



Addressing **weight issues**
in **young people and**
families in New Zealand

Māori and Pacific peoples are disproportionately affected by obesity in New Zealand. As obesity increases the likelihood of developing diabetes and cardiovascular disease (CVD), it is critical to address weight issues early, well before CVD risk assessments begin. Talking about weight can be difficult but it is essential to help address the growing prevalence of obesity in New Zealand.

One in five children in New Zealand are overweight

New Zealand is one of the most overweight developed nations in the world, with more than one in three adults and one in five children classified as overweight or obese.^{1,2} The proportion of people who are overweight or obese is higher among Māori and Pacific peoples than Europeans in New Zealand. This disparity begins from a young age – the percentage of children in the 2006/7 National Health Survey (the most recent national data) who were obese, was 23.3%, 11.8% and 5.5% for Pacific, Māori and European children respectively.² This results in increased incidences of obesity, type 2 diabetes and cardiovascular disease (CVD) among Māori and Pacific adults.^{3,4}

It is recommended that CVD risk assessment and diabetes screening begin at age 35 years for Māori and Pacific males and age 45 years for Māori and Pacific females, however, lifestyle issues such as weight, diet and exercise should be addressed well before this age.

Discussing and monitoring weight should be a core part of general practice care

Most children will be weighed and have their height recorded regularly from birth until age five years as part of the Well Child/Tamariki Ora programme. Regular measurement of height and weight after this age should remain a part of routine care in general practice.⁵

A flexible approach to managing weight should be applied for children aged less than five years. Children aged over five years should be eating a healthy, balanced diet, consistent with adult recommendations, and management should begin for those who are overweight.⁶ In older adolescents and adults, management should become increasingly more stringent, as the likelihood of complications from obesity increases with age.^{7,8}

Use BMI to measure adiposity and waist circumference to measure risk

Body mass index (BMI) and waist circumference are two practical, indirect measures of obesity, and the risk associated with obesity.

BMI is the accepted method of measuring adiposity in both adults and children.

$$\text{BMI} = \text{Weight (kg)} / \text{Height (m)}^2$$

In children, BMI calculations need to be adjusted for age and gender using World Health Organisation standardised guides. Most patient management systems will have an age-standardised BMI chart to help interpret figures for children.

In children and adolescents:⁵

- Overweight is classified as BMI >85th percentile
- Obese is classified as BMI >95th percentile

In people aged over 20 years:⁶


- Overweight is classified as BMI >25 kg/m²
- Obese is classified as BMI > 30 kg/m²

BMI should not, however, be used in isolation as a measure of unhealthy weight. BMI is less accurate in Māori, Pacific and South and East Asian people.^{9,10} In practice, a slightly higher threshold for BMI values can be applied in Māori and Pacific peoples and slightly lower threshold in South and East Asian peoples.⁹ In addition, people who have a higher than normal degree of musculature are likely to be classified as overweight or obese if assessed using BMI alone.

Waist circumference can be used to further quantify risk and to assess the progress of interventions. Central obesity, seen

as an increased waist circumference, is a proxy measure of intra-abdominal, or visceral, fat.¹¹ Central obesity, as opposed to peripheral obesity (excess fat on buttocks, hips and thighs), is a risk factor for cardiovascular disease and type 2 diabetes.⁶ Measurements are taken at the mid-point between the iliac crest and bottom rib or around the umbilicus if these are obscured. Risk is increased with a waist size greater than 102 cm in men and 88 cm in women.¹¹ In children, ideal waist circumference is more difficult to assess, but a circumference approximately half that of the patient's height can be used.

Additional measurements, such as waist-to-hip and waist-to-height in adults, are of limited clinical use if BMI and waist circumference are used regularly.¹¹

 For growth, height and BMI charts for children see: www.health.govt.nz/publication/clinical-guidelines-weight-management-new-zealand-children-and-young-people


Raising the issue of weight

Talking about weight can be uncomfortable for clinicians, patients and their families. However, obesity is one of the most significant preventable health problems in New Zealand, and clinicians have a duty of care to discuss it with patients, as with any other health issue, such as smoking cessation or cardiovascular disease risk.

