of lifestyle weight management programmes. Any publicity should clearly describe:
  - who the programme is for (age range, any eligibility criteria and the level of parental involvement needed)
  - how to enrol (including whether participants can self-refer or need a formal referral from a health professional)
  - programme aims
  - type of activities involved (to alleviate any anxieties about the unknown and to ensure expectations are realistic): 'healthy living' and any fun aspects should be emphasised
  - time and location, length of each session and number of sessions.
- Commissioners, public health teams and providers should raise awareness of the programmes among health professionals who may refer children and young people. This includes GPs and staff involved in the National Child Measurement Programme and the Healthy Child Programme. For example, the programme could be publicised through health professional networks and by offering training sessions on the programmes and how to make referrals.

Recommendation 7 Raising awareness of lifestyle weight management programmes: health professionals, other professionals and voluntary organisations

Who should take action?

- Health professionals, in particular, GPs, dietitians, health visitors, school nurses and those involved in delivering the National Child Measurement Programme and the Healthy Child Programme.
- Schools, colleges, early years organisations, children's centres and looked-after children's teams and other professionals who work with children and young people. For example, youth workers, social workers, and pastoral care workers.

What action should they take?

- Health professionals should tell the parents or carers of children and young people who have been identified as being overweight or obese about local lifestyle weight management programmes. They should explain what these involve and how they can take part (including whether or not they can self-refer).
- Other professionals who work with children and young people should raise awareness of lifestyle weight management programmes for overweight and obese children and young people. They should also raise awareness of how to enrol on them.

Recommendation 8 Formal referrals to lifestyle weight management programmes

Who should take action?

- Children's community nurses, dietetic teams, GPs, health visitors, primary care teams, obesity specialists, paediatricians, school nurses and school healthcare teams.

What action should they take?

- Where there are concerns about a child or young person's weight, weigh them in light clothing on clinically approved, regularly calibrated scales. In children older than 2 years, measure their height using a stadiometer. (See the Standard evaluation framework for weight management interventions page 32, for practical advice on weighing and measuring children).
- Use the UK growth charts for children aged 4 years and older to determine BMI centile for their age and gender. Use the UK-WHO 0–4 years growth chart to determine if children younger than 4 are a healthy weight. Record this in the child or young person's health record.
- Take account of their BMI centile, any obesity-associated diseases or conditions (comorbidities) they may have, or family medical history, and any psychosocial considerations, to determine whether referral to a lifestyle weight management programme is clinically appropriate.

- Use tact and diplomacy to find out if the family and the child or young person accepts that the child or young person is overweight or obese. If they do accept this and it is clinically appropriate to refer them to a lifestyle weight management programme, explain the potential benefits they will gain – and the risks of not addressing their child's weight. In addition:
  - identify and address any fears or concerns the child, young person or their family may have about attending (for example, fears of being the largest child on the programme, of having to do very strenuous activities, or being stigmatised for attending)
  - give the family information about the programme, or tell them where they can get this information
  - explain what can be realistically expected in terms of results over the duration of the programme itself (for example, explain that for growing children, maintaining their existing weight may be a realistic short-term aim)
  - explain that the more sessions of a programme they attend, the greater the likelihood of success.
- Assess whether the child or young person and their family are ready and willing to be referred. If they are ready, refer them to an effective lifestyle weight management programme (see recommendation 3).
- If the family is not ready to attend a programme:
  - tell them how they can enrol in the future (including the fact that they can self-refer if this is possible)
  - offer a follow-up appointment in 3 or 6 months, according to their preference
  - provide them with, or point them to, information and advice on healthy eating, physical activity and how to reduce sedentary behaviour (examples include: the NHS Choices Eatwell plate, UK physical activity guidelines and the Change4Life website).
- If children or young people need specialist support to manage their weight, refer them to specialist obesity services (if available) or to paediatric services.
- If there are concerns about the child or young person's mental wellbeing related to their weight, use the local pathway to refer them to CAMHS. Ensure their GP is informed.

Recommendation 9 Providing ongoing support: health

professionals

Who should take action?

- Children's community nurses, dietetic teams, GPs, health visitors, members of primary care teams, obesity specialists, paediatricians and school nurses and school healthcare teams.

What action should they take?

- Health professionals should use feedback from the programmes to help regularly monitor progress and provide ongoing support. They should acknowledge that:
  - for children who are growing taller, avoiding further weight gain is a realistic short-term aim that can have a positive impact in the longer term
  - for young people who are no longer growing taller, ultimately they need to lose weight to improve their BMI, and they should also aim to acquire the knowledge and skills they need to make long-term behaviour changes
  - it is important to maintain changes in behaviour once the programme is completed
  - improvements in diet and physical activity can have positive health benefits, independent of any effect on weight or BMI
  - improvements in psychosocial outcomes (such as sense of wellbeing, self-efficacy, self-esteem and self–perception) are considered important health benefits for overweight and obese children and young people.
- After the programme has been completed, health professionals should continue to monitor the child or young person's BMI centile when the opportunity arises and at 6 months and 1 year after they complete the programme.
- If the child or young person's BMI centile begins to increase, or if they or their parents or carers express concerns about their weight (or sustaining changes in their behaviour), discuss the possible causes. If necessary, consider another referral to the same or an alternative lifestyle weight management programme that may better address the needs of the family. Or consider referral to specialist obesity services (if available), or to a paediatrician.

Recommendation 10 Providing ongoing support: lifestyle weight management programmes

Who should take action?

- Providers of lifestyle weight management programmes.

What action should they take?

- With the participants' consent, providers should send feedback to their referring GP or healthcare professional.
- Offer all participants ongoing support when they have completed the programme. This support should be offered for at least the first year and longer, if possible, depending on the family's needs. Offer a range of options including follow-up sessions at different times and in easily accessible and acceptable venues.
- Tell participants about local services and activities that may provide further support to help them manage their weight, for example, local leisure services and walking or cycling groups.

Recommendation 11 Lifestyle weight management programme staff: training

Who should take action?

- Providers of lifestyle weight management programmes.

What action should they take?

- Ensure staff are trained to deliver the weight management programme they will be working on. Ensure the training has been developed with the input of, and is regularly reviewed by, a multi-disciplinary team of professionals (see recommendation 2). Ensure staff training needs are regularly reviewed and addressed.

- Ensure programme staff treat overweight and obese children, young people and their families with empathy, by making them aware of:
  - the reasons why some children and young people may have difficulty managing their weight
  - the experiences they may face in relation to their weight
  - the anxieties they and their families may have about attending the programme
  - the way in which obesity is perceived by different communities
  - the issues they may need to consider to ensure activities are culturally acceptable.
- Train staff:
  - to accurately measure and record height and weight and to determine BMI centile using age- and gender-specific charts
  - to help parents and carers recognise that their child is overweight or obese and the benefits of addressing their weight
  - to use a locally approved comorbidities assessment tool, where available, to determine whether lifestyle weight management programmes are appropriate, or whether they should see their GP for a referral to a specialist obesity service or other specialist services (for example, paediatric services)
  - to identify any concerns about a child or young person's mental wellbeing and how to refer them to their GP for onward referral to CAMHS
  - in how to comply with statutory requirements and local policies relating to safeguarding and information governance.

Recommendation 12 Lifestyle weight management programme staff: knowledge and skills

Who should take action?

- Providers of lifestyle weight management programmes.

What action should they take?

- Ensure staff have the necessary knowledge and skills to deliver multi-component programmes to children, young people and their families. This includes knowledge and skills in relation to: childhood obesity management, diet and physical activity. It may also include training in behaviour-change techniques and psychological approaches (for example, motivational interviewing).
- Ensure there are staff available who can provide parenting skills training. Also ensure there are staff trained in practical food preparation.
- Ensure staff are able to empathise and communicate effectively with the family. They should be able to work collaboratively with them and tailor interventions for individual needs. They should also be able to lead group work and set an appropriate pace when delivering the programme. In addition, they should be able to judge when changes in behaviour have become embedded, before introducing further changes.
- Ensure staff can review progress and provide constructive feedback. They should be able to help children, young people and their families to identify possible reasons for relapse and use problem-solving techniques to address these.
- Identify any gaps in staff knowledge or skills (or a lack of confidence). Address any gaps through training.

Recommendation 13 Training in how to make referrals to a lifestyle weight management programme

Who should take action?

- Employers.
- Professional bodies responsible for setting competencies and designing continuous professional development programmes for health professionals.

What action should they take?

Ensure health professionals:

- Understand why some children and young people may have difficulty managing their weight and the experiences that they may face in relation to their weight.

- Are aware of how obesity is viewed in different cultures and the issues they may need to consider to ensure any recommended activities are culturally acceptable. See Promoting physical activity for children and young people (NICE public health guidance 17).
- Can accurately measure and record height and weight and determine BMI centile, using age- and gender-specific charts.
- Can raise the issue of weight management confidently and sensitively. They should be able to help parents and carers identify when their child is overweight or obese and understand the benefits of addressing their weight.
- Are familiar with the local obesity care or weight management pathway and any locally approved comorbidities assessment tools.
- Can assess whether referral to a lifestyle weight management service is appropriate, or whether they should be referred to specialist obesity services or other specialist services (for example, paediatric services).
- Can identify suitable lifestyle weight management programmes for children, young people and their families and can provide them with information and ongoing support (see recommendations 9 and 10).

Recommendation 14 Supporting lifestyle weight management programme staff and those making programme referrals

Who should take action?

- Employers of staff working on, or referring children and young people to, lifestyle weight management programmes.
- Providers of lifestyle weight management programmes.

What action should they take?

- If those involved in referring to, or delivering, lifestyle weight management programmes lack the confidence and skills to discuss weight management, offer them support and training.
- If staff identify that the reason for their lack of confidence is a result of being overweight or obese themselves, offer them access to weight management programmes.

See also recommendation 9 in 'Obesity: working with local communities' (NICE public health guidance 42).

Recommendation 15 Monitoring and evaluating programmes

Who should take action?

- Directors of public health and public health teams working on obesity and child health and wellbeing.
- Health and wellbeing boards.
- Local authority commissioners.
- Clinical commissioning groups.
- NHS England.
- Providers of lifestyle weight management programmes.

What action should they take?

- Ensure monitoring focuses on sustaining changes in the longer term. Include the following in the data reported:
  - numbers recruited, percentage completing the programme and percentage followed up at 6 months and at 1 year after completing the programme
  - for all those recruited, BMI and BMI z score a) at recruitment to the programme b) at completion of the programme c) 6 months after completing the programme and d) 1 year after completing the programme.
- Ensure other measured outcomes reflect the aim of the programme and relate to factors that can support or contribute towards a reduction in BMI. These could include: improvements in diet and physical activity, a reduction in sedentary behaviour and improvements in self-esteem. (See Standard evaluation framework for weight management interventions for examples of other possible outcome measures.)

- Ensure data collection tools are validated for the age range or population group the programme addresses and are feasible and affordable in practice settings. Do not rely on self-reported measures of height or weight, or interpretations of BMI based on them.
- Monitor any variation in the numbers recruited, numbers completing and the proportion of people retained by the programme, according to population subgroup.
- Collect data on:
  - Variations in outcomes, according to age, gender, ethnicity and socioeconomic status (for example, as indicated by the postcode of participants), so that the impact on health inequalities can be assessed.
  - The route through which participants were referred to programmes including any self-referrals. Use this information to identify areas where awareness of available programmes is low and where referral rates might be increased.
  - The views of participants: areas they found helpful and areas for improvement. Ensure the views of everyone who has participated are collected (including those who did not complete the programme).
  - The views of staff delivering the programme and of those referring participants to it. Use the information to identify any practical or process issues that may need addressing.
- Commissioners should evaluate the service using data on outcomes and the cost of promotion and delivery.
- Commissioners should regularly review monitoring and evaluation data and use it to amend and improve the service.

See also recommendation 10 in 'Obesity: working with local communities' (NICE public health guidance 42).

[1] Several classification systems are used in the UK to define 'obesity' and 'overweight' in children. In the analysis of population surveys such as the National Child Measurement Programme and the Health Survey for England (HSE), children over the 85th centile, and on or below the 95th centile, are classified as being 'overweight'. Children over the 95th centile are classified as being 'obese'. However, the NCMP uses the clinical cut-off points described above when providing feedback about the BMI of individual children to parents and carers.

2 Public health need and practice

Obesity and overweight statistics

In 2011 in England, around 3 out of 10 boys and girls aged 2 to 15 years were either overweight or obese. The proportion of those who are overweight has remained largely unchanged since the mid-1990s. However, childhood obesity has risen by around 1 percentage point every 2 years up to 2007 (NHS Information Centre 2013; Department of Health 2011).

In the 2011/2012 school year, around 23% of children in reception and 34% in year 6 were either overweight or obese. Around 9.5% and 19%, respectively, were obese. The prevalence of obesity was linked with socioeconomic deprivation and was more prevalent in urban areas. Obesity was also more prevalent among children from black, Asian, 'mixed' and 'other' minority ethnic groups than among their white counterparts (NHS Information Centre 2012).

Although the prevalence of obesity now appears to be levelling off, in 2011 around 17% of boys and just under 16% of girls aged 2 to 15 years were classed as obese (NHS Information Centre 2013).

Up to 79% of children who are obese in their early teens are likely to remain obese as adults (Chief Medical Officer 2008). Consequently, they will be at greater risk of conditions such as type 2 diabetes, coronary heart disease and some cancers in adulthood (Foresight 2007). Studies have also shown that a child with at least 1 obese parent is more likely to be obese themselves (Perez-Pastor et al. 2009).

