

# Treatment of childhood obesity

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## SYNOPSIS

Obesity in childhood and adolescence is common and is associated with significant psychological and medical morbidity. Effective management of obesity in this age group has a family-focused approach, especially with pre-adolescent patients. It helps families and young people make healthier food choices and provides ongoing support. Small achievable goals are set for behaviour change, such as reducing sedentary behaviour. The success of treatment is defined in a variety of non-weight-related and weight-related ways. There is little information available to guide the use of drugs in managing paediatric obesity, although clinical trials are currently underway.

**Index words:** overweight, physical activity, diet.

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## Introduction

The early 21st century has seen the development of a global epidemic of obesity in many countries, including Australia.<sup>1</sup> Children and adolescents are increasingly affected. In 1995, 19–23% of Australian children and adolescents were overweight or obese. Between 1985 and 1995 the prevalence of being overweight in this age group had almost doubled and that of obesity had more than tripled.<sup>2</sup> The dramatic increase in obesity in the community is related to major environmental changes that have occurred over the past two decades, with people living more sedentary lifestyles and having access to energy-dense foods.

Children and young people with obesity often have significant disease-related psychological and medical morbidity, as well as an increased risk of premature death from cardiovascular disease. Once obese, the likelihood of remaining so into adulthood is very high, especially for the obese adolescent. Family doctors are well placed to intervene early and provide management of this significant problem.<sup>3</sup>

## Raising the issue

The issue of obesity and its management needs to be raised sensitively. Obese children or adolescents are usually very concerned about their problem but may not specifically ask for help. This is often confounded by the fact that most obese children have obese parents. Some people will welcome the opportunity for immediate intervention, whereas in others you may simply be laying the foundation for later acceptance of therapy.

## Clinical assessment of the obese child or adolescent

All obese children and adolescents should have a full history and physical examination performed.<sup>4</sup> Their height and weight should be measured and body mass index (BMI; weight/height<sup>2</sup>) calculated. As BMI varies normally throughout childhood, it should be plotted on BMI-for-age charts such as those available from the US Centers for Disease Control web site.<sup>5</sup> Waist circumference can be used as a proxy for abdominal obesity. Complications that should be sought on physical examination include hypertension, acanthosis nigricans (thickened pigmented skin indicative of insulin resistance), striae, intertrigo, hepatomegaly (fatty liver) and an abnormal gait due to joint problems. Warning signs of other, rare, causes for the obesity include short stature and developmental delay. Drugs such as corticosteroids can also be a cause for obesity. In patients with severe obesity, especially if there is a family history of diseases associated with insulin resistance, test for dyslipidaemia, insulin resistance, glucose intolerance and liver abnormalities. A history of sleep apnoea should be sought, but this can be difficult to identify by questioning.

## Therapeutic goals

Treatment 'success' will involve non-weight-related outcomes, as well as weight-related outcomes. These include:

- an improvement in self-esteem
- an increase in healthy lifestyle behaviours for the whole family
- an improvement in the comorbidities of obesity
- parental or patient realisation that long-term behaviour change is required
- weight maintenance or weight loss, or, in the still-growing child, a decrease in the rate of weight gain
- a decrease in waist circumference.

Weight loss targets are generally not set when managing overweight and obesity in childhood. For example, the younger child may be able to 'grow into' an appropriate weight adjusted for height. The primary goal should be behavioural change.

## Family-focused approach

Families influence food and activity habits and thus effective therapy of obesity must be family focused. Several studies have shown that long-term maintenance of weight loss can be

achieved when the intervention is family based.<sup>6,7</sup> Altered lifestyle patterns within the whole family, as well as parental modelling and support of the child, are all important factors in a successful outcome. Often several family members or other carers may need to be engaged in the therapy, either directly or indirectly.

