




# Weight management

A guide to managing overweight and obesity in children and teenagers

Endocrinology and Diabetes

The background is a solid green color with a pattern of vertical stripes in varying shades of green. Scattered across the background are numerous circles of different sizes and shades of green, some overlapping the stripes.

Written by the Weight Management Service on behalf of The Royal Children's Hospital Melbourne,  
Department of Endocrinology and Diabetes.

Designed by The Royal Children's Hospital Educational Resource Centre.

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# Introduction

Overweight and obesity is increasing amongst Australian children, and almost one in four children and adolescents is now either overweight or obese. In 2011–12 60% of Australian adults and 25% of children were above their healthiest weight with 25% adults and 6% children classified as obese. Being above your healthiest weight is known to be associated with an increased risk of health-related problems. There is also considerable evidence that being overweight at a young age makes a person much more likely to be overweight or obese as an adult.

We hope this booklet will help children, adolescents and their families understand the complex nature of childhood obesity and the associated health concerns.

We encourage you to discuss any additional questions or areas of concern with your doctor after reading this booklet.

## How do I know if my child is overweight?

It can be difficult to recognise if your child is overweight or obese, and this usually requires assessment by a healthcare professional.

'Obesity' is defined in regard to body mass index (BMI). BMI is a measure that helps to compare the child's weight with their height; however, it does not take into account body build. For example, we know that people who carry weight around their tummy are at increased risk of heart disease and diabetes compared to people who carry weight more around their hips.

BMI is calculated using the child's height and weight (weight in kilograms divided by height in metres, and this figure again divided by height in metres). BMI is then plotted on to a growth chart, which compares the child's BMI with other children in the population according to their age and sex. Your child would be considered to be 'overweight' if their BMI is between the 85<sup>th</sup> (orange) and 95<sup>th</sup> (red) percentile lines, and 'obese' if they are above the 95<sup>th</sup> (red) percentile line.



## Why is my child overweight?

Children become overweight due to a combination of different factors. The most common reason is a chronic imbalance between energy intake (food and drink) and energy use (physical activity). Family eating habits have changed considerably with time spent in paid employment increasing, greater consumption of pre-prepared meals, larger portion sizes, and take-away which is usually higher in energy than home prepared meals. Energy dense foods (savoury and sweet “snack-foods”) and drinks (juice, soft drink) are readily available and marketed towards children.

In recent times, it has become much easier to get food which contains a lot of energy such as take-away food, potato chips, chocolate bars and fizzy drinks. Children also tend to exercise less as many are spending a lot more time watching television and playing computer games than participating in sports and active play.

Australian children watch, on average 2½ hours of television a day in addition to other screen based activities (computer, electronic games). This is well above the current recommendations (see page 17).

It is important to recognise, however, that there are also some rare medical problems that can cause children to gain weight excessively. Part of the healthcare professional’s assessment in an overweight child will be to look for and rule out these rare medical conditions

(TABLE 2).



### Causes of obesity in children and adolescents

#### Environmental

- Excess energy intake
- Decreased activity levels

#### Hormone problems

- Under functioning thyroid
- Problems with the production of growth hormone
- High steroid levels
- Other hormonal problems

#### Medications

- Behaviour-related medications (such as antidepressants)
- Medications for fits and seizures
- Steroids

#### Genetic syndromes

- Prader Willi syndrome
- Other genetic syndromes

TABLE 2



## What will my healthcare professional do?

The majority of children and adolescents who are overweight are physically healthy. If you have concerns regarding your child's weight, these should be discussed with your local doctor. The doctor will assess your child's weight, height, family background, dietary intake and activity levels and may request specific tests to assess for weight-related problems. These are summarised in **TABLE 3**.



### Assessment of an overweight child

#### General history and examination

- Measurement of height, weight, waist circumference
- Assessment of puberty
- General development
- General health and sleep problems
- Blood pressure
- Family history of diabetes, high blood pressure, heart disease
- Unusual features such as facial features that may suggest genetic syndromes

#### Diet and exercise history

- Average daily food intake
- Activity levels
- Time spent watching TV/computer

#### Screening investigations

- Blood sugar and insulin levels
- Blood cholesterol levels
- Liver function tests
- Hormone function, such as thyroid hormone levels
- Vitamin and nutrient levels (such as Iron, vitamin D, Vitamin B12)

**TABLE 3**



## What can you do to begin to help your child?

While health professionals can provide guidance and advice, the child and their family play an even more important role in weight management.

Parents are often seen as the key motivator of change for younger school-age children, whereas adolescents can, and should have the chance to, make goals and changes separately from (but with the support of) their parents. It is important that the goals are realistic and appropriately targeted towards achieving a healthy weight.