Childhood obesity and health

Various diseases or conditions (comorbidities) may be associated with obesity in childhood. Of these, type 2 diabetes is a particular concern. It usually occurs in middle aged and older people and is associated with being overweight or obese. However, over the past decade, more younger people and children (some as young as 7) are being diagnosed with this condition (Diabetes UK 2011).

Being overweight as a child has also been associated with other cardiovascular risk factors in childhood or early adulthood (Craig et al. 2008; Logue and Sattar 2011). Other conditions associated with childhood obesity include: non-alcoholic fatty liver disease (Wei et al. 2011); gall stones (Koebnick et al. 2012); asthma and sleep-disordered breathing, including sleep apnoea (Figueroa-Munoz et al. 2001); and musculoskeletal conditions (Murray and Wilson 2008, Taylor et

al 2006).

In addition, there is evidence that childhood obesity impacts on self-esteem and quality of life (Griffiths et al. 2010). In adolescence, it has been associated with depression (Sjoberg et al. 2005).

Overweight and obese children are likely to experience bullying and stigma (Griffiths et al. 2006) which can also impact on their self-esteem. Some of these issues may, in turn, lead to under-achievement at school (Bromfield 2009).

Weight management programmes

The 'Healthy child programme for 5–19 year olds' recommends that overweight or obese children should be referred to appropriate weight management services to help them achieve and maintain a healthier weight (Department of Health 2009).

Such programmes can also help improve self-esteem (Lowry et al. 2007). In addition, they have the potential to help improve how they see themselves which may, in turn, enhance their future wellbeing (even if weight loss is not apparent in the short term) (Griffiths et al. 2010).

In 2008, an estimated 314 to 375 weight management programmes for children were operating in England (Aicken et al. 2008). Lifestyle approaches focus on diet, physical activity, behaviour change or any combination of these factors. They may include programmes, courses or clubs (including online services) that are:

- designed for overweight or obese children and young people or for their parents, carers or families
- designed primarily for adults but which accept, or may be used by, children and young people
- provided by the public, private or voluntary sector, in the community or in (or via) primary care organisations.

Some were small local schemes, others were available on a regional or national basis – such as those listed in the Department of Health's 'Child weight management programme and training providers framework' (Cross Government Obesity Unit 2009).

Financial consequences of childhood obesity

Unless obesity is addressed in childhood, most of the financial consequences are likely to be

incurred when treating and managing the obesity-associated diseases or conditions (comorbidities) that arise in adulthood. (These include type 2 diabetes, coronary heart disease and some cancers.)

3 Considerations

Introduction

The Programme Development Group (PDG) took account of a number of factors and issues when developing the recommendations, as follows. Please note: this section does not contain recommendations. (See Recommendations.)

The evidence

3.1 The PDG highlighted the need for greater consistency in reported outcome measures and the time points at which they are recorded, to allow for better comparison of the effectiveness and cost effectiveness of interventions.

3.2 In many studies, there was a lack of detail on the content of the intervention. This made it difficult to compare different approaches or methods and to determine which elements of 'multi-component' interventions contribute to overall effectiveness.

3.3 Review 1 included studies from the UK, Western Europe, North America, Australia and New Zealand, because the potential applicability of the findings to the UK was considered to be high. The UK evidence included some lower quality, relatively small, uncontrolled studies. However, such studies were valuable in indicating a general 'direction of travel' in terms of the effectiveness of interventions.

3.4 Limited data were available for children and young people of specific ages. No studies were found in which children younger than 6 were specifically targeted. Although several programmes had a lower age limit (of between 3 and 5 years), none of the studies provided data separately for this age group. Most programmes aimed at very young children appeared to be aimed at all children, rather than those who were overweight or obese. Study participants were predominantly female. Only 2 studies included more boys than girls and, in most cases, there were at least 20% more girls than boys. However, the PDG noted from expert testimony and experience that, in the 'real world', there tends to be a more even mix of boys and girls among programme participants. Nevertheless,

the importance of identifying barriers to involving more boys in intervention studies was noted.

3.5 There were limited and contradictory data on the impact of lifestyle weight management programmes according to socioeconomic group. In most studies, children and young people were from middle-income families. In the 2 UK studies that did have significant numbers from low-income families, no association was found between outcomes and socioeconomic group. However, a US study found that participation led to greater reductions in BMI z scores among those from higher income families.

3.6 No data were available on the effectiveness or cost effectiveness of lifestyle weight management services for children and young people with special needs. Nor were any data available on the barriers and facilitators to implementing lifestyle weight management services for this group. The PDG noted this gap in the evidence base and has made recommendations for research in this area.

3.7 Review 1 considered the reported follow-up data for participants in the included studies. It did not consider any secondary prevention or weight maintenance programmes for children or young people who have previously been obese or overweight. There is also a lack of information on the views of those who do not take part or who drop out early from a lifestyle weight management programme. This is an important omission, because there is an association between BMI adjusted for age and sex (BMI z score) at baseline and drop-out rates. It is possible, therefore, that review 2 may not have fully captured the views of children and young people with higher BMI scores. Review 2 focused on the views of children, young people and their families about weight management programmes. It did not capture their views or experiences of the referral process.

Family-based approach

3.8 There is strong evidence from review 1 to suggest that targeting both parents and children, or whole families, is effective in reducing BMI z scores by the end the programme. In addition, the evidence on interventions involving families showed no negative effects on wellbeing and, in some cases, showed positive effects.

3.9 A report commissioned for the PDG identified that it is more common for adolescents to attend programmes alone, or for parental attendance to be optional. That is despite evidence showing that parental or family involvement contributes to success in weight management. The recommendations for a whole-family approach therefore apply to older children and adolescents. However, the PDG acknowledged that flexibility is important as young people and older children become more independent, because some young people and some older children may prefer to attend separate sessions from their parents or carers. (This might be on a group or an individual basis.)

3.10 Many overweight and obese children and young people may have, or come from a family with, a history of failed attempts to manage their weight. The Group noted the importance of exploring this shared history, along with family attitudes towards diet, physical activity and the amount of time spent being sedentary.

3.11 Efforts to manage a child or young person's weight are not always supported, and are sometimes undermined, by members of the wider family. This is possibly because of a lack of understanding of the aims of lifestyle weight management programmes and the importance of managing the weight of obese or overweight children and young people. The PDG was aware that some family members may not attend the programme with the child or young person. (This may be true for non-resident parents, step-parents and grandparents.) With this in mind the Group noted the importance of gaining the wider family's understanding and support and has made a recommendation to this effect.

Tailoring programmes

3.12 The PDG noted that lifestyle weight management programmes were often 'bought in' by commissioners and were rarely tailored to meet local needs. As a result, the recommendations highlight the importance of assessing local needs and ensuring programmes are tailored to address those needs.

3.13 Because of a dearth of evidence, the PDG has been unable to make age-specific recommendations. However, the Group does stress the importance of tailoring programmes according to age and stage of development.

3.14 The PDG did not make specific recommendations for children and young people

with severe obesity. However, the Group was aware that some of them may attend a lifestyle weight management programme. For example, families may self-refer to these services, or they may be referred by health professionals following treatment at a specialist obesity service. Or they may attend a lifestyle weight management service (to support lifestyle changes) and also receive individual specialist support. The PDG highlighted the importance of developing an individually tailored plan that includes appropriate goals for all children and young people, including those from this group.

Determining whether a child is overweight or obese

3.15 The PDG recognised that although BMI is a practical estimate of overweight in children and young people, it is not a direct measure of adiposity. It acknowledged that it may be less accurate and need to be interpreted with caution in children and young people who are muscular or in those with earlier than average pubertal development. In addition, the Group was aware that there is evidence that adults from black and minority ethnic groups are at risk of obesity-associated conditions and diseases (comorbidities), such as type 2 diabetes, at a lower BMI than the white European population. However, it was beyond the remit of this guidance to assess whether the same applies to children and young people.

Referring on to specialist services

3.16 The PDG recognised that 'complex obesity' (in which someone who is obese also has obesity-associated diseases or conditions [comorbidities]) can occur at any level of obesity (although this is more likely, as BMI increases). That is why the Group recommended the use of a comorbidity assessment tool. The aim was to ensure that, if necessary, children and young people are referred on for specialist support. However, the PDG was unable to identify an appropriate assessment tool for use by lifestyle weight management services. The Group viewed development of such a tool as a priority and made a research recommendation to this effect.

3.17 The PDG heard from expert testimony that overweight and obese children are often victimised and that this can lead to depression. The Group also heard that emotional and behavioural problems and impaired quality of life have been observed in obese pre-school children. Behaviours such as binge eating are also

more likely in obese adolescents than in adolescents of a healthy weight. Treatment of these conditions was beyond the scope of this guidance. However, the PDG noted the importance of ensuring that any such potential issues are identified and that the child or young person is referred on for specialist support if necessary.

Children and young people with special needs

3.18 The PDG was aware that some children and young people with disabilities, learning difficulties or other special needs may have particular problems managing their weight. This may be because of their underlying condition, or because their physical activity is limited. The PDG also recognised the importance of ensuring they have access to appropriate services to help them manage their weight. In addition, it acknowledged the statutory duty upon public bodies to look at ways of ensuring equal access to services.

3.19 The PDG noted that many overweight or obese children and young people with more complex needs will need the support of a specialist obesity service or other specialist services to help manage their weight. However, members also noted that some providers have developed lifestyle weight management programmes for children and young people with mild to moderate learning difficulties or for disabled children. Others have adapted existing programmes and trained staff to accommodate their needs. The PDG welcomed such approaches and encouraged evaluation of them.

Encouraging adherence to programmes

3.20 The PDG was particularly concerned about the practical issues that may prevent potential participants from taking part in, or continuing to attend, a lifestyle weight management programme. This includes the location and type of venue where programmes are delivered and participants' need to accommodate other family commitments.

3.21 Evidence from review 2 highlighted how important it is to ensure the family and the child or young person recognise and accept that they are overweight or obese. Conversely, a lack of recognition or denial that the child or young person is overweight or obese can hinder uptake and adherence to a lifestyle weight management programme. The recommendations reflect this finding, including a

recommendation for further research as to how this may be best achieved.

3.22 The PDG debated whether lifestyle weight management services should be offered to groups of families or to families on an individual basis. Evidence shows that both approaches are effective in reducing BMI adjusted for age and sex (BMI z scores). The PDG noted from expert testimony that group sessions can provide a good opportunity to see how others with similar goals have succeeded. They also provide peer support to build the child or young person's self-belief that they, too, can succeed. The PDG acknowledged that individual sessions were likely to be more resource-intensive. However, the Group was aware that some children and young people may not feel able to discuss or address their weight in a group setting. For this reason the PDG recommended flexibility as necessary.

Behaviour-change techniques

3.23 The PDG heard from expert testimony that behaviour-change techniques are effective in lifestyle weight management programmes for children and young people and are widely used. (This includes self-monitoring, stimulus control and goal-setting.) A 'package' of these techniques is usually included in the programme, because it is not known how much each element contributes to effectiveness. The PDG has therefore made a recommendation for more research in this area.

3.24 The PDG heard that aspects of cognitive behavioural therapy are used by some lifestyle weight management programmes, usually with older children or adolescents. This therapy focuses on understanding unhelpful or inaccurate thought processes, then changing behaviour to encourage new ways of thinking. It is usually delivered by staff who have received specialist training. However, current evidence does not allow conclusions to be drawn on its effectiveness.

Increasing uptake of programmes

3.25 Review 2 identified a lack of awareness of the availability of lifestyle weight management programmes among health professionals. In addition, the former Childhood Obesity National Support Team found that programmes frequently ran below capacity. The PDG was therefore aware of the need to increase both self-referrals and referrals by health professionals – including the need to agree

clear referral pathways.

3.26 The PDG identified a wide range of 'actors' who could raise awareness of lifestyle weight management programmes. In particular, the PDG noted that staff conducting the National Child Measurement Programme were in an ideal position to direct parents and carers to these programmes for advice and support.

3.27 The key aims of the Healthy Child Programme: pregnancy and the first 5 years of life include early recognition of risk factors for obesity, prevention and early intervention. The Programme's approach is consistent with this guidance. For example, it recommends working in partnership with the family, setting achievable goals and exploring earlier life experiences in relation to obesity. The PDG recognised the important contribution that staff delivering the Healthy Child Programme could make in raising awareness of, and formally referring children and their families to, lifestyle weight management programmes. It also recognised their potential role in providing ongoing support.

Training and support

3.28 Review 2 and the former National Support Team for Childhood Obesity findings both highlighted the need to train lifestyle weight management programme staff and health professionals referring people to the programmes.

3.29 The PDG noted that staff may lack the confidence and skills to raise the issue of weight management with potential participants and identified this as a training need. In addition, the National Support Team for Childhood Obesity found that a lack of confidence to deliver weight management interventions was sometimes linked to the programme staffs' own unhealthy weight. The PDG noted the need to offer these staff support to manage their weight.

Sustaining behaviour changes

3.30 The PDG did not make recommendations regarding the optimal length of programmes. A meta-analysis conducted for review 1 showed that the duration of programmes was associated with improved BMI z scores in programmes lasting between 8 and 24 months. However, once the programme was completed, the effect disappeared over time and was non-significant at

6 months after completion. The PDG therefore stressed the importance of ongoing support and follow-up once programmes are completed.

3.31 The PDG has recommended that participants completing programmes are given information about relevant local support services. However, the Group has not made recommendations regarding those services because this is beyond the scope of the guidance. It noted that a number of pieces of NICE guidance have made recommendations in this area (see Related NICE guidance).

3.32 The PDG noted that many lifestyle weight management services for children and young people were often commissioned in isolation and in response to a short-term funding opportunity. The Group highlighted the importance of commissioning these services as part of a wider, more sustainable approach to preventing and treating obesity. This approach is reflected in this guidance. It is also addressed in detail by NICE public health guidance on obesity: working with local communities.