After calculating a BMI value that is high, initiate a discussion on unhealthy weight. One way to lead into a discussion is to use BMI charts to indicate to the patient, or in the case of a child, to the family, that they are outside the healthy range. Consider using terms such as “unhealthy weight”, “overweight” and “weight issue”, while avoiding terms such as “obese” and “fat” as these may be stigmatising. Care should be taken to tailor the discussion to the individual patient, taking into account the sensitive nature of the topic and the discrimination that most overweight people regularly face. Evidence suggests that patients and families are often highly motivated to address and rectify their weight issues, and in many cases expect clinicians to raise the subject.¹²

It may be helpful to ask the patient (and family if appropriate) about their views of their own weight, and any possible reasons for weight gain.⁶ Discuss the drivers that lead to obesity, such as barriers to eating well (e.g. perceived expense of healthy foods, lack of time to prepare meals) and genetic predispositions. However, while it is acceptable to acknowledge that obesity has a genetic or societal component, this does not mean that it is unavoidable or untreatable.

Reinforce the range of benefits from being at a healthy weight and emphasise that support is available to help them achieve weight loss goals.

 For resources and success stories that can be shared with patients, see:

www.oneheartmanylives.co.nz/tane-stories.html

Perform a weight “risk assessment”

If a person is at an unhealthy weight, discuss and consider their personal and family history (e.g. family history of premature cardiovascular disease, dyslipidaemia, type 2 diabetes or hypertension) and any relevant risk factors that may be contributing to their excess weight, including any consequences of their current weight.⁵

Relevant risk factors for obesity:

- Parental obesity (for overweight children)
- Sedentary lifestyle
- A history of gout, musculoskeletal pain or other conditions that may limit activity

Associated lifestyle factors:

- The patient or family's usual diet (especially high-sugar drinks and take-away foods)
- Their usual exercise time (outside play-time is a suitable proxy in young children, sports for older children, sport and biking/walking to work for adults)
- Their usual sedentary time (ask about “screen time”; television, console or computer gaming and internet time)
- Cultural aspects that may increase risk, e.g. large group meals after church gatherings, weddings or funerals

Adverse consequences of obesity that may include:

- Psychosocial problems, e.g. low self esteem, behavioural problems, anxiety, depression, bullying
- Insulin resistance and/or type 2 diabetes
- Orthopaedic problems, e.g. joint problems
- Cardiovascular conditions
- Respiratory conditions, e.g. snoring, obstructive sleep apnoea, daytime somnolence
- Reproductive issues, e.g. irregular periods, polycystic ovary syndrome
- Gastrointestinal problems, e.g. fatty liver, cholelithiasis
- Other co-morbidities such as breathlessness on exertion, tiredness, excessive sweating

Efforts or actions already taken to control weight:

- Dietary interventions
- Exercise regimens
- If unsuccessful, reasons why

Medicines that could be contributing to an increase in weight such as:

- Antidepressants, atypical antipsychotics (particularly olanzapine), hormonal contraceptives, corticosteroids, and anticonvulsants, e.g. sodium valproate

Perform a clinical examination that, depending on the age of the patient, may include:⁵

- Blood pressure
- Heart rate
- Check for the presence of intertrigo (inflammation and rash of body folds), hepatomegaly (enlarged liver), acanthosis nigricans (brown to black, velvety hyperpigmentation of the skin, usually found in body folds, that indicates insulin resistance)
- Check for co-morbidities (e.g. poorly controlled asthma in a child, gout in adults) that may affect the patient's ability to exercise

The role of laboratory testing

The value of laboratory investigation in children and adolescents who are overweight is limited, as the results are unlikely to alter how they are managed. However, the threshold for testing decreases in older age-groups, as the likelihood of co-morbidities increases and management options change.⁸ In people who are overweight, testing should be considered well before the start of formal cardiovascular and diabetes risk assessment (i.e. at age 35 for Māori and Pacific males and age 45 for Māori and Pacific females).