The emphasis is on improving health, fitness and social functioning. Reducing the risk of weight-related problems is much more preferable than goals that are aimed at achieving an ideal body weight.

Young people often report that temptation is everywhere, and therefore removing temptations from the household is often a good way to start. Choose short term goals that help your child/adolescent feel like the efforts that they are putting in are getting results, and then they will be much more likely to achieve long term successful weight management.

Some of these goals could include:

- Controlling portion size
- Choosing healthy snacks for between meals
- Decreasing take-away foods
- Walking to and from school
- Finding more opportunities to be active
- Going to sleep at a regular (and appropriate) times

Look for ways in which you can make your home environment healthier for your whole family. It is important to remember that these goals help to improve general well-being, health and fitness, and would be beneficial even if your other children are not overweight.

## How do you begin to help your child manage their weight?

A great first step is linking in with a dietitian who can help guide you and your child through healthy and safe weight management strategies. As with many hospital-based services there may be a waiting period to see the RCH Weight Management Service. If this is the case, access to a community or private dietitian can be obtained by requesting a referral from your GP. Most services will be covered by Medicare or accessed at a small fee.

While you are working on finding a local dietitian there are some simple healthy-eating strategies that can be put in place in the home environment.





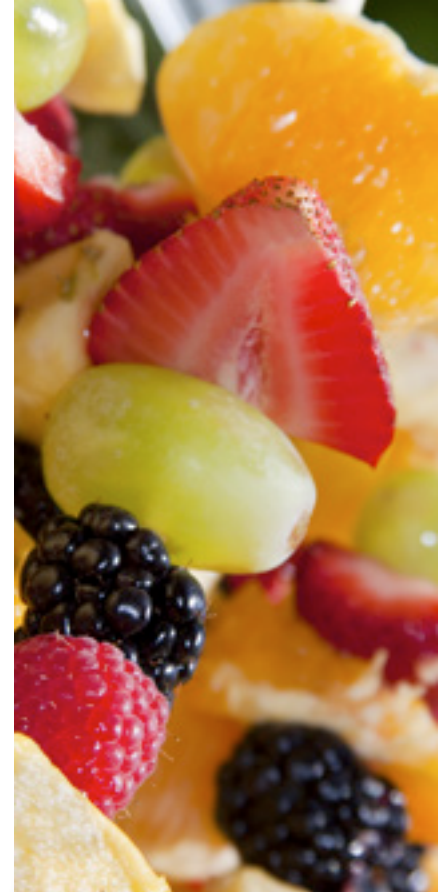
# Steps to achieving a healthy weight

## Step 1 — Get organised!

Thinking ahead and planning your meals and snacks will ensure your child's diet is healthy. Being organised will help to limit the amount of high-energy junk foods, which are usually very high in fat and sugar, and result in unnecessary weight gain. In addition, junk foods and pre-packaged foods tend to provide fewer vitamins and minerals, and are often more expensive than healthy meals and snacks made from scratch. Getting organised and preparing meals and snacks at home will help your child get all the nutrients they need to thrive and will save you money at the same time!

### Tips for getting organised

1. Know your pantry and plan ahead — be aware of what food you have at home and plan healthy meals for up to a week at a time. This will save you time and money by avoiding a visit to the supermarket or the local take-away shop on your way home.
2. Choose a shopping day and take a shopping list with you.
3. Don't shop on an empty stomach! This will increase the chances of buying unhealthy snacks and meals.
4. Prepare for the unexpected — life gets busy and there will be times where it is impossible to cook a healthy meal from scratch but buying take-away isn't the only solution. Preparing meals in advance and freezing them will give you a quick and simple solution to this common problem. Just reheat and serve.
5. Pack school lunches the night before to avoid the temptation of grabbing high kilojoule/calorie pre-packaged snack foods as you're running out of the front door.



## Step 2 — Eat regular meals

The key to achieving a healthy weight is not to eat less but to eat smart. Depriving your body of meals will only make it hungrier and increase the chance of overeating at other meal times. Aim for three meals (breakfast, lunch and dinner) with regular snacks in-between if you are hungry.

## Step 3 — A healthy lunch box

Healthy school lunches don't have to be boring. Aim for a 'nude food lunch box' where the school lunch is free from processed or pre-packaged foods.

**GET BACK TO BASICS** In your child's lunchbox aim to include a sandwich or a wrap, a piece of fruit, and a tub of yoghurt or a slice of cheese.

