sages to children. As many commercials are for fast food, soft drinks, and cereals sweetened with sugar, one could argue that children are encouraged by the media to consume high fat, energy dense food (Ebbeling et al, 2002).

**Sedentary lifestyle**

An increasingly sedentary lifestyle combined with an increased intake of energy-dense food is the nation’s greatest threat for rising incidence and prevalence of childhood obesity. Body weight is regulated by physiological mechanisms that maintain a balance between energy intake and energy expenditure. A rise in energy intake or a decrease in energy expenditure results in weight gain and obesity (Holm et al, 2001).

A cultural shift is necessary in terms of attitude to activity. The literature suggests parents and children do not realise the importance of being active (Drummond, 2003).

Increased TV viewing and use of computers is indicative of a changing culture. Previously, children played active outdoor games for long periods (Ebbeling, 2002).

Today’s neighbourhoods are no longer perceived as safe places for children to play and this contributes to the shift towards indoor entertainment.

Advances in computer technology indicate that this risk factor is going to increase further for future generations (Sokol, 2000), creating a challenge for health professionals. Parents will require encouragement and support to ensure children participate in at least one hour’s physical activity every day (BHF, 2000).

Convenience use of the car has reduced routine physical activity (Ebbeling et al, 2002; Sokol, 2000). The highest group to use convenience transport are those of social class one and two, substituting short journeys on foot for travel by car (Acheson, 1998).

However, social deprivation also contributes to physical inactivity (Acheson, 1998). One explanation offered for this is that organised activities can prove expensive, often requiring equipment and transportation (Buttriss and Goldberg, 2002; Acheson, 1998).

**Environment**

In addition to previous accounts of social deprivation causing obesity, changes to family life are also significant drivers to the obesity epidemic. Parents work increasingly long hours, reducing their ability to supervise children’s sedentary behaviour, then indulge the family with energy-dense processed or restaurant food for convenience (Ebbeling et al, 2002).

Health outcomes are influenced by the environment children are exposed to and parental behaviour is suggested to be the most powerful and potentially alterable influence on children’s health, both during pregnancy and the early years. There are public health implications if parents are not supported adequately to make changes towards being positive role models, as the cycle of ‘obesogenic lifestyles’ will be sustained throughout future generations (Gibson et al, 2002). Nurses are well-equipped not only to address the promotion of health and prevention of obesity in this generation, but also to influence the health outcomes of future generations.

**Consequences of childhood obesity**

The consequences of childhood obesity can be defined in terms of human suffering and substantial economic burden, measurable by sick leave, health insurance costs, doctor visits and hospital stays (Holm et al, 2001). An understanding of its consequences is essential to justify the interventions of nurses in prevention of this epidemic.

Studies of children worldwide correspond alarmingly. At least half of overweight or obese children become overweight adults (Dietz, 1998) and children of obese parents are increasingly likely to become obese adults themselves (Whitaker et al, 1997). This trend is complex and reflects on the interplay of parental role models, genetic susceptibility and cultural influences (Laing, 2002), reinforcing the intricacy of childhood obesity and the enormous challenge facing health professionals.

Adult obesity is well recognised as having severe health consequences (BHF, 2000), including increased risk for stroke, cardiovascular disease and diabetes.

A rising incidence in obesity-related type 2 diabetes in UK children has been reported. This disease was rarely seen until adulthood in previous generations (DoH, 2003).

UK culture has attached a stigma to obesity, which is reinforced by the media and fashion industry and may disrupt the psychological well-being of children. This stigma can lead to negative self-image and low self-esteem as ‘fat’ children experience bullying or teasing, which often exacerbates the problem, causing further health consequences (DoH, 2003).

**Consequences of childhood obesity**

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**Box 1. Types of Preventative**

- 1. Dietary therapy
- 2. Exercise therapy
- 3. Behavioural therapy
- 4. Family therapy
- 5. School-based therapy

(Source: Gibson et al, 2002; NCRD, 2002)
Health visitors have a developing role to tackle inequality in obesity with increasing social class (Acheson, 1998). The increasing incidence of childhood obesity raised concern in 1990, when an estimated 18 million children under the age of five worldwide were classified as being overweight (WHO, 1998). Interestingly despite this warning the incidence continues to increase.

One UK survey (Bundred et al, 2001) illustrated a rise in prevalence of overweight pre-school children from 14.7 per cent to 23.6 per cent and obese children from 5.4 per cent to 9.2 per cent between 1989 and 1998 (Reilly, 1999). Further research is needed to prevent the growing trend of childhood obesity there is a risk of increasing economic cost and human suffering in future generations (Laing, 2002).

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Arguably prevention needs to start in pre-school children and families to promote a culture of healthy living that may be maintained throughout life (Segal and Sanchez, 2001). The Acheson report identifies ‘a gradient of decreasing inequality with increasing social class’ (Acheson, 1998). Health visitors have a developing role to tackle inequality, and improve health outcomes for children. Resources are key to service provision and nurses with access to government funding for tackling inequalities may have different experiences of tackling obesity to those who are working in new ways with existing resources.