Consideration of laboratory investigation in overweight children and adolescents should be based on the patient's age, clinical examination, co-morbidities and family history of type 2 diabetes or dyslipidaemia. Early testing for diabetes is likely to be beneficial for at-risk individuals from a young age. The recommended first-line test for most people is HbA_{1c}, however, fasting glucose and in some cases, oral glucose tolerance testing may be required because HbA_{1c} is less reliable in children and adolescents.¹³

Laboratory testing for diabetes is recommended in children and adolescents with a BMI greater than the 95th percentile

who have any of the following features:

- Are of Māori, Pacific, or South or East Asian ethnicity
- Have a family history of early onset type 2 diabetes (including maternal gestational diabetes)
- Show signs of insulin resistance, e.g. acanthosis nigricans

Where appropriate laboratory investigation should include:

- Serum creatinine – note that the traditional means of estimating eGFR in adults (the MDRD equation) is not applicable in children
- Lipid profile (non-fasting is adequate)
- Liver function tests if fatty liver is suspected, i.e. obesity and hepatomegaly
- TSH if there is a clinical suspicion of hypothyroidism


Conditions to be aware of in overweight and obese young people

There is an association between obesity and some very rare endocrine disorders in children. These conditions, such as Cushing's syndrome, are characterised by reduced height, central obesity, rounding of the face and a wide range of other non-typical symptoms. If suspected, the child should be referred to a paediatrician.

How to manage patients who are overweight or obese

Weight should be initially managed through diet and lifestyle changes, in conjunction with community-based health and education programmes. The intensity of interventions should be based on the presence of co-morbidities and the age of the patient, as risk of weight-related complications increases with age.⁶ For children, maintenance of their current weight should be the focus, as this allows the child to "grow into their weight". For adolescents and adults a weight loss goal of 0.5 – 1 kg per week should be used.^{6, 14} "Green prescriptions" are useful for stating goals and how to achieve them.

A plan that enables and encourages greater knowledge of health and weight, a healthier diet, a healthier environment and an increased level of activity, and that includes the family/whānau, particularly the person who usually does the shopping and prepares meals, will help most people address their weight.

 For further information see: "Promoting healthy lifestyles for Pacific peoples", BPJ 32 (Nov, 2010).

Dietary approaches

The goal of dietary interventions to assist weight control should be to educate patients and their families about healthy food choices and encouraging eating together.

Start by asking the patient where they think they could make improvements to their diet, and then work together to improve the family's diet plan and knowledge about a healthy diet. A child's eating habits are learned at home. The amount of food they are served per meal becomes the amount they learn to feed themselves. A Cochrane review found that educating children aged under 12 years about healthy food was more effective for weight-loss, in the long term, than actively reducing the amount of energy dense foods the children consumed.⁴

Specific advice should include:^{3,5}

- Eat together as a family at the table, as often as possible
- An appropriate meal size is the size of the person's two cupped hands, an appropriate serving size is the palm of one hand (this works well for both adults and children)
- Eat breakfast every morning and make healthy choices, e.g. sugar-free cereals rather than toast with butter
- Eat a variety of foods and include whole grains and cereals, fruits and vegetables, lean meats and fish and low-fat dairy products wherever possible
- Reduce intake of foods high in carbohydrates, such as potatoes, white bread, taro and rice
- Eat regular smaller meals, and avoid a large meal at night, to help to reduce hunger and maintain a healthy metabolism
- Water and low-fat milk should ideally be the only drinks allowed (children aged under two years require full fat milk)
- Reduce alcohol intake
- Reduce the amount of take-away foods consumed and select healthier options
- Avoid snacking, but if hungry between meals choose healthy options such as fruit, vegetables or low-fat yoghurt

Provide, or direct to, resources the patient can take home or access online. Where possible, consider referral to a dietitian, although waiting times and cost may be an issue for some families.


