

SUMMARY OF THE EVIDENCE BASE UNDERPINNING THE THEMES

Themes for action	Epidemiological or experimental evidence	Practical evidence from interventions
PARENTING		
1. Encourage parents and carers to model a healthy lifestyle	An association between parents' lifestyle and their children's has been demonstrated	An RCT of PATCH, an intervention directed at parents of obese children showed parental lifestyle change was a key component for successful obesity management
2. Help parents enhance their parenting skills and develop an authoritative approach towards their children's lifestyles	An association between parenting styles and children's obesity has been demonstrated	Two RCTs that focus on promoting authoritative parenting (PATCH and Triple P) were effective in both lifestyle change and reduction of obesity
3. Encourage parents and carers to take a whole family approach		The Cochrane systematic review for treatment of obese children concluded that interventions taking a family approach were more effective than those primarily targeting the obese child
EATING & FEEDING BEHAVIOUR		
4. Encourage responsive feeding	The association between the development of obesity in childhood and authoritarian, indulgent or neglectful feeding styles in infancy has been demonstrated	A small RCT of an intervention with a focus on responsive feeding shows some promising results. Others are being developed
5. Encourage positive family mealtimes	The association between family meals and healthy weight, diet, success at reducing weight and long term healthy eating habits is reported	Family meals are a component of some effective RCTs e.g. Triple P and PATCH
6. Find alternatives to food for comfort and to encourage good behaviour	There is good experimental evidence that using food for rewards changes children's attitudes to food	
NUTRITION		
7. Encourage exclusive breast feeding for 6 months	Meta-analysis shows an association between breastfeeding and healthy weight through to adolescence and beyond. There is a 'dose response' with protection from obesity increasing with duration and exclusive breastfeeding.	There are no breastfeeding interventions that specifically focus on obesity as an outcome
8. Introduce solid foods at 6 months	An association between early introduction of solids and later obesity has been demonstrated	No interventions have specifically focused on timing of weaning as a means to prevent obesity. A few interventions under development (e.g. EMPOWER) include it as a component

9. Ensure portion sizes are appropriate	Epidemiological evidence from older children and adults that portion sizes have increased over time in parallel to the rise in obesity	
10. Increase acceptance of healthy foods – including fruits and vegetables.	Educational and social marketing tactics have been shown to positively influence food preferences	A small RCT has shown it is possible to influence young children's food preferences (but did not attempt to measure effect on obesity)
11. Reduce availability and accessibility of energy dense foods in the home	Consumption of energy dense foods by preschoolers has increased since the 1970s. Those who eat more energy dense diets are more likely to develop obesity	One RCT (PATCH) focused on foods in the home and found more successful weight reduction when healthy changes in the larder were made
12. Reduce consumption of sweet drinks and increase the consumption of water	There is an association between excess consumption of sweet drinks and childhood obesity, adult obesity, diabetes, heart disease and osteoporosis	School based RCTs have been effective at reducing sweet drink consumption. Some have had an effect on weight too

PLAY, INACTIVITY AND SLEEP

13. Encourage active play	Young children differ in the form that physical activity takes. Play brings many benefits to physical, mental and social development. Epidemiological evidence shows that children are more active outdoors	Most interventions have focused on curriculum development in day care with some impact on obesity. No preschool interventions have had a specific focus on outdoor play
14. Create safer play-space at home	Studies show that preschool children are very sedentary. There is no evidence exploring this in relationship to appropriate play space.	No interventions have focused specifically on play space at home
15. Reduce sedentary behaviour and screen time	The evidence is currently under review by an expert panel. Numerous studies show an association between TV viewing and obesity although it is unclear whether this is due to sedentary aspects of behavior or other factors.	TV focused interventions in school and clinical trials have been effective in reducing obesity. In preschool children watching time was reduced without a demonstrable effect on obesity.
16. Ensure children get a good night's sleep	There is a strong association between duration of sleep in early childhood and obesity.	No research has been carried out

PRACTITIONERS' EFFECTIVENESS

17. Recognise babies and toddlers at particular risk of obesity	Longitudinal studies of high quality show an association between obesity in childhood and genetic, familial, gestational and environmental factors.	An intervention is under development in the UK to see if home visiting can reduce the risk of obesity for at risk babies.
18: Provide training on how to help parents make lifestyle changes	Qualitative research indicates that traditional approaches are unhelpful and that professionals lack confidence and self efficacy	An RCT of motivational interviewing and evaluation of HENRY indicate that these two approaches are promising
19. Encourage practitioners to model healthy lifestyles themselves	Surveys show that professionals' self efficacy is influenced by their weight status.	A small RCT in the USA showed clients awareness of staff engaging in healthy behaviour.

GAPS IN THE EVIDENCE

While there is rich experimental evidence relating to the development of early lifestyle behaviour in childhood and obesity, there are a paucity of well evaluated interventions for children aged 0 to 5 years, especially babies and toddlers.

The following gaps in the evidence base are worthy of note:

Parenting

- More research is needed on the effect of parenting interventions as a preventive strategy for obesity at any age
- Most research explores the mother's role in influencing children's lifestyles. More research is needed on the role and influence of fathers.

Eating behaviour

- There is a need for trials of 'real world' interventions aimed at helping parents learn the skills of responsive feeding

Play and sleep

- The relationship between sleep and obesity is based on cross-sectional and cohort studies. Trials of interventions to help young children attain adequate amounts of sleep and their effect on weight gain are urgently needed.
- RCTs of intervention to promote physical activity in preschool children are confined to structured physical activity in preschool settings. Trials of interventions promoting unstructured outdoor play are much needed

Settings

- There are few RCTs of interventions to prevent or reverse obesity in day care settings and these are small. Adequately powered trials are needed
- Most interventions to prevent obesity in preschool children take place in daycare settings. Interventions in the home are needed too

Health professionals

- Large-scale trials evaluating the effect of motivational enhancing approaches are needed
- A clinical tool to help professionals and parents identify babies at risk needs development and evaluation.

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