### Causes of childhood obesity

The causes of childhood obesity include a combination of complex factors including genetics, lifestyle, environment, culture and economics (Ebbeling et al, 2002; Laing, 2002; NHS Centre for Reviews and dissemination (NCRD), 2002; Segal and Sanchez, 2001). The NCRD (2002) highlights the debate surrounding the causes of childhood obesity.

### Genetics

Hill and Peters (1998) conclude that genes solely determine people’s susceptibility, not inevitability, for them to become overweight. It is imperative to recognise that the entire obesity epidemic cannot be attributed to genetic factors alone, as the ‘increasing prevalence of obesity has occurred over too short a period for the genetic make-up of the population to have changed substantially’ (Hill and Peters, 1998). Further research is indicated to develop guidelines and allow identification of those children most susceptible to weight gain.

### Food marketing and consumption

Knowledge surrounding a healthy diet is considered key to halt the rising incidence of obesity (British Heart Foundation (BHF), 2000; Acheson 1998). Attention to diet has concentrated on promoting low-fat diets but has made little impact on reducing obesity. Advice should promote not only reducing fat intake but also lowering sugar and total energy consumption (Drummond, 2003). Advertisements often portray unhealthy eating mes-

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### Table 1. The Food in Schools Programme (Joint Project of the DoH and The DFES)

<table>
<thead>
<tr>
<th>Pilot project</th>
<th>Aim</th>
<th>Number of pilots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast clubs</td>
<td>To improve the nutritional content of food and drink provided and consumed</td>
<td>42 schools</td>
</tr>
<tr>
<td>Healthier tuck shops</td>
<td>To provide schools with guidance on healthy tuck shops</td>
<td>225 schools</td>
</tr>
<tr>
<td>Healthier vending machines</td>
<td>Challenges schools and the vending industry to make healthy options available to children</td>
<td>10 schools</td>
</tr>
<tr>
<td>Healthier lunch boxes</td>
<td>Ways to assist parents and pupils to make interesting, healthy and cost-effective packed lunches</td>
<td>100 schools</td>
</tr>
<tr>
<td>Dining room environment</td>
<td>To address the issues around the school dining room</td>
<td>10 schools</td>
</tr>
<tr>
<td>Cooking clubs</td>
<td>To increase pupils’ and their families’ awareness of the importance of a balanced diet and food hygiene and safety</td>
<td>42 schools</td>
</tr>
<tr>
<td>Growing clubs</td>
<td>To link the food chain, nutrition and health</td>
<td>15 schools</td>
</tr>
<tr>
<td>Water provision</td>
<td>To increase pupils’ overall consumption of water in schools</td>
<td>40 schools</td>
</tr>
</tbody>
</table>

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### References


Department of Health (2002) Fat Facts. London: Coronary Heart Disease and Cancer Prevention Unit, DoH.


This article has been double-blind peer-reviewed.

For related articles on this subject and links to relevant websites see www.nursingtimes.net
eating disorders to combat negative emotions (Gibson et al, 2002; NCRD 2002). The psychological distress of children and the emotional impact of bullying or teasing may be significant prompts for parents to encourage changes in lifestyle.

Prevention

The complexity of causes contributing to the epidemic of childhood obesity suggests that prevention provides a challenge for professionals. Assessment and preventative programmes need to be individually tailored accounting for cultures, values and beliefs. Reducing inequalities is essential as those who are socially deprived are most at risk of obesity (Acheson, 1998).

There appears to be no robust evidence on the effectiveness of interventions on which to base national strategies or to inform clinical practice (NCRD, 2002). Until such evidence is available obesity management’s focus is on maximising health promotion, health education and parental support (NCRD, 2002) (Box 1). The DoH and the Department for Education and Skills (DfES) have a joint health promotion venture called ‘The Food in Schools Programme’ (Table 1).

The health visitor’s role with regard to childhood obesity is ambiguous, although the principles of health visiting arguably support a role in its prevention. There is a significant lack of research on this subject. However, health visitors perhaps need to take the lead and demonstrate their potential by researching and evaluating their contributions in preventing childhood obesity.

Barriers to prevention

There are several barriers to successful prevention of childhood obesity. For example, there are a multitude of complex aspects to the promotion of healthy eating. A combination of income, knowledge, motivation, time, fulfilment, advertising and choice mean that the advice or support to families must consider their dilemmas in addressing the barriers to healthy eating (Acheson, 1998).

Health care professionals may themselves inadvertently create barriers to successful change (NCRD, 2002) through: a lack of motivation and guidance on practice, negative perceptions of people who are overweight, and the provision of poor access to services. Regular education, audit and training are essential to prevent this.

The need for parental support to promote and sustain change is paramount. Nurses must acknowledge that in reality, this involves setting lifestyle management objectives that are sustainable, individualised for the child and acceptable for the family (Edmunds et al, 2001).

Conclusion

It is clear that the epidemic of childhood obesity has great implications for public health, with significant consequences on morbidity and mortality.

Obesity needs to be tackled in childhood in order to prevent consequences in later life. Thus the roles of education, support and lifestyle changes cannot be stressed enough. Health care professionals play a major part in

References