Monitoring, evaluation and setting outcome measures

3.33 The PDG noted there had been little robust monitoring and evaluation of lifestyle weight management programmes. The Group also noted that new local authority responsibilities for public health may be an opportunity to embed monitoring requirements into service specifications and contracts. Periodic evaluations into planning and commissioning strategies may also be possible.

3.34 The PDG debated at length the choice of suitable outcome measures for lifestyle weight management programmes for children and young people. The Group agreed that the primary goal, in the longer term, is to reduce BMI for age and sex (BMI z scores). However, it was aware that, in practice, most programmes run for only around 8 to 12 weeks – and substantial reductions in that time may be difficult to achieve.

3.35 A report commissioned for the PDG identified unrealistic outcome measures as a barrier to providers working effectively with commissioners. Nevertheless, the PDG was aware that a reduction in BMI for age and sex is sometimes used by commissioners as a key performance indicator. Financial penalties may, in some cases, be attached to failure of providers to achieve this outcome.

3.36 The PDG recognised that maintaining weight (and preventing further weight gain) is the short-term aim of many lifestyle weight management programmes for children and young people. The rationale is that if the child maintains their weight as they grow in height over time, their BMI will be reduced. The PDG acknowledged that young people who are no longer growing taller will ultimately need to lose weight to improve their BMI. However, the Group also recognised that this takes time. Members considered that an appropriate short-term aim may be to avoid further weight gain while the young person acquires the skills and knowledge they need to make behavioural changes. Over time, as the changes to their behaviour become established, there should be a positive effect on their BMI.

3.37 The PDG felt it was very important to sustain any positive outcomes beyond the duration of a lifestyle weight management programme. Therefore the Group placed an emphasis on sustaining long-term change.

3.38 The PDG recognised the importance of retaining participants in the programme. This is based on evidence that the greater the proportion of total programme sessions a child or young person attends, the more likely they are to succeed. This is reflected in a number of recommendations.

Economic considerations

3.39 The economic model defines a child or young person as overweight if their BMI (adjusted for age and sex) lies between the 85th and 95th centiles of the UK 1990 centile chart. These centiles correspond to BMI z scores of 1 and 2 respectively for the UK 1990 centile chart. They are used for defining whether someone is overweight or obese in population studies and for monitoring populations, rather than for the clinical management of individuals. In the model, a child or young person whose BMI (adjusted for age and sex) lies between the 95th and the 99.5th centile is defined as obese; children and young people above the 99.5th centile are described as 'morbidly obese'.

3.40 How the average weight of children of a particular age and sex changes over time can be referred to as their 'weight trajectory'. All other factors being equal, the BMI z score of this group of children will be maintained. So the aim of programmes for overweight or obese children and young people is to help them make changes so that they move to a lower weight trajectory. This might be

achieved by: losing weight; by maintaining weight as a child grows in height; or by gaining less weight than would have been expected. In all cases, they will weigh less than would have otherwise been expected over the same time period.

3.41 The economic model estimated that interventions costing £100 per person would usually be cost effective from a public sector perspective. This would be the case if a group of overweight or obese children could be moved to a lower average weight trajectory and this was maintained throughout life. (This is true for a weight loss of as little as 0.5%.) Interventions that permanently lower weight trajectory by an average 3% are estimated to be cost effective, if their average cost is less than £1000 per child.

3.42 The cost effectiveness of interventions for children and young people who are morbidly obese, as defined by the model, was unclear. The PDG concluded that interventions for children who are morbidly obese would need to lower their BMI z score considerably to be worth doing.

3.43 There was little evidence on whether children and young people can maintain for life the lower weight trajectory they may achieve during a lifestyle weight management programme. If they do, the economic model concludes that interventions that cause very small average decreases in weight trajectory will be worth undertaking. However, if the weight is regained quickly and they revert to their previous weight trajectory, then the intervention is estimated not to be cost effective. For example, the model looked at an intervention for overweight boys or girls aged from 12 to 17 that cost an average £437 per person. To be cost effective, their average weight trajectory, following an initial average weight loss of 5% of body weight, must lie below what it would have been without the intervention for at least 11 years.

3.44 If the weight of each participant in a lifestyle weight management programme is reduced by an average of 0.5% – and the post-intervention weight trajectory is maintained for life – the model estimates that interventions costing up to about £500 per child will be cost effective for both girls and boys and for each category of overweight and obesity. Interventions costing £2000 per child are estimated to need weight losses of 3 to 5%, maintained for life, to be cost effective for children who are borderline overweight, but of 2% (maintained for life) for children who are obese or morbidly obese.

3.45 The model assumes a discount rate of 3.5% per year for both costs and health benefits. Most of the health benefits of providing a lifestyle weight management programme for overweight and obese children and young people accrue in the later stages of life. As a result of discounting, these benefits are given a relatively low value compared with a health benefit that is immediate. Reducing the discount rate to 1.5% per year has the effect of increasing the present value of future health benefits considerably, and thus improves cost effectiveness.

4 Recommendations for research

The Programme Development Group (PDG) recommends that the following research questions should be addressed. It notes that 'effectiveness' in this context relates not only to the size of the effect, but also to cost effectiveness and duration of effect. It also takes into account any harmful/ negative side effects.

Recommendation 1 Research studies and trials

Who should take action?

Research councils, commissioners and funders.

What action should they take?

Research studies and trials of lifestyle weight management programmes for children and young people who are obese or overweight should:

- Standardise outcome measures to assess effectiveness. Outcomes should be reported on an 'intention to treat' basis (as opposed to reporting outcomes for programme completers only). They should include:
  - changes in BMI z score, as the primary outcome measure
  - factors that affect weight (matching these to the intervention objectives) for example, measures of self-efficacy, changes in diet, physical activity and time spent being sedentary and measures of wellbeing.
- Standardise the time points at which outcome measures are reported and followed up. They should include, as a minimum: at baseline, completion of the intervention and at 6 months and at 1 year after completing the intervention.
- Report in detail the components of the intervention. This should include: what is done, to whom, by whom, in which setting, and when and how?
- Include an appropriate comparator group and report the components above. If a randomised controlled trial is not possible, alternative research designs should be considered.

- Report attrition (drop-out) rates, follow up non-completers and investigate the causes of attrition. Also should investigate the causes of low uptake and how these might be addressed.
- Be sufficiently powered to detect effects.
- If possible use only standardised validated tools (appropriate for the study sample) to collect data, for example, a validated food frequency questionnaire to investigate dietary intake. If validated tools for secondary measures do not exist, a tool to measure the outcome (for example, physical activity) should be developed as part of the study.
- Include the collection and analysis of qualitative data to allow a process evaluation of the intervention. These data should include the referral process and experiences of both programme staff and participants.
- Include the collection of cost data to allow cost effectiveness to be evaluated.
- Report any unexpected effects or outcomes.

Recommendation 2 Longer-term programme evaluation

Who should take action?

Research councils, commissioners and funders.

What action should they take?

Consider funding longer term research studies and trials of lifestyle weight management programmes for children and young people who are obese or overweight. Ideally studies should last between 5 and 10 years.

Recommendation 3 Barriers and facilitators

Who should take action?

- Research councils, commissioners and funders.
- Researchers and investigators.

What action should they take?

- Determine any variation in the barriers to, and facilitators for, participating in lifestyle weight management programmes for overweight and obese children and young people and their families (including beliefs about obesity). Include:
  - ethnicity and cultural aspects
  - socioeconomic group
  - gender (boys in particular)
  - age.
- Ask parents, carers and families of children younger than 6 what factors encourage or discourage overweight and obese children to participate (or not) in lifestyle weight management programmes. Determine how these might be addressed.
- Investigate the barriers to, and facilitators for, implementing lifestyle weight management services for overweight and obese children and young people with special needs. Determine how these might be addressed.

Recommendation 4 Weight management programmes

Who should take action?

- Research councils, commissioners and funders.
- Researchers and investigators.

What action should they take?

- Consider which components of multi-component interventions determine effectiveness and cost effectiveness.
- Investigate effective and cost effective approaches to lifestyle weight management for children younger than 6 years.
- Investigate effective and cost effective approaches to lifestyle weight management for children and young people with special needs. How can their needs, and the needs of their families, best be met? What training would staff need to deliver such interventions?

- Determine the long-term effectiveness of programmes. Do children and young people who have lost or maintained their weight in a lifestyle weight management programme maintain this in the long term and, if so, for how long? What programme characteristics facilitate longer term effectiveness?
- Examine how best to communicate the individual measures of the National Child Measurement Programme to parents and carers to ensure they take action, as needed, without causing distress.
- Investigate how to encourage parents and carers to take responsibility for their child's weight management. This includes how best to help parents, carers and families recognise when children and young people are overweight or obese. It also includes how to encourage parents and carers to participate in programmes.
- Investigate what impact parents and carers have on the outcomes of programmes.
- Examine who is best placed to deliver lifestyle weight management programmes (including lay people) for children and young people and what their training needs are.
- Investigate effective and appropriate ways of getting children and young people involved in lifestyle weight management programmes. This might include use of new technology such as texting or phone apps.
- Investigate and develop a comorbidity assessment tool for use by lifestyle weight management services, to ensure that, if necessary, children and young people are referred for specialist support.

More detail identified during development of this guidance is provided in Gaps in the evidence.

5 Related NICE guidance

Published

- BMI and waist circumference – black, Asian and minority ethnic groups. NICE public health guidance 46 (2013)
- Obesity: working with local communities. NICE public health guidance 42 (2012)
- Weight management before, during and after pregnancy. NICE public health guidance 27 (2010)
- Promoting physical activity for children and young people. NICE public health guidance 17 (2009)
- Obesity. NICE clinical guideline 43 (2006)

Under development

- Overweight and obese adults: lifestyle weight management services. NICE public health guidance. Publication expected May 2014

6 Glossary

Behaviour-change techniques

Behaviour-change techniques are techniques aimed at changing the way someone acts (and so, logically, their thinking patterns). In this case, the changes relate to dietary intake and eating behaviour, physical activity and sedentary behaviour.

BMI z score

BMI z score is a measure of how many standard deviations a child or young person's BMI is above or below the average BMI for their age and gender. (This is based on a reference population known as a child growth reference.) For instance, a z score of 1.5 indicates that a child is 1.5 standard deviations above the average value, and a z score of −1.5 indicates a child is 1.5 standard deviations below the average value.

The advantage of using BMI z scores, instead of BMI, is that it allows direct comparison of BMI (and any changes in BMI) across different ages and by gender. This term is sometimes used interchangeably with 'BMI standard deviation score' (BMI SDS). See the National Obesity Observatory's A simple guide to classifying body mass index in children.

Care is needed when interpreting BMI z scores using the UK 1990 centile charts for black, Asian and other minority ethnic groups. There is evidence to suggest that adults from these groups are at risk of obesity-associated conditions and diseases at a lower BMI than the white population. See BMI and waist circumference – black Asian and minority ethnic groups (NICE public health guidance 46). However, there are no growth reference charts for children from minority ethnic groups. (For more details on the differences in BMI thresholds as a trigger for disease among children in these groups see the National Obesity Observatory's report on Obesity and Ethnicity.)

Body mass index (BMI)

Body mass index is defined as a person's weight in kilograms divided by the square of their height in metres and is reported in units of kg/m^2. Specific cut-off points are used to assess whether a person is a healthy weight, underweight, overweight or obese. For children and young people these are related to age and gender.

Child and adolescent mental health services (CAMHS)

Child and adolescent mental health services are specialist mental health services for children and young people.

Clinical commissioning groups

Clinical commissioning groups (CCGs) are responsible for commissioning a range of healthcare services for children and adults. This includes specialist obesity services (sometimes called tier 3 services). The groups do not directly commission lifestyle weight management services (sometimes called tier 2 services). Rather, they work with local authorities to coordinate and integrate planning and commissioning through the health and wellbeing board.

Comorbidities

Comorbidities are diseases or conditions that someone has in addition to the health problem being studied or treated. Some comorbidities, such as type 2 diabetes, are associated with being overweight or obese, because the risk of developing them increases with an increasing BMI.

Complex obesity

Complex obesity occurs when someone who is obese has additional and related diseases or conditions, for example, type 2 diabetes. It can also occur when obesity results from an underlying condition, for example, an endocrine disease or condition, or when it is associated with various syndromes (such as Prader-Willi syndrome). Complex obesity can occur regardless how obese the person is, although it is more likely as BMI increases.

Evaluation

Evaluation involves assessing whether an intervention is meeting its objectives. This might include outcomes (for example, effectiveness in terms of BMI z score reduction or value for money). It might also include evaluation of processes (for example, how successful recruitment is or how acceptable the intervention is to participants).

Health and wellbeing boards

Health and wellbeing boards are based in upper tier and unitary local authorities. They aim to improve health and care services and the health and wellbeing of local people. They bring together

key commissioners in the locality, including representatives of clinical commissioning groups, public health, children's services and adult social services. They include at least 1 elected councillor and a representative of HealthWatch. The board develops a health and wellbeing strategy for the local area. This is based on an assessment of local needs, including a joint strategic needs assessment.

Joint strategic needs assessments (JSNAs)

Joint strategic needs assessments (JSNAs) identify the current and future health needs of a local population. They are used as the basis for the priorities and targets set.

Lifestyle weight management programmes

In this guidance, lifestyle weight management programmes refers to programmes that focus on diet, physical activity, behaviour-change or any combination of these elements.

Lifestyle weight management services

In this guidance, lifestyle weight management services (sometimes called tier 2 services) refers to services that help people in a particular geographical location who are overweight or obese. The service can be made up of 1 or more lifestyle weight management programmes. The programmes are usually based in the community and may be run by the public, private or voluntary sector.

