



FACT SHEET

OVERWEIGHT AND OBESITY IN CHILDREN

Overweight and obesity are growing health problems in both adults and children. Over the last 15 years overweight and obesity has doubled in children and adolescents with estimates that about 20-25% of children and adolescents are now overweight or obese.

Why the concern?

- Obese children have a 25% - 50% chance of becoming obese adults.
- Greater health risks – increased risk of cardiovascular disease, diabetes and insulin resistance, high blood pressure and some cancers. The prevalence of Type 2 diabetes is increasing in children
- They often suffer from low self esteem and may have psychological problems
- An increase in morbidity and mortality

Causes of Overweight/Obesity

A result of eating more food energy than the body needs. Excess food energy that is not used is deposited as fat. Genetics and lifestyle factors such as physical activity play an important part.

Fat Deposition.

Everyone needs some fat in their diet and on their body because it has important metabolic functions, as well as being a reserve of energy and providing protection for the internal organs. Appropriate body fatness for a woman is 20-27% of body weight and for a male 12-15% of body weight.

It is normal for a baby to be chubby during its first 12 months of life as this is the time when fat is deposited. From the age of 1 to about 4 to 6 years the amount of fat deposited decreases, as more lean tissue develops. From age 6-10 years, fat deposition becomes predominant again. During adolescence lean tissue development becomes more prominent.

The number of fat cells increases in both lean and obese children throughout childhood and into adolescence, but number increases faster in obese than lean children. After adolescence, increases in body fat occur primarily by increase in fat cell size.

Measurement of Overweight/ Obesity

There are no definitions of obesity and overweight for children under 2 years of age.

Assessment of whether a child is overweight or obese should not be made just by observation. The child's growth should be assessed and monitored using Growth Percentile Charts and Body Mass Index Growth Charts.

Percentile charts - These give expected weight for height for a given age. A weight 10%-20% above that for height is classified as overweight. A weight more than 20% above that for height is obese.

Body Mass Index is the newer and recommended standard approach to measuring overweight and obesity for 2-18 year olds in Australia and BMI for age percentile charts are now available.

$$\text{BMI} = \text{weight (kilograms)}/\text{height (metres)}^2.$$

While the BMI cut off points for overweight and obesity in adults are fixed, in children and adolescents a single cut off number is not possible as the BMI changes with age. On BMI for age percentile charts, a child with a BMI above the 85th percentile for his age is considered overweight and above the 95th percentile, obese.



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Risk factors For Overweight and Obesity

1. Prenatal environment .

What happens in utero may have an affect on obesity and other adult diseases later in life. This is called the Barker Hypothesis and suggests that an infant adapts to its prenatal environment and these adaptations remain throughout his life. For example, foetal under-nutrition may permanently change an infant's metabolism – blood flow may be redistributed to protect the brain, metabolism slowed and fat cell development altered. A low birth weight infant born to an undernourished mother will have adapted to survive on fewer kilojoules and when exposed to an environment of lots of food and low activity may gain weight. These pre-birth effects can be modified later in life by following a healthy lifestyle and diet.

2. Birth weight

Low birth weight babies, particularly those who show catch up growth, are at risk of being overweight. There is also an association between high birth weight and overweight in childhood.

3. Genetics and Parental Obesity

Parental overweight/obesity is a strong predictor of future obesity. About 25-40% of obesity is genetically determined. In one US study the strongest predictor of overweight between the ages of 3 and 5 years in children was the mother's weight. Parental obesity doubles the risk of adult obesity in both non obese and obese children under 10.

4. Family eating patterns

Parents influence the food choices and other eating behaviours in their children. Disordered eating in a parent may be associated with excess body weight in their child.

- **Feeding Control**

Too much parental restriction over what a child eats can have a rebound effect, by increasing the intake of the restricted unhealthy food when the child is given free access to it. Parents need to give guidance on what foods to eat rather than be over controlling and restrictive.

- **Food Neophobia “fear of new foods”**

During this developmental stage, young children reject new foods in favour of familiar ones. Good eaters become fussy eaters and stress parents. Parents need to continue to offer young children healthy foods and encourage new foods even though rejected. It may take 10 attempts before the new food is accepted. Children can become overweight during this phase because they are not offered a variety of healthy filling foods, but instead are offered high energy low nutrient dense snacks.

4. Ethnicity

Children and adolescents of Middle Eastern and European backgrounds are more likely to be overweight than those from English speaking or Asian backgrounds.

5. Socioeconomic status

Recent research shows a trend towards greater overweight and obesity in children from lower socioeconomic backgrounds compared to those from a middle class background.

6. Increased Portion Sizes

Portion size is a major factor in determining how much is eaten as we all tend to eat in “units” eg a biscuit, a piece of fruit. The bigger the unit serve the more kilojoules we can take in. An increase in the common serving sizes of foods, particularly those served at fast food restaurants, has been implicated in contributing to overweight. A recent US study found that serving sizes had increased over the last 30 years and were much higher than the recommended serving size by government nutrition authorities. Children should be given small portions and if hungry, can ask for more. Don't insist that a child eats everything on the plate.



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7. Lack of Physical Activity

Children should be encouraged to walk, play and engage in fun physical activities rather than sedentary activities like watching TV and computer games. A recent study found that children aged 1-5 years who had a TV in their room were more likely to be overweight than those that didn't. Physical activity not only safeguards against overweight but is also important in cancer prevention.

Does breast feeding protect against obesity?

Evidence regarding its effect on obesity is inconclusive. Some, but not all studies, suggest a protective effect. A common problem with the studies is the differing methodologies used. In fact, increased rates of breast feeding are coinciding with an increase in overweight and obesity. However, this does not detract from the fact that nutritionally, breast milk is the best food for infants. There is also no consistent evidence that formula fed babies have a higher fat mass than breast fed babies nor a higher incidence of overweight or obesity.

How may breast feeding be protective?

- Breast milk is uniquely designed for the infant – it is lower in protein and breast fed babies take in less kilojoules
- Self regulation of feeding. Parents do not control how much the infant consumes. The infant knows when he has had enough and parents are not encouraging them to “finish a bottle”
- Leptin – breast milk leptin has a positive effect on satiety
- Lower insulin levels are reported in breast fed infants compared to formula fed infants. Higher insulin levels can promote fat deposition
- Closeness of feeding may be protective rather than milk itself.
- Activity – breast fed babies may be more physically active during feeding than formula fed infants

Helping the Overweight/Obese Child

- Encourage the whole family to follow a healthy lifestyle
- Encourage healthy meals and snacks
- Encourage physical activity – restrict hours in front of TV, video and computer games
- Never put the child on a “diet” – low energy diets can compromise growth and development. A child should grow into their ideal weight.
- Refer to a paediatric dietitian/doctor

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