### ***Pre-adolescent versus adolescent patients***

A developmentally appropriate approach to management needs to be used. For example, there is increasing evidence that treatment of pre-adolescent obesity with the parents as the exclusive agents of change is superior to an approach principally centred on the child. Indeed, focusing on the child in the treatment program may result in an increase in anxiety and withdrawal from therapy.<sup>7</sup> When dealing with the obese pre-adolescent child, sessions involving the parent or parents alone, without the child being present, are the most effective. However, a different approach is clearly needed for the adolescent patient. The few studies of the management of adolescent obesity suggest that it may be most effectively managed when the adolescent patients and their parents have the opportunity to attend at least some support sessions separately.

### **Physical activity**

An increase in physical activity during treatment is a long-term predictor of maintained 'non-obesity'. The type of activity (i.e. 'lifestyle' exercise versus 'programmed' exercise) also appears to be important for sustained weight loss. While both forms of exercise help promote initial weight loss, the child or adolescent is more likely to continue long-term with the 'lifestyle' form of activity. This includes activities that can be incorporated readily into the child's or adolescent's lifestyle, for example walking, cycling, swimming, dancing to music, informal ball games and playing outside. Obese children, or their families, should be encouraged to incorporate some opportunities for incidental activity into their everyday lifestyle:

- is it possible to walk part or all of the way to or from school?
- are there safe parks or cycleways nearby where children can play?
- think of activity as fun, rather than as 'doctor-prescribed exercise'
- keep a ball or a frisbee or a skipping rope in the car
- parents should not fetch and carry for their children – small chores provide an opportunity for incidental activity
- star charts can be used for simple self-monitoring
- adolescents may appreciate having a companion for activities.

### ***Reducing sedentary behaviour***

Interestingly, encouraging a decrease in sedentary behaviour may be more effective than aiming for an increase in physical

activity. If families and young people are encouraged to be aware of situations when they are being sedentary, then they may more readily choose to be active. The following should be considered:

- how many hours per day are television, videos, video games or computers used and can this be decreased (e.g. to a maximum of two hours per day)?
- is the family car used to take children to and from school or other short journeys?

### **Changing food choices and eating behaviour**

Involvement of the entire family in making a change to a sustainable and healthy food intake is usually vital. This is because changes in shopping and cooking practices, and altered attitudes to snacking and mealtimes, may all be required. Essentially, the focus should be on behaviour change rather than a prescribed diet. Vulnerable eating behaviours in the family may include skipping breakfast or lunch, having regular high fat snacks, drinking large volumes of soft drinks or fruit juice, snacking frequently in the after-school period and regularly having take-away meals or eating out. A healthier food intake may include the following:

- using low-fat dairy products
- increasing amounts of fruit and vegetables
- stocking a range of low-fat snacks that the child enjoys
- making time to eat breakfast
- eating meals together as a family
- drinking water with meals
- planning non-food rewards e.g. toys, CDs, outings to the park
- taking lunch from home to school.

### **Indications for referral**

The vast majority of children and adolescents who are overweight or obese can be managed in the community by their family doctors or other health professionals. However, those with significant metabolic complications of obesity, or with growth failure or other signs suggestive of endocrine or genetic disease, will need referral to a paediatrician or specialist clinic. In a very small proportion of obese children and their families significant psychosocial disturbance may be present – this warrants referral to a specialist child and adolescent psychiatric service.

### **Follow-up**

Several frequent visits in the initial period (e.g. once every week or fortnight) may be required in order to discuss progress in making small lifestyle changes and also to set new, achievable goals. Subsequent less frequent follow-up visits over the long term appear to be useful in supporting the parent or young person in making sustainable lifestyle changes. Referral to an accredited dietitian for additional support in making lifestyle changes may be of help.

## Other therapies

The current clinical management of paediatric obesity involves behavioural therapy. There is little information to guide the use of other treatment approaches (for example, very low calorie diets, obesity surgery, drug therapy or hospitalisation), although there may be a role for their use in morbidly obese patients. Experience from adult studies suggests that they need to be used in the context of a behavioural management program. No drugs are currently approved for the treatment of paediatric obesity, although therapeutic trials are underway with drugs such as orlistat and sibutramine. Such therapy, if used at all, should only be given in a specialist setting.