Local authority commissioners

Local authorities commission some public health services for children and young people aged 5–19 years. They have a mandatory responsibility to deliver the National Child Measurement Programme. They also commission non-mandatory services such as school nursing and community-based weight management services.

Monitoring

Monitoring involves routine collection, analysis and reporting of a set of data to assess the performance of a weight management programme according to the service specification and intended health outcomes.

National Child Measurement Programme

The National Child Measurement Programme (NCMP) measures the weight and height of children

in reception class (aged 4 to 5) and Year 6 (aged 10 to 11). The aim is to assess the prevalence of obesity and overweight among children of primary school age, by local authority area. These data can be used at a national level to support local public health initiatives and inform local services for children.

NHS England

NHS England commissions primary care, clinical and specialised services. It also commissions public health services for children aged 0–5 years (including health visiting and much of the Healthy Child Programme). In 2015 the organisation's public health services transfer to local authorities.

Obesity care or weight management pathway

An obesity care or weight management pathway represents the various routes through local services that an individual child or young person might follow to help them manage their weight. A comprehensive obesity care or weight management pathway spans both prevention and treatment, offering services at different levels or 'tiers'. Children and young people may move between these services. In adult obesity care pathways, there may also be a further tier focusing on surgical treatment (sometimes called tier 4 services). Surgery is recommended for children and young people only in exceptional circumstances, see Obesity (NICE clinical guideline 43).

Physical activity

Physical activity includes the full range of human movement. It includes everyday activities such as walking or cycling for everyday journeys, active play, work-related activity, active recreation (such as working out in a gym), dancing, gardening or playing active games, as well as organised and competitive sport.

Positive parenting skills training

Positive parenting skills training is training for parents and carers that aims to improve children and young peoples' behaviour. It fosters effective boundary setting and the need to reward and praise children in a way that promotes positive relationships and self-esteem.

Providers of lifestyle weight management programmes

Providers of lifestyle weight management programmes are private, public or voluntary sector organisations offering lifestyle weight management services in the community or in (or via) primary

care settings.

Public Health England

Public Health England is an executive agency of the Department of Health. It provides advice and expertise to local authorities, NHS England and clinical commissioning groups on the commissioning of public health services.

Rolling programmes

Rolling programmes are lifestyle weight management programmes that run on a continuous basis. Participants can start and end the programme at different points, covering the same material over the same number of weeks or months, but not necessarily in the same order. An advantage is that participants referred part way through a programme cycle do not have to wait for it to be completed and a new one to start before they join.

Sedentary behaviour

Sedentary behaviour describes activities that do not increase energy expenditure much above resting levels. Sedentary activities include sitting, lying down and sleeping. Associated activities, such as watching television, are also sedentary.

Specialist obesity services

In this guidance, specialist obesity services (sometimes called tier 3 services) usually refers to clinical treatments provided by specialist services. This may include the use of drugs. These services could be for children or young people with severe or complex obesity, or with other special needs.

Stimulus control

Stimulus control relates to the way someone's behaviour changes as a result of a particular trigger. For example, having the television on can encourage someone to sit and watch it (that is, adopt sedentary behaviour); turning it off could encourage them to do something that is more physically active. Or if a person trying to manage their weight finds it hard to resist high fat or sugary snacks, family members could be asked not to eat those snacks around that person.

Universal obesity prevention services

In this guidance, universal obesity prevention services (sometimes called tier 1 services) refers to activities to help prevent everyone, regardless of their weight, from becoming overweight or obese. These universal services help raise awareness of the importance of maintaining a healthy weight. They also develop and promote services, facilities and policies that enable children, young people and their families to eat more healthily and be more physically active. For example, by providing walking and cycling routes and safe areas for active play, or by working with caterers in schools, colleges and early years organisations to improve the food choices on offer.

UK 1990 centile charts

UK 1990 centile charts, also referred to as the British 1990 growth reference (UK90), are charts used for children aged 4 years and older to determine whether their BMI is appropriate for their age and gender. See the National Obesity Observatory's A simple guide to classifying body mass index in children.

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8 Summary of the methods used to develop this guidance

Introduction

The reviews, commissioned report and economic modelling report include full details of the methods used to select the evidence (including search strategies), assess its quality and summarise it.

The minutes of the Programme Development Group (PDG) meetings provide further detail about the Group's interpretation of the evidence and development of the recommendations.

All supporting documents are listed in About this guidance.

Guidance development

The stages involved in developing public health programme guidance are outlined in the box below.

1. Draft scope released for consultation
2. Stakeholder comments used to revise the scope
3. Final scope and responses to comments published on website
4. Evidence reviews and economic modelling undertaken and submitted to PDG
5. PDG produces draft recommendations
6. Draft guidance (and evidence) released for consultation
7. PDG amends recommendations
8. Final guidance published on website
9. Responses to comments published on website

Key questions

The key questions were established as part of the scope. They formed the starting point for the reviews of evidence and were used by the PDG to help develop the recommendations. The overarching questions were:

How effective and cost effective are lifestyle weight management programmes in helping overweight or obese children and young people to achieve and maintain a healthy weight?

What are the essential components of an effective and cost-effective weight management programme for overweight and obese children and young people?

The subsidiary questions were:

These questions were made more specific for each review (see reviews for further details).

Reviewing the evidence

Effectiveness reviews

One review of effectiveness and cost effectiveness was conducted (Review 1).

Identifying the evidence

A number of databases were searched in May 2012 for relevant studies published in English from January 2000. See the review for details of the databases searched.

In addition, randomised controlled trials (RCTs), economic evaluations and views studies published between 1990 and 1999 were identified and included using 'snowballing' methods. (Systematic reviews, reference list checking and citation tracking were 'unpicked' from the Scopus and Science Citation Index databases.)

NICE also issued a call for evidence from registered stakeholders in May 2012.

Selection criteria

Studies were included in the effectiveness and cost effectiveness review if they:

- covered children and young people aged below 18 years who were overweight or obese, or their parents, carers and families
- considered lifestyle weight management programmes for obese and overweight children and young people that focus on diet, physical activity or behaviour change, or any combination of these factors
- measured changes in weight, diet, physical activity, wellbeing or satisfaction with the service

- were carried out in the UK (any study design)
- were RCTs and quasi-RCTs (randomisation method unclear) of 100 or more participants from Australia, Canada, New Zealand, the US and other western European countries
- reported health economic outcomes.

Studies were excluded if they:

- focused on young women under 18 who were pregnant
- were RCTs involving a population of less than 40
- focused on clinical treatment of obesity.

See Effectiveness and cost effectiveness of lifestyle weight management services for children and young people.

Other reviews

One review of barriers and facilitators to implementing lifestyle weight management programmes for children and young people was conducted (review 2).

Identifying the evidence

The same databases and websites were searched as for review 1.

Selection criteria

Studies were included in the review if they:

- considered lifestyle weight management programmes for obese and overweight children and young people that focused on diet, physical activity or behaviour change, or any combination of these factors
- were qualitative, survey and other observational studies of the barriers and facilitators to delivering such interventions or the views, perceptions and beliefs of those using and delivering them
- were conducted in Australia, Canada, New Zealand, the US or western Europe

Studies were excluded if they:

- focused on young women under 18 who were pregnant
- focused on clinical treatment of obesity
- reported intrapersonal barriers and facilitators to losing or managing weight not associated with the participation in, or delivery of, weight management programmes
- were quantitative studies that did not measure attitudes (for example, correlation studies).

See The barriers and facilitators to implementing lifestyle weight management programmes for children and young people.

Quality appraisal

Included papers were assessed for methodological rigour and quality using the NICE methodology checklist, as set out in Methods for the development of NICE public health guidance. Each study was graded (++, +, –) to reflect the risk of potential bias arising from its design and execution.

Study quality

++ All or most of the checklist criteria have been fulfilled. Where they have not been fulfilled, the conclusions are very unlikely to alter.

+ Some of the checklist criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are unlikely to alter the conclusions.

– Few or no checklist criteria have been fulfilled. The conclusions of the study are likely or very likely to alter.

The evidence was also assessed for its applicability to the areas (populations, settings, interventions) covered by the scope of the guidance. Each evidence statement concludes with a statement of applicability (directly applicable, partially applicable, not applicable).

Summarising the evidence and making evidence statements

The review data were summarised in evidence tables (see full reviews).

The findings from the reviews and expert reports were synthesised and used as the basis for a number of evidence statements relating to each key question. The evidence statements were prepared by the external contractors (see About this guidance). The statements reflect their

judgement of the strength (quality, quantity and consistency) of evidence and its applicability to the populations and settings in the scope.

Commissioned report

A short report was commissioned on practical and process issues related to the provision of lifestyle weight management services for children and young people. It synthesised responses to a questionnaire submitted by service providers. See Practical and process issues in the provision of lifestyle weight management services for children and young people.

Cost effectiveness

The existing cost effectiveness evidence was reviewed as part of review 1.

In addition, an economic model was constructed. The results are reported in: Managing overweight and obesity among children: report on economic modelling and cost consequence analysis. This was produced by M Brown, T Marsh, K Rtveladze (all from the UK Health Forum, formerly the National Heart Forum) and R Fordham, M Suhrcke, D Turner, R Little and O Filani (all from the University of East Anglia).

How the PDG formulated the recommendations

At its meetings in July, October and December 2012 and January, February and July 2013, the Programme Development Group (PDG) considered the evidence, expert reports and cost effectiveness to determine:

- whether there was sufficient evidence (in terms of strength and applicability) to form a judgement
- where relevant, whether (on balance) the evidence demonstrates that the intervention or programme/activity can be effective or is inconclusive
- where relevant, the typical size of effect (where there is one)
- whether the evidence is applicable to the target groups and context covered by the guidance.

The PDG developed recommendations through informal consensus, based on the following criteria:

- Strength (type, quality, quantity and consistency) of the evidence.

- The applicability of the evidence to the populations/settings referred to in the scope.
- Effect size and potential impact on the target population's health.
- Impact on inequalities in health between different groups of the population.
- Equality and diversity legislation.
- Ethical issues and social value judgements.
- Cost effectiveness (for the NHS and other public sector organisations).
- Balance of harms and benefits.
- Ease of implementation and any anticipated changes in practice.

Where possible, recommendations were linked to an evidence statement(s) (see The evidence for details). Where a recommendation was inferred from the evidence, this was indicated by the reference 'IDE' (inference derived from the evidence).

9 The evidence

This section lists the evidence statements from 2 reviews provided by external contractors (see What evidence is the guidance based on?) and links them to the relevant recommendations. (See Summary of the methods used to develop this guidance for the key to quality assessments.)

This section also lists 6 expert papers and 1 report commissioned by the Programme Development Group (PDG) and their links to the recommendations and sets out a brief summary of findings from the economic analysis.

The evidence statements are short summaries of evidence, in a review. Each statement has a short code indicating which document the evidence has come from. The letter(s) in the code refer to the type of document the statement is from, and the numbers refer to the document number, and the number of the evidence statement in the document.

Evidence statement number 1.2.3 indicates that the linked statement is numbered 2.3 in review 1. Evidence statement number 2.1.1 indicates that the linked statement is numbered 1.1 in review 2. EP1 indicates that expert paper 1 is linked to a recommendation and CR1 indicates that the commissioned report is linked to a recommendation.

The reviews, expert reports, commissioned report and economic analysis are available at the NICE website. Where a recommendation is not directly taken from the evidence statements, but is inferred from the evidence, this is indicated by IDE (inference derived from the evidence).

Recommendation 1: evidence statements 1.1.10, 1.1.16, 1.1.33, 1.1.34, 1.1.35, 1.1.36, 1.2.3; EP1

Recommendation 2: evidence statements 2.1.40, 2.1.41, 2.1.42; EP1, EP2, EP4, CR1; IDE.

Recommendation 3: evidence statements 1.1.10, 1.1.16, 1.1.33, 1.1.34, 1.2.2, 1.2.3, 1.4.1, 1.4.2, 2.1.13, 2.1.14, 2.1.15, 2.1.16, 2.1.17, 2.1.23, 2.1.25, 2.1.26, 2.1.27, 2.1.32, 2.1.33, 2.1.34; EP3, EP5, EP6

Recommendation 4: evidence statements 1.1.14, 1.2.3, 1.4.1, 1.4.2, 2.1.5, 2.1.8, 2.1.10, 2.1.13, 2.1.15, 2.1.25, 2.1.26, 2.1.27, 2.1.31, 2.1.33, 2.2.4, 2.2.5; EP3, EP6; IDE

Recommendation 5: evidence statements 1.1.10, 1.1.16, 1.2.3, 1.4.3, 2.1.12, 2.1.13, 2.1.15, 2.1.22, 2.1.23, 2.1.24, 2.1.28, 2.1.29, 2.1.30, 2.1.38, 2.1.39, 2.2.4, 2.2.5; EP5, CR1, IDE

Recommendation 6: evidence statements 2.1.11, 2.1.18, 2.1.19, 2.1.20, 2.1.32; EP1, CR1; IDE

Recommendation 7: evidence statements 2.1.18, 2.1.19; 2.1.20; EP1; IDE

Recommendation 8: evidence statements 1.2.7, 1.4.3, 2.1.4, 2.1.7, 2.1.8, 2.1.9, 2.1.10, 2.1.11, 2.1.14, 2.1.16, 2.1.19; EP1, EP3, CR1; IDE

Recommendation 9: evidence statements 1.1.33, 1.1.34, 1.4.1, 1.4.2, 1.4.3, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.34; EP3, CR1; IDE

Recommendation 10: evidence statements 1.1.33, 1.1.34, 1.4.1, 1.4.2, 2.1.34, 2.1.35, 2.1.36, 2.1.37; CR1; IDE

Recommendation 11: evidence statements 2.1.8, 2.1.10, 2.1.11, 2.1.38, 2.1.39, 2.1.41, 2.1.42; EP1, EP5, CR1; IDE

Recommendation 12: evidence statements 2.1.38, 2.1.39, 2.1.41, 2.1.42; EP1, EP3, EP5, EP6, CR1; IDE

Recommendation13: evidence statements 1.2.4, 2.1.8, 2.1.10, 2.1.19; EP1; IDE

Recommendation 14: EP1; IDE

Recommendation 15: evidence statements 1.4.1, 1.4.2; EP1, EP4, EP5 CR1; IDE

Evidence statements

Please note that the wording of some evidence statements has been altered slightly from those in the evidence reviews to make them more consistent with each other and NICE's standard house style.

