

## Why is this issue important?

Obesity in childhood can cause social, psychological and health problems. It is linked to obesity later in life and poor health outcomes as an adult. Children who are at risk of obesity are twice as likely to develop type 2 diabetes.<sup>1</sup>

Environmental and behavioural factors can increase the risk that a child is overweight.

- Diet, physical activity and sedentary behaviour patterns are strongly associated with body mass index (BMI).<sup>2</sup>
- Children with parents who are a healthy weight are less likely to be at risk of being overweight than children of obese parents.<sup>2</sup>

The 2016 Scottish Health Survey reported that more than one-quarter of children, aged two to 15 years, were at risk of being overweight, with one in seven at risk of obesity.<sup>2,3</sup>

## Are there inequalities to consider?

Children living in deprived areas are more at risk of being overweight than those living in more affluent areas.

## Challenges and solutions

Interventions to prevent and manage childhood obesity can be supported by changes to the environment in which children grow up.<sup>4</sup> For example, reformulation of food and drinks high in fat, sugar and salt;<sup>5</sup> restrictions on advertising/sponsorship from junk food retailers aimed at children through social media or at family and sporting events;<sup>6</sup> and regulating portion size of out-of-home food.<sup>7</sup>

## Prevention interventions

A multi-component and holistic approach which aims to improve diet and physical activity in numerous areas of children's lives, including the environment in which they live, is more likely to achieve long-term change than focusing on a single aspect of behaviour. Interventions that have shown positive effects are:<sup>4,7</sup>

- integrating healthy eating, body image and physical activity into school curriculum
- increased physical activity sessions/movement skills throughout the school week
- improved nutritional quality of school food
- environmental and cultural practices that support healthy food and physical activity
- support for teachers (and other staff) to implement health promotion activities
- parental support and home activities that encourage children to be more active, eat more healthily and reduce screen-based activities.

## Weight management programmes

Weight maintenance rather than weight loss can be the goal of weight management programmes in children and adolescents, as their BMI will improve as they grow taller.<sup>8</sup>

Better weight outcomes are associated with programmes that:

- adopt a multi-component approach. Interventions that include dietary and physical activity elements along with behavioural strategies are more effective than single component programmes.<sup>9,10,11</sup>
- target parents and children or whole families. Child-only interventions, particularly for younger children (under 12), are less effective in reducing BMI.<sup>10</sup> Family-based programmes appear to be equally effective across the social gradient.<sup>12</sup>
- are longer and more intense.<sup>10,13,14</sup> Programmes lasting at least six months have been found to be more effective than shorter interventions.<sup>10,14</sup> Higher contact time was also associated with increased effectiveness.

## Examples of positive action

- The **Daily Mile** is a simple idea aimed at getting primary school children to exercise more. Introduced by a primary school head teacher, the daily mile asks every child to run 1 mile each day. The programme is free and easy to implement and teachers have reported improvements not just in pupils' fitness but in concentration, mood and general wellbeing.

- The Maternal and Early Years website has more examples: **Child healthy weight** and **How can I help address inequalities and support child healthy weight?**

## Main indicators<sup>†</sup>

- Child obesity in Primary 1 (CYP, HWB).

## Linked indicators

- Active travel to school (CYP).
- Breastfeeding at 6–8 week review (CYP, HWB).
- Maternal obesity (CYP).

## Resources

- NHS Health Scotland's e-learning. **Raising the issue of child healthy weight.**
- Martin L, Bauld L, Angus K. **Rapid evidence review. Impact of promotions on high fat, sugar and salt (HFSS) food and drink on consumer purchasing and consumption behaviour and the effectiveness of retail environment interventions.** NHS Health Scotland; 2017.
- NHS Health Scotland. **Healthy, happy kids...Simple steps for a healthy weight at home.** Edinburgh: NHS Health Scotland; 2016.
- Mackison D. **Evidence for interventions that reduce socio-economic inequalities in childhood obesity.** NHS Health Scotland; 2015.
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- Mackie P, McCann A. **Report of the Scottish Public Health Obesity special interest group: expert group on the development of the child healthy weight programme in Scotland.** ScotPHO; 2014.
- NICE. **Obesity in children and young people: prevention and lifestyle weight management programmes [QS94];** 2015.
- Scottish Government. **A Healthier Future: Scotland's Diet & Healthy Weight Delivery Plan.** Edinburgh: SG; 2018.
- NHS Health Scotland web page. **Diet and obesity.**
- ScotPHO. **Children and young people: key points.**

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<sup>†</sup> The letters in brackets indicate the profile the indicator can be found in: CYP = children and young people's profile; HWB = health and wellbeing profile.

## References

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- <sup>1</sup> SIGN. **Management of obesity. SIGN guidelines 115.** Edinburgh: SIGN; 2010.
- <sup>2</sup> Scottish Government. **Obesity indicators.** Edinburgh: Scottish Government; 2016.
- <sup>3</sup> Bardsley, D. Obesity In: McLean J, Christie S, Gray L. (Eds). **Scottish Health Survey. Volume 1: Main report. 2016 edition.** Edinburgh: Scottish Government; 2018:134–158.
- <sup>4</sup> Martin L. **Evidence for environmental interventions to prevent childhood overweight and obesity within schools.** Edinburgh: NHS Health Scotland; 2017.
- <sup>5</sup> Hawkes C, Smith TG, et al. **Smart food policies for obesity prevention.** Lancet 2015; 385:2410–21.
- <sup>6</sup> Roberto CA, Swinburn B, et al. **Patchy progress on obesity prevention: Emerging examples, entrenched barriers, and new thinking.** Lancet 2015;385:2400–9.
- <sup>7</sup> Waters E, de Silva-Sanigorski A, et al. **Interventions for preventing obesity in children.** Cochrane Database of Systematic Reviews; 2011.
- <sup>8</sup> NICE. **Weight management: lifestyle services for overweight or obese children and young people. PH47.** London: NICE; 2013.
- <sup>9</sup> Kothandan SK. **School based interventions versus family based interventions in the treatment of childhood obesity – a systematic review.** Archives of Public Health 2014;72(1):1–17.
- <sup>10</sup> Loveman E, Al-Khudairy L, et al. **Parent-only interventions for childhood overweight or obesity in children aged 5 to 11 years.** Cochrane Database of Systematic Reviews 2015.
- <sup>11</sup> Colquitt JL, Loveman E, et al. **Diet, physical activity, and behavioural interventions for the treatment of overweight or obesity in preschool children up to the age of 6 years.** Cochrane Database of Systematic Reviews; 2016.
- <sup>12</sup> Hillier-Brown FC, Bambra CL, et al. **A systematic review of the effectiveness of individual, community and societal level interventions at reducing socioeconomic inequalities in obesity among children.** BMC Public Health 2014;14:834.
- <sup>13</sup> Ho M, Garnett SP, et al. **Effectiveness of lifestyle interventions in child obesity: Systematic review with meta-analysis.** Pediatrics 2012;130(6): e1647–71.
- <sup>14</sup> van Hoek E, et al. **Effective interventions in overweight or obese young children: Systematic review and meta-analysis.** Childhood Obesity 2014;10(6):448–60.