## Conclusion

Obesity is increasingly prevalent in childhood and adolescence. Family doctors are well placed to manage this problem. Effective management of obesity in this age group will include:

- having a family-focused approach, especially with pre-adolescent patients
- setting small, achievable goals for behaviour change
- targeting sedentary behaviour
- helping families and young people to make healthier food choices
- providing ongoing support as families and young people make sustainable lifestyle changes.

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## REFERENCES

1. World Health Organization. Nutrition. <http://www.who.int/nut/obs.htm> Accessed March 2003.
2. Magarey AM, Daniels LA, Boulton TJ. Prevalence of overweight and obesity in Australian children and adolescents: reassessment of 1985 and 1995 data against new standard international definitions. *Med J Aust* 2001;174:561-4.
3. Hardcastle DM, Shrimpton S, Renigeris AS, Baptist ED, Baur LA. Increasing prevalence of childhood obesity. *Med J Aust* 1997;167:342.
4. Steinbeck K. Investigation of the obese child. *Modern Medicine of Australia* 1999;42:94-6.
5. Centers for Disease Control. 2000 CDC Growth Charts: United States. <http://www.cdc.gov/growthcharts> Accessed March 2003.
6. Epstein LH, Valoski A, Wing RR, McCurley J. Ten-year follow-up of behavioral, family-based treatment for obese children. *JAMA* 1990;264:2519-23.
7. Golan M, Weizman A, Apter A, Fainaru M. Parents as the exclusive agents of change in the treatment of childhood obesity. *Am J Clin Nutr* 1998;67:1130-5.

*Conflict of interest: none declared*

## Self-test questions

*The following statements are either true or false (answers on page 47)*

1. The management of childhood obesity should involve the whole family.
2. An obese child with short stature requires further investigation.

## Your questions to the PBAC

### Availability of bulking and osmotic laxative agents as pharmaceutical benefits

During my research for a presentation on managing constipation and the use of laxatives in the aged-care setting for our local nursing home, I consulted published guidelines and other references for information. My search also included the Schedule of Pharmaceutical Benefits. It was then that I became aware just how difficult it is for prescribers to follow guidelines in this area. Stimulant laxatives (such as bisacodyl) are covered quite comprehensively, despite being considered as third- or fourth-line agents by the guidelines. Bulking agents and osmotic agents are poorly covered in the Schedule, but are listed as first- or second-line treatments in most of the references I consulted. This anomaly has resulted in the common use of stimulant laxatives at our facility (and, I suspect many others) when non-pharmacological interventions have failed. Can the PBAC consider widening the restrictions on these agents, particularly lactulose, to include residents of aged-care facilities? Ease of use makes lactulose especially attractive. A laxative-free nursing home may be a dream, but a stimulant-free one may be achievable!

Alison Hilet  
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### PBAC response:

The Pharmaceutical Benefits Advisory Committee (PBAC) is legally required, in evaluating applications for Pharmaceutical Benefits Scheme (PBS) subsidy, to take into account the clinical effectiveness, safety and cost-effectiveness (value for money) of the medication concerned compared to other available therapies.

Importantly, a medicine cannot be subsidised via the PBS unless the PBAC makes a positive recommendation. In other words, a decision by the Committee not to recommend a medicine be subsidised is binding on the Government.

The PBAC has considered the listing of lactulose for the treatment of patients in domiciliary or nursing home care in the past. However, the PBAC was of the opinion that lactulose is an expensive synthetic disaccharide which is no more effective than other cheaper osmotic laxative preparations, and it is associated with abdominal discomfort in a number of patients. The Committee felt that further widening the indication would encourage unnecessary and definitely non-cost-effective use.

The PBAC is reluctant to recommend laxative products for listing on the PBS and considers that other measures such as modification of diet can be used in the treatment of constipation in most patients.