Evidence statement 1.1.10 Child and parent/carer interventions – anthropometric outcomes

There is strong evidence from 8 studies (3 [++] randomised controlled trials [RCTs][1–3], 2 [+] RCTs[4,5], 2 [−] quasi-RCTs[6,7] and 1 [−] uncontrolled before-after [UBA] study[8]) that child/adolescent and parent interventions result in significant decreases in BMI z score based on baseline to follow-up within group measures. This evidence is directly applicable because the studies were carried out in

community settings in the USA[1,4–7], Australia[2,3] and the UK[8].

[1] DeBar 2012

[2] Collins 2011

[3] Shrewsbury 2009

[4] Savoye 2009

[5] Jelalian 2010

[6] Resnicow 2005

[7] Goldfield 2001

[8] Rudolf 2006

Evidence statement 1.1.14 Child and parent/carer interventions – wellbeing outcomes

There is strong evidence from 2 (++) RCTs[1,2] that group-based behaviour-change interventions directed at children[2]/adolescents[1] and parents have significant beneficial effects on some psychosocial outcomes. One (++) RCT[1] showed a group difference at 18 months for body satisfaction (p=0.026) and appearance (p=0.019) although no group differences on other psychosocial outcomes. A second (++) RCT[2] showed group difference at 12 months for scholastic competence (p=0.049), but not other psychosocial outcomes. Two hundred and eight overweight adolescent females aged 12–17 received a 5-month intervention delivered by nutritionists, health educators and clinical psychologists[1]. Dietitians delivered a 2-year intervention to 151 overweight and obese adolescents (52% female)[2]. This evidence is directly applicable because studies were conducted in community settings respectively in the USA, Australia and the UK.

[1] DeBar 2012

[2] Shrewsbury 2009

Evidence statement 1.1.16 Family interventions – anthropometric outcomes

There is strong evidence from 18 papers on 17 studies (5 [++] RCTs[1–5], 4 [+] RCTs[6–9], 1 [+] quasi-RCT[10], 1 [−] quasi-RCT[11] and 6 [−] UBAs[12–17]) that, for overweight and obese children and adolescents, whole family interventions whether directed at individual families[1,4,6–9,16] or group-based[2,3,5,9–14,16–18] result in significant decreases in BMI z score based on baseline to follow-up for within group measures. All but 1 UBA[12] (which focused on diet and physical activity) and 1 quasi-RCT (behaviour change only) assess the effectiveness of multi-component interventions focusing on behaviour change. This evidence is applicable because all studies are community-based, 11 were conducted in the UK[1,6,7,9,10,12–17], 3 in the USA[2,3,11], 2 in Australia[4,6] and 1 in Italy[8].

[1] Ford 2010

[2] Kalarchian 2009

[3] Kalavainen 2007

[4] McCallum 2007

[5] Wake 2009

[6] Croker 2012

[7] Hughes 2008

[8] Nova 2001

[9] Sacher 2010

[10] Coppins 2011

[11] Berkowitz 2011

[12] Norton 2011

[13] Pittson 2011

[14] Rennie 2010

[15] Robertson 2011

[16] Sabin 2007

[17] Watson 2009

[18] Watson 2011

Evidence statement 1.1.33 Meta-analyses: child and parent or whole family interventions – anthropometric outcomes

A meta-analysis of 8 studies (4 [++] RCTs[1–4], 3 [+] RCTs[5–7] and 1 [−] quasi-RCT[8]) estimated the overall effectiveness of interventions directed at children and parents/carers or whole family versus no or minimal control outcomes immediately post intervention as a significant reduction in BMI SMD of −0.22 (−0.33 to −0.10). This evidence is directly applicable because the studies were conducted in the UK and other similar community-based settings.

[1] DeBar 2012

[2] Kalarchian 2009

[3] Okely 2010)

[4] Ford 2010

[5] Jelalian 2010

[6]Croker 2012

[7] Savoye 2009

[8] Resnicow 2005

Evidence statement 1.1.34 Meta-analyses: child and parent or whole family interventions – anthropometric outcomes

A meta-analysis of 11 studies (7 [++] RCTs[1–7]; 3 [+] RCTs[8–10] and 1 [−] quasi-RCT[11]) estimated the overall effectiveness of interventions directed at children and parents/carers or whole family versus no or minimal control outcomes at longer-term follow up (6 months or more) as a non-significant reduction in BMI SMD of −0.01 (−0.11 to 0.08). This evidence is directly applicable because the studies were conducted in the UK or other similar community-based settings.

[1] Collins 2011

[2] DeBar 2012

[3] Golley 2007

[4] Kalarchian 2009

[5] McCallum 2007

[6] Nguyen 2012

[7] Wake 2009

[8] Jelalian 2010

[9] Nova 2001

[10] Savoye 2009

[11] Resnicow 2005

Evidence statement 1.1.35 Cost effectiveness

Evidence from 7 short-term health economic analyses[1–7] suggests that lifestyle weight management programmes will result in an increased cost to the NHS in terms of BMI z score gains when compared with routine care in the short term. However, overall small (and in some cases non-significant) improvements in BMI z scores can be achieved. All studies were applicable in terms of setting and participants, but data from short-term studies are limited in applicability to life-time

cost estimates and assessed as partially applicable[3,4,6,7]. Some studies provided cost data only and there was no assessment of their applicability or study limitations[1,2,5].

[1] Coppins 2011

[2] Hughes 2008

[3] Janicke 2009

[4] Kalavainen 2009

[5] Robertson 2011

[6] Wake 2008

[7] Wake 2009

Evidence statement 1.1.36 cost effectiveness

Three extrapolation models of programmes[1–3] suggest interventions that lead to even small reductions in BMI can be cost effective in the long term at conventional cost-effectiveness thresholds, provided the short-term effects on BMI, observed in trials, are sustained into adulthood. The evidence from these studies is directly applicable but there are potentially serious limitations to the studies.

[1] YHEC 2010

[2] Moodie 2008

[3] Hollingworth 2012

Evidence statement 1.2.2 Parenting skills.

There is strong evidence from 2 RCTs (both [++])[1,2] that interventions involving group-based general parenting skills training for parents of overweight and obese children aged 6–9 years[1] and 5–9 years[2] are effective in improving BMI z scores. Adding intensive lifestyle education to the parenting skills training does not appear to result in significantly greater improvements in BMI z scores[1,2], food intake or physical activity measures[1] or parenting outcomes[2]. Both interventions were delivered over 6 months by dietitians. This evidence is directly applicable because the studies

were conducted in community settings in Australia[1,2].

[1] Golley 2007

[2] Magarey 2011

Evidence statement 1.2.3 Involvement of family

There is strong evidence, post intervention, to suggest that targeting both parents and children (8 studies: 3 [++] RCTs[1–3], 2 [+] RCTs[4,5], 2 [−] quasi-RCTs[6,7] and 1 [−] UBA[8]) or whole families (18 papers from 17 studies: 5 [++] RCTs[9–13], 4 [+] RCTs[14–17], 1 [+] quasi-RCT[18], 1 [−] quasi-RCT[19] and 6 [−] UBAs[20–26]) is effective in reducing within group BMI z scores. For those studies with follow up of 6 months or more there were no clear differences. Evidence from child-only interventions (1 [++] RCT[27], 1 [+] RCT[28] and 1 [−] CBA[29]) and parent-only interventions (2 [++] RCTs[30,31], 2 [+] RCTs[32,33] and 1 [−] cluster RCT[34]) is limited and inconsistent.

[1] DeBar 2012

[2] Collins 2011

[3] Shrewsbury 2009

[4] Savoye 2009

[5] Jelalian 2010

[6] Resnicow 2005

[7] Goldfield 2001

[8] Rudolf 2006

[9] Ford 2010

[10] Kalarchian 2009

[11] Kalavainen 2007

[12] McCallum 2007

[13] Wake 2009

[14] Croker 2012

[15] Hughes 2008

[16] Nova 2001

[17] Sacher 2010

[18] Coppins 2011

[19] Berkowitz 2011

[20] Norton 2011

[21] Pittson 2011

[22] Rennie 2010

[23] Robertson 2011

[24] Sabin 2007

[25] Watson 2009

[26] Watson 2011

[27] Daley 2006

[28] Petty 2009

[29] Gately 2005

[30] Golley 2007

[31] Magarey 2011

[32] Janicke 2009

[33] Estabrooks 2009

[34] West 2010

Evidence statement 1.2.4 Referral method

There is strong evidence from a meta-analysis of 12 studies[1–12], of which 2 studies examined specialist referral[2,10], to suggest that interventions that involve specialist medical referral to a programme compared with self, GP, school or a mixture of referral methods show greater improvements in BMI z scores at end of intervention (SMD = −0.41; CI 95% = −0.64 to −0.17). The studies in the meta-analysis were conducted in applicable community settings.

[1] DeBar 2012

[2] Ford 2010

[3] Kalarchian 2009

[4] Magrey 2011

[5] Okely 2010

[6] Croker 2012

[7] Daley 2006

[8] Jelalian 2010

[9] Sacher 2010

[10] Savoye 2009

[11] West 2010

[12] Resnicow 2005

Evidence statement 1.2.7 Intensity of intervention

There is moderate evidence from 1 (−) RCT[1] and 1 (++) RCT[2] that children who attend 75% or more of the high intensity programme sessions offered, showed greater improvements in weight outcomes than those attending fewer sessions. One further ongoing (++) RCT[3] found that following up CBT therapy with telephone or text coaching was not more beneficial to BMI z scores, diet, physical activity and psychosocial outcomes than CBT alone. The studies in both meta-analysis were conducted in community settings in the USA and Australia.

[1] Resnicow 2005

[2] Karlachian 2009

[3] Shrewsbury 2009

Evidence statement 1.4.1 Most effective ways of sustaining long-term effects

There is inconsistent evidence as to whether the effects of weight management programmes are sustained long term. There is strong evidence from meta-analyses of 18 programmes (10 [++] RCTs[1–11] [11 papers], 5 [+] RCTs[12–16], 3 quasi-RCTs – 1 [+][17], 2 [−][18,19]) with BMI z outcomes, indicating improvements decrease the longer the length of follow-up. The evidence is directly applicable because all studies were conducted in community settings in the UK or other similar countries and are directly applicable.

[1] Collins 2011

[2] Daley 2006

[3] DeBar 2012

[4] Ford 2010

[5] Golley 2007

[6] Karlachian 2009

[7] Magarey 2011

[8] McCallum 2007

[9] Nguyen 2012

[10] Okely 2010

[11] Wake 2009

[12] Croker 2012

[13] Estabrooks 2009

[14] Jelalian 2010

[15] Sacher 2010

[16] Savoye 2009

[17] Nova 2001

[18] Resnicow 2005

[19] West 2010

Evidence statement 1.4.2 Most effective ways of sustaining long-term effects

Considering BMI plus other outcomes, there is inconsistent evidence from 5 (++) RCTs[1–5], 1 (+) RCT[6], 1 (+) quasi-RCT[7] and 1 [−] UBA[8] as to whether the effects of weight management programmes are sustained long term. It is not possible to determine which intervention components resulted in sustained outcomes. The evidence is directly applicable because all studies were conducted in community settings in the UK or other similar countries.

[1] Collins 2011

[2] DeBar 2012

[3] Kalavainen 2007

[4] Magarey 2011

[5] McCallum 2007

[6] Savoye 2009

[7] Coppins 2011

[8] Robertson 2011

Evidence statement 1.4.3 Duration of interventions

A meta-analysis of 8 studies (4 [++] RCTs[1–4], 3 [+] RCTs[5–7], 1 [–] RCT[8]) indicated that duration of intervention is associated with improved between-group BMI z outcomes at the end of the intervention for programmes of 8–24 months. There were no significant between group differences in BMI z scores associated with studies of a shorter duration. Between-group differences diminished over time and were not significant at 6 months. The evidence is directly applicable as the studies were conducted in the UK[1,3,5] and the USA[2,4,6-8].

[1] Daley 2006

[2] DeBar 2012

[3] Ford 2010

[4] Kalarchian 2009

[5] Croker 2012

[6] Jelalian 2010

[7] Savoye 2007

[8] Resnicow 2005

Evidence statement 2.1.1 Facilitator: weight management goals

There is evidence from 5 qualitative studies (4 [+][1–4] and 1 [−][5]) that the desire to lose weight or prevent further weight gain was a motivator for programme users to join and continue attendance at lifestyle weight management programmes. In 8 studies, perceived improvements in children's and/or young people's weight management outcomes were described by programme providers (1 [+] qualitative study[6]) and programme users (1 [++] qualitative[7], 4 [+] qualitative[2,3,8,9], and 2 process evaluations[10,11]). This evidence is directly applicable because the studies were conducted in community-based settings in the UK or other similar countries (USA)[8].