### Some healthy snack ideas

- Fruit/fruit kebabs
- Vegetable sticks with low fat dip/cream cheese
- Vegetable sticks with salsa
- Reduced fat cheese with rice crackers
- Small tub of low fat yoghurt
- Air-popped corn
- Rice cakes
- Corn on the cob
- Boiled egg
- Homemade baked pita chips
- A cup of homemade vegetable soup
- Small can of salt-reduced baked beans



## Step 4 — Portion size

Portion size is just as important as the types of food we eat. There is such a thing as 'too much of a good thing'. Portion sizes should be appropriate for your child's age. An easy way to work towards healthier portions is to use the healthy eating plate guide as illustrated here.



Vegetables/salad



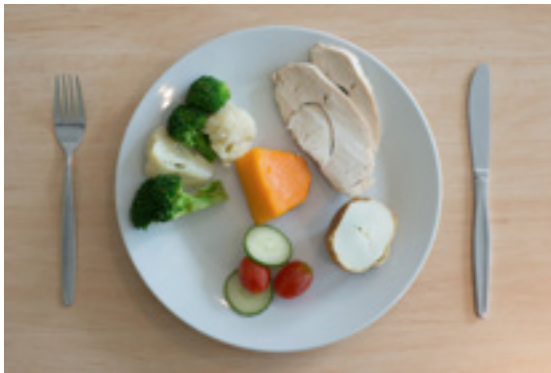
Lean protein

Carbohydrate/starch

	Example	Portion
<b>Protein</b>	Meat (beef, lamb, chicken, fish, eggs, etc.)	The size of the palm of your hand
<b>Carbohydrate</b>	Rice, pasta, bread, potato	The size of your fist
<b>Vegetables</b>	Capsicum, zucchini, cauliflower, broccoli, lettuce, tomato, cucumber, pumpkin, asparagus, carrot, swede, green beans, cabbage, celery, eggplant, spinach, AND MANY MORE!	Unlimited if they are steamed, boiled or raw

**We eat with our eyes**

Which plate would you choose?



Both meals are the same! By serving your meal on a smaller plate, your brain may be tricked into thinking you are eating more.



## Step 5 — Cut out sugary drinks

Sugar-sweetened drinks such as soft drinks, fruit juices, flavoured mineral water, nutrient water, cordial, sports drinks and flavoured milks add unnecessary energy to your child's diet which may lead to unwanted weight gain. In addition some of these drinks offer little or no health benefit as they contain no vitamins or minerals to assist with healthy growth. Switching these drinks to water will keep your child well hydrated and assist with managing their weight.

### **Be careful!**

Milk is a nourishing drink and a rich source of calcium but you can have too much of a good thing. Low fat dairy in the form of milk (plain, unflavoured), cheese and yoghurt is recommended as a part of a healthy diet for all children over the age of two years. Seek advice from your dietitian as to how much dairy is enough for your child.



## Physical activity

Including physical activity in your daily routine will not only help your child achieve a healthy weight but will also assist in improving their mood.

### Why is exercise/activity important?

- It aids healthy growth and development
- Assists in achieving and maintaining a healthy weight when combined with healthy eating
- Distracts from eating
- Improves general health
- Builds strong muscles and bones
- Provides opportunities to interact with other children/adolescents
- Helps to develop good motor skills and flexibility
- Improves self esteem
- Helps aid relaxation
- Improves sleep and schoolwork

## How much exercise does your child need to do?

All children are different and exercise requirements are influenced by many different factors such as the age of the child. When we talk about exercise we mean how physically active a person is.



## Quiz

Which of these 10 year olds is doing more exercise, and which is more likely to get better long term results in terms of weight, and risk of lifestyle related diseases (like Type 2 Diabetes)?

- A) A 10 year old who plays soccer for 2 hours 3 times per week, but otherwise does homework or plays computer games, or
- B) A 10 year old who plays soccer for 2 hours once per week, but walks to and from school and enjoys playing outside with friends at other times?

If we were to talk about activity in terms of 'exercise' child A is doing more, but in terms of general activity levels, child B is likely to have better long-term health as his/her background level of activity is likely to equal a lot more energy burnt than child A.



## Current recommendations for physical activity

Age	Time	Type
Birth to one years	N/A	Supervised floor play
1 to 5 years	Three hours per day	Active play
5 to 12 years	One hour per day	Moderate to vigorous physical activity each day e.g. dancing, netball, soccer, swimming
	In addition to this children should aim for several hours of active play each day	
13 to 17 years	One hour per day	Moderate to vigorous physical activity each day e.g. dancing, netball, soccer, swimming
18+ years	150+ minutes per week	Moderate to vigorous physical activity each day e.g. dancing, netball, soccer, swimming

## Maximum screen time recommendations (e.g. TV, computer games, iPhone or iPad)

Age	Time
Less than two years	No screen time
2 to 5 years	One hour per day
5 to 12 years	Two hours per day
13 to 17 years	Two hours per day
18+ years	Minimise the amount of time spent in prolonged sitting

## Tips and tricks to encourage exercise:

- All activity is more fun when done with someone else.
- Be a good role model, participate and be active with the child/adolescent.
- Limit 'screen' time to less than 2 hours a day and have alternative active play ideas ready.
- Encourage active ways of getting to and from school — walk, ride or scooter all or part of the way.
- Encourage gifts that promote activity e.g. cricket sets, balls, skateboards etc.
- Set up activities that can be done at home — such as circuits, including stations for star jumps, skipping, throwing a ball etc.