[1] Holt 2005

[2] Pescud 2010

[3] Stewart 2008

[4] Twiddy 2012

[5] Withnall 2008

[6] Jinks 2010

[7] Hester 2010

[8] Alm 2008

[9] Watson 2012a

[10] Pittson Unpublished

[11] Watson 2008

Evidence statement 2.1.2 Facilitator: health improvement goals

Health improvement or prevention of future health problems were described as incentives to joining weight management programmes by children and families in 6 qualitative studies (2 [++][1,2], 3 [+][3–5] and 1 [−][6]). Providers in 1 (+) qualitative study[7] and programme users in 4 studies (3 process evaluations[8–10], 1 [+] qualitative study[11]) perceived health improvements as a consequence of attending weight management programmes. This evidence is directly applicable because studies

were conducted in the UK in community-based settings.

[1] Morinder 2011

[2] Staniford 2011

[3] Alm 2008

[4] Holt 2005

[5] Watson 2012a

[6] Dixey 2006

[7] Jinks 2010

[8] Pittson 2011

[9] Pittson unpublished

[10] Watson 2008

[11] Stewart 2008

Evidence statement 2.1.3 Facilitator: healthier lifestyle behaviour

Weight management programmes were perceived to improve children's lifestyle behaviours, such as healthier diet and increased physical activity, by programme providers in 2 process evaluations[1,2], and also by programme users in 5 studies (1 [++] qualitative[3], 2 [+] qualitative[4,5], 1 [−] qualitative[6] and 1 process evaluation[1]). The evidence is directly applicable because the studies were conducted in the UK in community-based settings.

[1] Watson 2008

[2] Watson 2012b

[3] Hester 2010

[4] Stewart 2008

[5] Watson 2012a

[6] CI Research 2009

Evidence statement 2.1.4 Barrier: lack of programme impact on weight management

Concerns that programmes were not helping children achieve weight management goals were expressed by providers in 1 (−) qualitative study[1] and by parents in 1 (+) qualitative study[2]. In both studies the weight outcome was described in terms of weight loss, without reference to the wider aims of most weight management programmes to slow further weight gain so that BMI z scores improve as children grow. Also, children in 1 (++) qualitative study[3] stated that weight gain prompted feelings of embarrassment and shame, and led to non-attendance at booked appointments. There were different views between studies and between the participants of the same studies as to whether weight was the most important outcome. Two (+) qualitative studies[4,5] suggested psychological wellbeing was of equal or greater importance to parents, whereas weight outcomes appeared more important to some children in 2 (+) qualitative studies[4,6] and to parents in 1 (−) qualitative study[1]. This evidence is directly applicable because the studies were conducted in community settings in the UK and Sweden[3].

[1] Dixey 2006

[2] Watson 2012a

[3] Morinder 2011

[4] Twiddy 2012

[5] Stewart 2008

[6] Murtagh 2006

Evidence statement 2.1.5 Facilitator: psychological wellbeing and social outcomes

Improved psychological wellbeing such as confidence and self-esteem, or improved social

outcomes such as reduced bullying and making friends, were strong motivators for programme participation among children and their families in 10 studies (2 [++] qualitative[1,2], 6 [+] qualitative[3–8], and 2 [−] qualitative[9,10]). Programmes were perceived to be successful in improving these outcomes in 12 studies (2 [++] qualitative[11,12], 4 [+] qualitative[3,6,7,13], 2 [−] qualitative [9,10], 4 process evaluations[14–17]). Two studies[6,7] suggested that improvements in these outcomes were sufficient to maintain engagement with programmes despite lack of weight management. This evidence is directly applicable because the studies were conducted in community settings in the UK or similar countries (the USA[3], Sweden[2], Australia[5]).

[1] Gellar 2012

[2] Morinder 2011

[3] Alm 2008

[4] Holt 2005

[5] Pescud 2010

[6] Stewart 2008

[7] Twiddy 2012

[8] Murtagh 2006

[9] Dixey 2006

[10] Withnall 2008

[11] Hester 2010

[12] Staniford 2011

[13] Watson 2012a

[14] Pittson unpublished

[15] Pittson 2011

[16] Robertson 2009

[17] Watson 2008

Evidence statement 2.1.7 Facilitator: children's motivation to manage weight

High levels of children's motivation to manage weight was reported in 6 qualitative studies (3 [++][1–3], 2 [+][4,5] and 1 [−][6]) and helped promote participation in weight management programmes. This evidence is directly applicable because the studies were conducted in community settings in the UK or similar countries (the USA[1], Sweden[2]).

[1] Gellar 2012

[2] Morinder 2011

[3] Owen 2009

[4] Jinks 2010

[5] Twiddy 2012

[6] Dixey 2006

Evidence statement 2.1.8 Facilitator: awareness and acceptance of children being overweight or obese

Children, their families and providers emphasised that awareness and acceptance of children being overweight or obese was a facilitator to programme adherence. This was evidenced in 6 qualitative studies (3 [++][1–3], 2 [+][4,5], 1 [−][6]). This evidence is directly applicable because the studies were conducted in community settings in the UK or similar countries (United States[1], Sweden[2]).

[1] Gellar 2012

[2] Morinder 2011

[3] Owen 2009

[4] Jinks 2010

[5] Twiddy 2012

[6] Dixey 2006

Evidence statement 2.1.9 Barrier: lack of children's motivation

Programme users and providers shared views that children's lack of motivation was a barrier to uptake of lifestyle weight management programmes. This was described in 1 (+) qualitative[1] study and 1 process evaluation[2]. Lack of motivation was also described by programme users and providers as a barrier to programme adherence in 7 studies (1 [++] qualitative[3], 3 [+] qualitative[1,4,5], 1 [−] cross-sectional[6], 1 [−] qualitative[7], and 1 process evaluation[8]). This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (Australia[2,8], Sweden[3], Canada[5], the USA[6]).

[1] Twiddy 2012

[2] Truby 2011

[3] Morinder 2011

[4] Jinks 2010

[5] Kitscha 2009

[6] Barlow 2006

[7] Dixey 2006

[8] Brennan 2012

Evidence statement 2.1.10 Barrier: lack of awareness and acceptance of children being overweight or obese

Family and provider perspectives in 5 studies (1 [++] qualitative[1], 2 [+] qualitative[2,3], 1 [+] cross-sectional[4] and 1 [−] qualitative study[5]) indicated that some families do not acknowledge or recognise that their child is overweight or obese, which hindered programme uptake and

adherence. This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (Canada[1], Belgium[3]).

[1] Farnesi 2012

[2] Stewart 2008

[3] Murtagh 2006

[4] Braet 2010

[5] CI Research 2009

Evidence statement 2.1.11 Barrier: children's and their parents' apprehension

A strong theme identified in 5 qualitative studies (1 [++][1], 3 [+][2–4] and 1 [−][5]) was the anxiety and apprehension described by children and parents about joining weight management programmes. Concerns manifested as general fears of the unknown (for example, anxieties of meeting new people, struggling to make friends or worries of being the largest on the programme). In addition, there were reports in 3 qualitative studies (1 [+][2], 2 [−][5,6]) and 1 process evaluation[7] of programme users having negative perceptions of the programme characteristics and eligibility criteria before starting the intervention. This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (USA[1]).

[1] Gellar 2012

[2] Holt 2005

[3] Stewart 2008

[4] Watson 2012a

[5] Withnall 2008

[6] CI Research 2009

[7] Robertson 2009

Evidence statement 2.1.12 Barrier: individual and family demands

Parents and children described a range of individual and family demands, such as busy lifestyles, homework, work or family commitments. These were indicated as obstacles to programme uptake or adherence in 10 studies (2 [++] qualitative[1,2], 3 [+] qualitative[3–5], 1 [+] cross-sectional[6], 1 [−] cross-sectional[7], 1 [−] qualitative[8] and 2 process evaluations [9,10]). This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (Australia[1,9], Canada[2], Iceland[3], Belgium[6].).

[1] Perry 2008

[2] Farnesi 2012

[3] Gunnarsdottir 2011

[4] Watson 2012a

[5] Stewart 2008

[6] Braet 2010

[7] Barlow 2006

[8] CI Research 2009

[9] Brennan 2012

[10] Golley 2007

Evidence statement 2.1.13 Facilitator: parental support

Both providers and children were reported as believing parental support to be an important facilitator of successful lifestyle weight management interventions. High levels of parental support and their role in children's weight management was described in 5 qualitative studies (1 [++][1], 3 [+][2–4], 1 [−][5]). A (+) cross-sectional study[6] identified parents' motivation for treatment as a statistically significant predictor of programme completion. This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (the USA[2], Belgium[6]).

[1] Staniford 2011

[2] Alm 2008

[3] Stewart 2008

[4] Twiddy 2012

[5] Dixey 2006

[6] Braet 2010

Evidence statement 2.1.14 Facilitator: parental motivation

Parental motivation was perceived to be a critical factor in children's successful engagement with weight management programmes, as evidenced in 7 studies: 3 qualitative (2 [+][1,2], 1 [−][3]); 3 cross-sectional surveys (2 [+][4,5], 1 [−][6]) and 1 process evaluation[7]. Perceptions of high levels of parental motivation were reported in 3 studies, primarily from parents[1–3] whereas providers acknowledged high parent motivation in only 1 study[2]. Two studies found a statistically significant association between motivated parents and either programme uptake[5] or completion[4]. This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (Belgium[4], Australia[5], the USA[7]).

[1] Jinks 2010

[2] Twiddy 2012

[3] CI Research 2009

[4] Braet 2010

[5] Dhingra 2011

[6] Watson 2012b

[7] Barlow 2006

Evidence statement 2.1.15 Barrier: lack of parental support

Providers reported a lack of parental support acting as a barrier to children's weight management in 4 qualitative studies (1 [++][1], 2 [+][2,3], 1 [−][4]). Three of these studies[1,3,4] described provider perceptions that parents did not realise their role as agents of change and they looked to the programme to solve children's weight management difficulties. This evidence is directly applicable because studies were conducted in the UK in a community setting.

[1] Staniford 2011

[2] Avery 2012

[3] Twiddy 2012

[4] CI Research 2009

Evidence statement 2.1.16 Barrier: lack of parental motivation

Programme providers described how low parental motivation hindered children's weight management in 1 (+) qualitative study[1], 1 (−) qualitative study[2] and 1 process evaluation[3]. In addition, a small proportion of parents (4.7%) cited lack of family readiness to change as a reason for dropping out of a lifestyle weight management programme in 1 (−) cross-sectional study[4].This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (Belgium[4], USA).

[1] Jinks 2010

[2] CI Research 2009

[3] Watson 2012b

[4] Barlow 2006

Evidence statement 2.1.17 Barrier: lack of support from other family members

Children and parents described situations in which other family members (either partners or members outside of the nucleus family such as grandparents) did not support, and even sabotaged, children's weight management attempts. This was described in 8 qualitative studies (2 [++][1,2], 4

[+][3–6], 1 [–][7]). This evidence is directly applicable because studies were conducted in community settings in the UK or similar countries (USA[3]).

[1] Owen 2009

[2] Staniford 2011

[3] Alm 2008

[4] Hester 2010

[5] Stewart 2008

[6] Twiddy 2012

[7] Dixey 2006

Evidence statement 2.1.18 Barrier: lack of awareness

Both providers and programme users identified a lack of awareness of local weight management programmes. Providers considered poor programme publicity to be the reason why potential users were unaware of the programme in 1 process evaluation[1]. Programme users also reflected on the lack of programme awareness among children and families in 4 qualitative studies (1 [+][2], 3 [–][3–5]). Providers and users also referred to health professionals' lack of programme awareness in 1 process evaluation[6] and 1 qualitative study[4]. This evidence is directly applicable because all studies were conducted in UK community settings.

[1] Watson 2012b

[2] Watson 2012a

[3] Dixey 2006

[4] CI Research 2009

[5] Withnall 2008

[6] Watson 2008

Evidence statement 2.1.19 Role of health professionals

Both programme users and providers felt that health professionals such as GPs, nurses and health visitors should raise awareness or refer children to lifestyle weight management programmes. However, varying opinions were offered on whether this was being sufficiently implemented. Examples of awareness-raising by other professionals were reported by providers or programme users in 2 (+) qualitative studies[1,2], 1 (−) qualitative study[3] and 1 process evaluation[4]. However, providers in 3 studies (1 [+] qualitative[5], 2 process evaluations[6,7]) and programme users in 1 (+) qualitative study[8], described circumstances in which children were not referred, or inappropriate referrals were made. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (USA[8]).

[1] Stewart 2008

[2] Watson 2012a

[3] CI Research 2009

[4] Watson 2012b

[5] Jinks 2010

[6] Wolman 2008

[7] Watson 2008

[8] Woolford 2011

Evidence statement 2.1.20 Facilitator: recruitment suggestions

Programme users and providers offered varied suggestions for future programme recruitment strategies in 8 studies (2 [++] qualitative[1,2], 4 process evaluations[3–6], 2 [−] qualitative[7,8]). Increasing referral routes, recruiting through schools and family support workers, was suggested by both programme providers[1,2,4,5,7] and users[8]; advertising in local media was suggested by providers and users[7]. Providers also mentioned ensuring programme aims and characteristics were sufficiently described[3] and offering rolling programmes that allow families to join on an ongoing basis[6]. Users felt that emphasising the healthy living and fun aspects of programmes rather than weight management would promote uptake[8]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (USA[1]).

[1] Gellar 2012

[2] Jinks 2010

[3] Robertson 2009

[4] Watson 2008

[5] Watson 2012b

[6] Wolman 2008

[7] CI Research 2009

[8] Withnall 2008

Evidence statement 2.1.22 Facilitator: venue

Programme users valued the comfortable and welcoming environment of their programme venues in 2 (+) qualitative studies, which were either located in a clinic[1] or at schools[2]. Community settings and schools were suggested by providers and programme users as suitable venues in 1 (++) qualitative study[3] and 2 process evaluations[4,5]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[1]).

[1] Kitschna 2009

[2] Watson 2012a

[3] Staniford 2012

[4] Robertson 2009

[5] Watson 2008

Evidence statement 2.1.23 Facilitator: family involvement

Providers, children and families valued a delivery approach that incorporated family involvement in lifestyle weight management programmes, perceiving it to facilitate behaviour change. Users expressed these views in 11 studies (2 [++] qualitative[1,2], 4 [+] qualitative[3–6], and 5 process

evaluations[7–11]) and providers in 3 studies (1 [++] qualitative study[11], 1 [−] qualitative study[13] and 1 process evaluation[8]). Regarding specific parenting education sessions, users in receipt of these interventions liked the emphasis on positive parenting[9,10] and separate children and parent sessions addressing the same topic as each other[10]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[2,5], Canada[4], USA[1]).

[1] Gellar 2012

[2] Perry 2008

[3] Jinks 2010

[4] Kitscha 2009

[5] Pescud 2010

[6] Twiddy 2012

[7] Watson 2012a

[8] Watson 2008

[9] Golley 2007

[10] Robertson 2009

[11] Watson 2012b

[12] Staniford 2011

[13] CI Research 2009

Evidence statement 2.1.24 Facilitator: group intervention sessions with peers

There was evidence from 13 studies (2 [++] qualitative[1,2], 3 [+] qualitative[3–5], 3 [−] qualitative[6–8], 5 process evaluations[9–13]) that group-based sessions and interaction with peers were highly valued

by children and parents. Interventions incorporating group sessions or peer interactions were perceived to be opportunities to share experiences, and give and receive support from people facing similar problems. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Sweden[1]).

[1] Morinder 2011

[2] Staniford 2011

[3] Holt 2005

[4] Jinks 2010

[5] Watson 2012a

[6] CI Research 2009

[7] Dixey 2006

[8] Monastra 2005

[9] Golley 2007

[10] Pittson Unpublished

[11] Robertson 2009

[12] Watson 2008

[13] Watson 2012b

Evidence statement 2.1.25 Facilitator: goal setting

Programme users and providers shared the view that the use of goal setting (which may or may not also involve rewards) was a beneficial feature of interventions, and emphasised the importance of frequent but small and realistic goals. This was evidenced in 11 studies (2 [++] qualitative[1,2], 6 [+] qualitative[3–8], and 3 process evaluations[9–11]). This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[2,4], USA[3]).

[1] Owen 2009

[2] Farnesi 2012

[3] Alm 2008

[4] Kitscha 2009

[5] Stewart 2008

[6] Twiddy 2012

[7] Tyler 2008

[8] Watson 2012a

[9] Pittson unpublished

[10] Watson 2008

[11] Watson 2012b

Evidence statement 2.1.26 Facilitator: user-tailored interventions

Programme users and providers highly valued the interventions that were tailored to the user in 9 studies (6 qualitative: 2 [++][1,2], 2 [+][3,4], 2 [−][5,6]; 1 [+] cross-sectional survey[7] and 2 process evaluations[8,9]).

Interventions were viewed positively if they were tailored to different population groups of children (for example, age, gender, ethnicity) by parents[5,6], providers[2,8] and children[7]. There was a strong emphasis on the value of interventions addressing the individual personal needs of programme users. Programme users commented on the importance of identifying and adjusting interventions to the needs, goals, motives[1,9] or existing knowledge[3] of individual participants. Providers in 1 study recommended tailoring programmes to children's age, ethnicity, degree of obesity and their readiness for change[2]. Authors in 1 study also commented on the benefits of collaborating with families to create individual goals and strategies[4]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[3], USA[4,7] and Sweden[1]).

[1] Morinder 2011

[2] Staniford 2011

[3] Kitscha 2009

[4] Tyler 2008

[5] CI Research 2009

[6] Dixey 2006

[7] Woolford 2011

[8] Jones 2010

[9] Watson 2008

Evidence statement 2.1.27 Facilitator: monitoring and feedback

There was evidence from 10 studies that regular monitoring and feedback of weight management progress was highly valued by programme users and providers (2 [++] qualitative[1,2], 4 [+] qualitative[3–6], 2 [−] qualitative studies[7,8], and 2 process evaluations[9,10]). This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Sweden[1]).

[1] Morinder 2011

[2] Farnesi 2012

[3] Stewart 2008

[4] Jinks 2010

[5] Watson 2012a

[6] Woolford 2011

[7] CI Research 2009

[8] Dixey 2006

[9] Robertson 2009

[10] Watson 2012b

Evidence statement 2.1.28 Facilitators: scheduling suggestions

Suggestions for improving programme scheduling were offered by programme users and providers in 9 studies (1 [++] qualitative[1], 2 [+] qualitative[2,3], 1 [+] qualitative[4], 1 [+] cross-sectional survey[5] and 4 process evaluations[6–9]). More flexible appointment times, such as in the evening or weekends were suggested by programme users[2–6,9] and providers[2,7]. Programme users also wanted increased frequency of appointments to maintain their motivation[1,2]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[9], USA[4]).

[1] Owen 2009

[2] Jinks 2010

[3] Watson 2012a

[4] Cote 2004

[5] Jones 2010

[6] Robertson 2009

[7] Watson 2008

[8] Watson 2012b

[9] Truby 2011

Evidence statement 2.1.29 Barrier: inconvenient intervention scheduling

Scheduling of interventions (for example, timing, length of individual sessions) were important influences on programme users but no clear consensus was described on what the scheduling should be.

Potential users cited inconvenient timing of programmes as a reason for not joining programmes in 1 (−) qualitative study[1] and 2 process evaluations[2,3]. Programme attendees also reported difficult scheduling as a barrier to continued participation in 10 studies (2 [++] qualitative studies[4,5], 2 [+] qualitative studies[6,7], 1 [+] cross-sectional survey[8], 3 process evaluations[9–11], 1 [−] cross-sectional[12] and 1 [−] qualitative study[13]). Programme users in 1 survey[12] disagreed on how the frequency of appointments resulted in their attendance or drop-out. 11.6% dropped out of programmes because appointments were not frequent enough, whereas 7% stated they were too frequent. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[3], Canada[4], USA[8,12]).

[1] CI Research 2009

[2] Pittson unpublished

[3] Truby 2011

[4] Farnesi 2012

[5] Owen 2009

[6] Jinks 2010

[7] Kitscha 2009

[8] Cote 2004

[9] Golley 2007

[10] Robertson 2009

[11] Watson 2008

[12] Barlow 2006

[13] CI Research 2009

Evidence statement 2.1.30 Barrier: venue location

Negative comments regarding programme venues were expressed in 6 studies (3 [+] qualitative[1–3], 1 [−] qualitative[4], 1 [−] cross-sectional survey[5] and 1 process evaluation[6]). Challenges relating to locations being too far away, difficult to reach, or hindered by traffic problems at peak times were described by both providers[2,6] and users[1–6]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[3] and USA[5]).

[1] Watson 2012a

[2] Jinks 2010

[3] Kitschna 2009

[4] CI Research 2009

[5] Barlow 2006

[6] Robertson 2009

Evidence statement 2.1.31 Barrier: challenges in goal setting

Challenges of setting goals within programmes were highlighted by users and providers in 3 studies (1 [++] qualitative[1], and 2 process evaluations[2,3]). Programme users spoke negatively about too many goals being set[2], long-term goals not being revisited or monitored[3] or goals not being matched to those valued by the child[1]. Providers described difficulties in designing goals for users[3]. This evidence is directly applicable because all studies conducted in community settings in the UK or similar countries (Sweden[1], Australia[2]).

[1] Morinder 2011

[2] Brennan 2012

[3] Watson 2012b

Evidence statement 2.1.32 Facilitator: practical intervention elements

A recurring theme within studies was that programme users particularly liked the practical elements of their intervention sessions, as evidenced in 11 studies: 7 qualitative (1 [++][1], 4 [+][2–5], 2 [–][6,7]) and 4 process evaluations[8–11].

Regarding dietary components, children and/or parents enjoyed cookery lessons in particular or wanted the programme to incorporate more of these[2,4,6,11]. Specific directive information was also valued, including the provision of recipes[7], eating plans[1,8] or messages that 'told them what to do'[5]. Education on food in supermarkets was also valued[2,7], with 1 study suggesting that education on labels should be followed up with trips to the supermarket[2].

Regarding physical activity education, children consistently commented on enjoying games and physical exercise sessions, and views indicated they would like more activities within the intervention[3,6,9,11]. Some parents also wanted more exercise sessions[2,4,10], although some parents expressed negative views of physical activity sessions[2]. Variety in the available activities was also valued[4,11]. This evidence is directly applicable because all studies were conducted in community settings in the UK.

[1] Owen 2009

[2] Jinks 2010

[3] Staniford 2011

[4] Watson 2012a

[5] Woolford 2011

[6] CI Research 2009

[7] WIthnall 2008

[8] Golley 2007

[9] Pittson Unpublished

[10] Robertson 2009

[11] Watson 2008

Evidence statement 2.1.33 Facilitator: behavioural change components

Parents and children had positive views of the behavioural change elements in the programmes they received, evidenced in 7 studies: 5 qualitative (1 [++][1], 2 [+][2,3], 2 [−][4,5]) and 2 process evaluations[6,7]. Positive comments were made regarding: understanding the 'how and why' of their eating behaviour[1,6], learning about their feelings and being able to talk about how they feel[5], or learning about stress and how to cope with it[7]. One study reported that users believed lifestyle weight management programmes should include physical activity, nutrition and psychological components[2]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[1], the USA[5]).

[1] Farnesi 2012

[2] Staniford 2011

[3] Stewart 2008

[4] CI Research 2009

[5] Monastra 2005

[6] Golley 2007

[7] Robertson 2009

Evidence statement 2.1.34 Barrier: relevance of intervention to home life

Seven studies described children's and/or their families' concerns with the relevance and ease of managing their weight outside in their home life or after leaving their programme (4 [++][1–4], 1 [+][5], 1 [−][6] qualitative and 1 [+][7] cross-sectional study). This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Belgium)[7].

[1] Owen 2009

[2] Staniford 2011

[3] Morinder 2011

[4] Hester 2010

[5] Stewart 2008

[6] CI Research 2009

[7] Braet 2010

Evidence statement 2.1.35 Facilitator: post-intervention support and follow-up

Seven studies (1 [++] qualitative[1], 2 [+] qualitative[2,3], 2 [−] qualitative[4,5], 2 process evaluations[6,7]) identified that the continuation of professional support following completion of the programme was important to users. Families wanted support to continue and thought it would be helpful for ensuring that weight management goals were continued.

Very little detail was provided regarding the forms this support should take. Parents in 1 study[4] suggested follow-up letters, meetings or continuation sessions. Parents in another study[5] proposed a long-term financial subsidy to encourage children and young people to maintain participation in formal activities.

This evidence is directly applicable because all studies were conducted in UK community settings.

[1] Staniford 2011

[2] Stewart 2008

[3] Watson 2012a

[4] CI Research 2009

[5] Withnall 2008

[6] Golley 2007

[7] Robertson 2009

Evidence statement 2.1.36 Facilitator: personal strategies to sustain weight management behaviour

Parents in 3 studies (2 [+] qualitative[1,2], 1 process evaluation[3]) described a range of strategies they employed to facilitate continuation of their children's weight management behaviour. These included staying consistent[2,3], setting planned routines[3], enjoying their new healthy lifestyle[3], and seeking additional support[1]. This evidence is directly applicable because all studies were conducted in the UK community settings.

[1] Jinks 2010

[2] Watson 2012a

[3] Golley 2007

Evidence statement 2.1.37 Barrier: attendance at follow-up sessions

Despite strong support for professional follow-up after completion of weight management programmes, children and parent views in 3 studies suggested that the content and timing of potential support may affect the uptake of sessions if they did not appeal to programme users or conflicted with their competing interests. This was indicated in 3 qualitative studies: (1 [++][1], 1 [+][2] and 1 [−][3]). This evidence is directly applicable because studies were conducted in the UK community settings[1,3] or similar countries (Canada[2]).

[1] Staniford 2011

[2] Kitscha 2009

[3] CI Research 2009

Evidence statement 2.1.38 Facilitator: building good child/family-provider relationships

There was evidence from 15 studies (3 [++] qualitative[1–3], 6 [+] qualitative[4–9], 4 process evaluations[10–13], and 2 [−] qualitative[14,15]) of children's and parents' perspectives, that provider characteristics were key factors for continued participation in weight management programmes and behaviour change attempts. Valued characteristics included the encouraging, non-judgemental tone of providers[1,3,5,7,9,14], and continuity of staff[6]. Parents also appreciated the role providers had in acting as voices of authority that parents could rely on to educate children[3,7]. Provider perspectives in 2 of these studies also suggested that staff were aware of the importance of establishing good relationships with programme users and their families[1,6]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[1],Sweden[2], the USA[9], Australia[14]).

[1] Farnesi 2012

[2] Morinder 2011

[3] Owen 2009

[4] Alm 2008

[5] Holt 2005

[6] Twiddy 2012

[7] Watson 2012a

[8] Stewart 2008

[9] Woolford 2011

[10] Golley 2007

[11] Jones 2010

[12] Robertson 2009

[13] Watson 2008

[14] Monastra 2005

[15] CI Research 2009

Evidence statement 2.1.39 Barrier: negative opinions of providers' characteristics

Six studies (2 [++] qualitative[1,2], 2 [+] qualitative[3,4], 1 process evaluation[5], 1 [−] qualitative[6]) described how negative opinions of provider dynamics influenced user engagement. Children and parents provided examples of poor user-provider relationships and suggested they hindered engagement with programmes or weight management behaviour[1–5]. Providers also recognised the negative effect bad relationships with users[1] and staff discontinuity[6] could have on programme adherence[6]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[1], Sweden[2]).