Physical activity should be part of a daily routine for a child or adolescent. In the first instance this may need to be encouraged — find out what activity interests your child/adolescent and remember any activity is good activity.

It is important when implementing activity, to find something that the child finds fun as this will be beneficial and much more sustainable.

### Goals

1. At least 30–45 minutes of physical activity every day — enough to get your child 'hot and sweaty'.
2. Two hours or less of screen time per day — this includes computers, iPads, phones, portable gaming devices (Nintendo DS) and television (watching programs, or gaming using PlayStation, Wii etc.).

### Options

As shown in the tables on page 17, the options for physical activity are wide and varied. Physical activity can include participation in sports such as netball, soccer or football, as well as tennis, or other activities such as dancing, martial arts, swimming or riding a bike, jumping on the trampoline, walking around the block and running around with the family dog.

It is important to try a range of activities to find which one best suits your child/adolescent's skills and needs. As long as they are safe and having fun, it doesn't matter what activity they are doing. A little bit of huffing and puffing is a good sign that you are doing the right exercise, and that the exercise is working. Invest in a raincoat and a pair of gumboots — you can't catch a cold from wet weather. Splashing and jumping in puddles is a fun way for kids to be active.

You may wish to contact your local council to obtain a comprehensive list of what is available in your area. Your child may also be eligible for some funding assistance to participate in sports and activity programs.

For those requiring more mobility assistance, please contact Reclink Australia, which operates a database a list known as “Access All Abilities” which contains details for community sport, leisure and recreation providers that work with people with disabilities.

### **Access for All Abilities**

Community Access Unit  
Sport and Recreation Victoria  
GPO Box 2392  
Melbourne VIC 3001  
Phone: (03) 9208 3239  
Email: [info@sport.vic.gov.au](mailto:info@sport.vic.gov.au)  
<http://www.aaavic.org.au/about>

### **Helpful links**

#### **Links for all children and their families:**

[www.eatforhealth.gov.au](http://www.eatforhealth.gov.au)

[www.shapeup.gov.au](http://www.shapeup.gov.au)

[www.health.gov.au](http://www.health.gov.au)

#### **Links for healthcare professionals:**

<http://www.nhmrc.gov.au/guidelines/publications/n57>

<http://www.health.gov.au/internet/main/publishing.nsf/Content/health-publth-strateg-phys-act-guidelines>



# Weight Management Clinic — your questions answered

## Does your child need to see a specialist?

Many GP's are aware of the complexity of weight management in childhood. If they are concerned they may be able to refer you to your local paediatrician or to the Royal Children's Hospital Weight Management Service, dependent on the services available in your local area. Referral to a specialist clinic like our Weight Management Service may be warranted in cases of severe and/or progressive obesity, early-onset obesity, suspicions of an underlying medical problem, and/or when there is the presence of weight-related complications.

## The Royal Children's Hospital Weight Management Team

We have a specialist Weight Management Clinic at the Royal Children's Hospital, which is made up of specialist doctors, a clinic nurse, a social worker, a dietitian, and a psychologist. We also have the input of many other specialised staff members who are involved in research projects that are looking into childhood overweight and obesity.

## Our Objective

In general, we aim to maintain a child's weight over a period of time so that, with normal increases in height, the weight falls back into the healthy weight range. For some children/adolescents with severe obesity, a degree of weight loss may be required to keep them healthy. The Weight Management Team primarily aims to encourage, educate and empower families to lead to improved lifestyle change.

## What to expect during your appointment

- A comprehensive assessment of general health and growth by our Multidisciplinary team
- Dietary assessments
- Psychological and social assessments if required
- Specialist advice and education on diet and lifestyle modification to assist with achieving weight and health goals
- In some cases, medical and/or surgical treatments may be discussed.

## Contacts

**The Royal Children's Hospital Weight Management Service**  
(03) 9345 4765

**The Royal Children's Hospital Outpatient Service**  
(03) 9345 6180

**Fax number for referrals**  
(03) 9345 5034



## Endocrinology and Diabetes

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