[1] Farnesi 2012

[2] Morinder 2011

[3] Stewart 2008

[4] Twiddy 2012

[5] Watson 2012b

[6] CI Research 2009

Evidence statement 2.1.40 Facilitator: collaborative multi-disciplinary teams

Three studies (1 [+] qualitative study[1], 1 process evaluation[2] and 1 [+] cross-sectional survey[3]) indicated that providers highly valued working within effective collaborative multidisciplinary teams. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[3]).

[1] Jinks 2010

[2] Watson 2008

[3] Gunn 2008

Evidence statement 2.1.41 Facilitator: provider highly valued opportunities for training

Three studies (1 [+] qualitative[1], 1 process evaluation[2] and 1 [+] cross-sectional survey[3]) reported that providers were keen to receive relevant training that would help them gain necessary skills to effectively deliver interventions. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[2]).

[1] Jinks 2010

[2] Gunn 2008

[3] Watson 2012b

Evidence statement 2.1.42 Barrier: provider gaps in knowledge

Three studies (1 [+] qualitative study[1], 1 [+] cross-sectional study[2] and 1 process evaluation[3]) referred to providers' perceptions of their skills and knowledge. Three studies indicated some providers felt unqualified to deliver interventions, specifically interventions that were broad in their nature, or were delivered to a varying user group who sometimes had complex psychosocial needs. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[2]).

[1] Jinks 2010

[2] Gunn 2008

[3] Watson 2012b

Evidence statement 2.2.4 Pre-adolescent children (6–13 years)

A wide range of themes was described in 16 studies of school-age children: 7 qualitative (3 [++][1–3], 3 [+][4–6], 1 [–][7]), 1 (+) correlation[8], 2 cross-sectional[9,10], 6 process evaluations[11–16]. However none of the studies were designed to explore differences in barriers and facilitators compared with other age groups.

Commonly shared facilitators across studies were the importance of non-weight outcomes such as psychological wellbeing[3,4,5,14–16], social outcomes such as making friends[3,5,14] and reduced bullying[3,17]; interventions with a whole-family approach[2–412,14–16]; positive provider characteristics[1,5,11,12,16]; group-based sessions with peers[12,14,15,16]; regular monitoring and feedback[1,5,14,16]; and post-intervention support[3,5,12,14]. Commonly shared barriers across studies were poor relationships of providers with children and/or their parents[1,5,16]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Canada[1], Australia[2,4], the USA[6,7], Iceland[8], Belgium[9]).

[1] Farnesi 2012

[2] Perry 2008

[3] Staniford 2011

[4] Pescud 2010

[5] Stewart 2008

[6] Tyler 2008

[7] Pinard 2012

[8] Gunnarsdottir 2012

[9] Braet 2010

[10] Gunn 2008

[11] Jones 2010

[12] Golley 2007

[13] Pittson 2011

[14] Robertson 2009

[15] Watson 2008

[16] Watson 2012b

[17] Murtagh 2006

Evidence statement 2.2.5 Adolescents

A wide range of themes was described in 10 studies of adolescents (2 [++] qualitative[1,2], 3 [+] qualitative[3–5], 1 [+] cross-sectional survey[6], 4 process evaluations[7–10]). However none of the studies were designed to explore differences in barriers and facilitators for adolescents when compared with other age groups. Facilitators shared across 3 or more studies were the importance of psychological wellbeing as an outcome[2,3,5] and positive provider characteristics[2,5,6]. Commonly shared barriers across studies were: perceived lack of parental support[1,4,5,10] and concern regarding unintended consequences of weight management programmes[2,3,6]. This evidence is directly applicable because all studies were conducted in community settings in the UK or similar countries (Australia[7–10] the USA[1,5,6] and Sweden[2]).

[1] Gellar 2012

[2] Morinder 2011

[3] Hester 2010

[4] Avery 2012

[5] Alm 2008

[6] Woolford 2011

[7] Dhingra 2011

[8] Truby 2011

[9] Kornman 2010

[10] Brennan 2012

Expert papers and commissioned report

- Expert papers 1–6.

- Commissioned report.

For details see What evidence is the guidance based on?

Economic modelling

The economic model considered the BMI trajectory of children in 3 different age groups (2–5 years, 7–11 years and 12–17 years). It considered boys and girls separately. It also considered 3 starting weights for each age group and both sexes. The starting weights considered were: the borderline between healthy weight and overweight, between overweight and obese, and between obese and what the model called morbidly obese.

The model examined what happened to each cohort if there were no intervention. It estimated the average (mean) weight and quality of life for the cohort on an annual basis and its expected life expectancy. It also estimated the costs of any health problems they would face during their lifetime. The model was then set up to answer 2 questions:

- What would happen to the quality of life and the life expectancy of each of these groups of children or young adults if an intervention from the evidence review were applied?
- How would the future costs of treating diseases change as the result of the intervention?

The difference between the subsequent lifelong pathways of these 2 hypothetical situations (that is, 'with an intervention' and 'without an intervention') was expressed in terms of quality-adjusted life years (QALYs) gained from the intervention. It was also expressed in terms of the cost of the intervention less the future costs saved. An intervention is generally considered to be cost effective if the cost per QALY gained is less than about £20,000 to £30,000.

The model estimated that an intervention costing £100 per person would be cost effective if a child or young person could be moved to a lower weight trajectory (as little as 0.5% lower) than it would have been without the intervention. However, this would be the case only if the 0.5% weight difference were to be maintained throughout life. If, on average, they regained the weight within 10 years or less it is estimated that the intervention would no longer be cost effective.

10 Gaps in the evidence

The Programme Development Group (PDG) identified a number of gaps in the evidence related to the programmes under examination, based on an assessment of the evidence and expert comment. These gaps are set out below.

1. There is a lack of data on how to involve male children and young men in lifestyle weight management programmes.

(Source: evidence review 1)

2. There is a lack of data on effective lifestyle weight management programmes for children and young people with disabilities, learning difficulties or other special needs.

(Source: evidence reviews 1 and 2)

3. There is a lack of data on effective and cost effective approaches to weight management for children younger than 6 years, including the views of their parents and families. In addition, there is a lack of data on the barriers to, and facilitators for, encouraging these children to complete a lifestyle weight management programme.

(Source: evidence reviews 1 and 2)

4. There is a lack of data on how the barriers to, and facilitators for, participating in a lifestyle weight management programme vary according to socioeconomic group, ethnicity, gender and age.

(Source: evidence review 2)

5. There is a lack of standardised reporting for the behavioural therapy and cognitive behavioural therapy (CBT) components used by programme developers. This makes it difficult to evaluate these components of a lifestyle weight management programme.

(Source: expert paper 6)

6. There is a lack of evidence on the lifetime effects of weight management programmes. (Such data are crucial for assessing cost effectiveness.)

(Source: Economic modelling report)

The Committee made 4 recommendations for research into areas that it believes will be a priority for developing future guidance. These are listed in Recommendations for research.

11 Membership of the Programme Development Group (PDG) and the NICE project team

Programme Development Group

PDG membership is multidisciplinary. The Group comprises public health practitioners, clinicians, local authority officers, representatives of the public, academics and technical experts as follows.

Peymane Adab
Reader in Public Health, Department of Public Health, Epidemiology and Biostatistics, University of Birmingham

Paige Ataou
Community member

Claire Bennett
Senior Health Improvement Lead: Food and Health, Royal Borough of Greenwich

Julia Burrows
Consultant in Public Health, City of Bradford Metropolitan District Council (formerly employed by NHS Airedale, Bradford and Leeds)

Janice Christie
Senior Lecturer in Public Health and Primary Care, City University, London

Elisabeth Fenwick
Professor of Health Economics, Health Economics and Health Technology Assessment, Institute of Health and Wellbeing, University of Glasgow

Orla Flannery
Senior Lecturer in Sport and Exercise Psychology, University of Gloucestershire

Rajeev Gupta
Consultant Paediatrician, Barnsley Foundation Hospital NHS Trust and Honorary Senior Clinical Lecturer, University of Sheffield

Julian Hamilton-Shield
Professor in Diabetes and Metabolic Endocrinology, Bristol Royal Hospital for Children and University of Bristol

Alexandra Jones
Targeted and Commissioning Team Manager, Wigan Council

Alan Maryon-Davis (Chair)
Honorary Professor of Public Health, Department of Primary Care and Public Health Sciences, King's College London School of Medicine

Helen Pittson (Until November 2012)
Service Manager, NHS Telford and Wrekin

Sarah Mills
Public Health Programme Manager, NHS England Area Team, Arden, Herefordshire and Worcestershire (formerly Commissioning Manager, Birmingham Public Health).

Paula Watson
Lecturer/Senior Lecturer in Exercise and Health Psychology, Liverpool John Moores University

Laura Webber
Modelling Researcher, UK Health Forum, (formerly the National Heart Forum)

Jane Wells
Public Health Consultant (Formerly Assistant Director of Public Health, NHS Berkshire)

Stephen Westgarth
Consultant Child and Adolescent Psychiatrist, Northumberland, Tyne and Wear NHS Foundation Trust and Medical Director of Child Psychiatry UK.

Sarah West-Sadler
Community member

NICE project team

Mike Kelly
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Tricia Younger (until Dec 2012)
Associate Director

Jane Huntley (from Dec 2012)
Associate Director

Karen Peploe
Lead Analyst

Nicola Ainsworth (up to April 2013)
Analyst

Hugo Crombie
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Patricia Mountain
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Rukshana Begum
Coordinator

Sue Jelley
Senior Editor

Alison Lake (up to May 2013)
Editor

Susie Burlace (from June 2013)
Editor

12 About this guidance

Why has guidance been produced?

NICE public health guidance makes recommendations on the promotion of good health and the prevention of ill health.

The Department of Health (DH) asked the National Institute for Health and Care Excellence (NICE) to produce this guidance.

The guidance should be implemented alongside other guidance and regulations (for more details see Implementation, below, and Related NICE guidance respectively).

How was this guidance developed?

The recommendations are based on the best available evidence. They were developed by the Programme Development Group (PDG).

Members of the PDG are listed in Membership of the Programme Development Group and the NICE project team.

For information on how NICE public health guidance is developed, see the NICE public health guidance process and methods guides.

What evidence is the guidance based on?

The evidence that the PDG considered included:

- Evidence reviews:
  - Review 1: 'Effectiveness and cost effectiveness of lifestyle weight management services for children and young people', was carried out by Support Unit for Research Evidence (SURE), Cardiff University. The principal authors were: Fiona Morgan, Alison Weightman, (SURE, Cardiff University) Sarah Whitehead (DECIPHer, Cardiff University) and Sinead Brophy (DECIPHer, Swansea University).
  - Review 2: 'The barriers and facilitators to implementing lifestyle weight management programmes for children and young people', was carried out by SURE, Cardiff University. The principal authors were: Ruth Turley, Alison Weightman, (SURE, Cardiff University), Elizabeth Halstead (Bangor University) and Helen Morgan (SURE, Cardiff University).
- Economic modelling: 'Managing overweight and obesity among children economic modelling report', was carried out by the UK Health Forum, (formerly the National Heart Forum) and the University of East Anglia. The principal authors were: Martin Brown, Tim Marsh and Ketevan Rtveladze (UK Health Forum) and Ric Fordham (University of East Anglia).
- Commissioned report: 'Practical and process issues in the provision of lifestyle weight management services for children and young people', was carried out by GK Research. The author was Graham Kelly.

- Expert papers:
  - Expert paper 1 'Findings of the former Childhood Obesity National Support Team' by Kim Hastie, Head of former Childhood Obesity National Support Team.
  - Expert paper 2 'Implications of the transition of public health responsibilities to local government' by Helen Walters, Greater London Authority
  - Expert paper 3 'Psychological considerations for lifestyle weight management programmes for children and young people, and the use of behaviour change theories' by Andrew Hill, University of Leeds
  - Expert paper 4 'Choosing outcome measures for lifestyle weight management programmes for children' by Maria Bryant, University of Leeds
  - Expert paper 5 'A population-level evaluation of a family-based community intervention for childhood overweight and obesity' by Catherine Law and Helen Roberts, Institute of Child Health, University College, London
  - Expert paper 6 'Effective Behavioural Components for Childhood weight management programmes' by Pinki Sahota, Leeds Metropolitan University.

In some cases the evidence was insufficient and the PDG has made recommendations for future research.

Status of this guidance

The draft guidance, including the recommendations, was released for consultation in April 2013. At its meeting in July 2013, the PDG amended the guidance in light of comments from stakeholders and experts. The guidance was signed off by the NICE Guidance Executive in September 2013.

The guidance is available on NICE's website. The recommendations are also available in a pathway for professionals whose remit includes public health and for interested members of the public.

Implementation

NICE guidance can help:

- Commissioners and providers of NHS services to meet the requirements of the NHS outcomes framework 2013–14. This includes helping them to deliver against domain one: preventing people from dying prematurely.

- Local health and wellbeing boards to meet the requirements of the Health and Social Care Act (2012) and the Public health outcomes framework for England 2013–16.
- Local authorities, NHS services and local organisations determine how to improve health outcomes and reduce health inequalities during the joint strategic needs assessment process.

NICE has developed tools to help organisations put this guidance into practice.

Updating the recommendations

This guidance will be reviewed 3 years after publication to determine whether all or part of it should be updated. Information on the progress of any update will be posted on the NICE website.

Your responsibility

This guidance represents the views of the Institute and was arrived at after careful consideration of the evidence available. Those working in the NHS, local authorities, the wider public, voluntary and community sectors and the private sector should take it into account when carrying out their professional, managerial or voluntary duties.

Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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