 For further information and printable resources, refer patients to: www.healthed.govt.nz/health-topic/healthy-eating

Changing activity levels

It is recommended that children aged over five years undertake 60 minutes exercise every day (active play or sports) and children aged less than five years be active for a minimum of three hours (moving, walking). Adults should undertake a minimum of 30 minutes of moderate to vigorous exercise per day, e.g. jogging, brisk walking, kilikiti (traditional ball game, similar to cricket), waka ama (outrigger canoe racing).⁵ Activity can be broken up over the course of the day into short "bursts". People who have previously been sedentary, may need to "start slow" and work their way up to the goal amount of activity. Any exercise is better than none. Encourage parents of overweight children to be healthy role models and to make exercise a regular part of every day.

Specific advice to help increase activity levels should include:^{5,15}

- Limit "screen time" to two hours per day or less
- Include the whole family in activities wherever possible, particularly where cultural activities are available such as church group activities, dancing, mahinga kai (traditional food gathering activities) and kapa haka (Māori performing arts)
- Simple, inexpensive options should be suggested first, such as a going for a walk, kicking a ball around or walking to school or work
- Include a mix of muscle-strengthening (swimming, playing at a playground), bone-strengthening (running) and aerobic activities (touch rugby, cycling)
- For people who have not previously been active: "prescribe" 5 – 10 minute sessions of light exercise (50 – 75% of peak exertion), and work up to the recommended daily minimum¹⁶

 For further information refer patients to: www.r2r.org.nz and www.sparc.org.nz

Sleep is an important part of weight loss

Sleep is very important in maintaining a healthy weight (Table 1). A New Zealand study found that in children aged less than five years, each additional hour of nightly sleep was associated with a BMI reduction of 0.48 kg/m² by age seven years.¹⁷ Similarly, a Canadian study found that getting less than 10 hours of sleep per night was independently associated with increased BMI in a cohort of children.¹⁸ A good indicator of children and adolescents receiving sufficient sleep is how long they sleep-in on the weekends; if the child is sleeping considerably more on the weekends than during the week they are likely to be working off accumulated "sleep debt" and should be enabled to sleep more during the week.

Table 1: The recommended daily sleep requirements for different age groups¹⁷⁻¹⁹


Age group	Recommended daily sleep requirements
< 1 year	14 – 15 hours
1 – 5 years	12 – 14 hours
5 – 15 years	10 – 11 hours
15 -19 years	9 – 10 hours
Adults	7 – 9 hours

Behavioural approaches

Behavioural approaches to weight management reinforce healthy lifestyle and diet choices and are important in maintaining a healthy weight once it is achieved. Behavioural changes include actions to identify why a person might over-eat, developing a routine for eating meals, activity and sleeping, learning more about healthy food and encouraging self-monitoring and goal setting.

Specific advice should include:⁵

- Use activities such as grocery shopping as an opportunity to educate children about healthy food choices (or for children to educate their parents)
- Encourage achievable goal-setting practices, e.g. "I will do five minutes of exercise per day for week one, ten minutes per day in week two, and keep increasing each week until my goal level of 'X' minutes is achieved" or "I will replace fizzy drinks with water or milk, except on Sundays, when I am allowed to have one can of zero-sugar fizz". These should then lead into longer term goals with the aim of a healthier weight and improved overall health
- Eat healthy snacks before going to functions, such as church groups, weddings, funerals, to help avoid overeating on less healthy options
- Discuss "danger times" and triggers for snacking, such as boredom, sitting in front of the TV and stress and suggest ways to counteract them, such as eating before going supermarket shopping, finding hobbies to reduced boredom or using exercise rather than food to combat stress
- Suggest the use of appropriate rewards not based on food for when the child meets a goal, e.g. going to a water-slide or visiting the beach

 For further information refer patients to: www.feedingourfamilies.org.nz

Refer to community support groups whenever they are available

Peer support is a powerful tool in weight management, as is seen with many other medical issues, such as smoking cessation.^{5, 6} Support from family and friends can also be valuable. Anecdotal evidence suggests that when another person is responsible for the weight loss of a close friend or relative, and vice versa, their commitment and success with weight loss is greater.

Clinicians should become familiar with community projects and groups that can help provide culturally appropriate advice, education and support to people trying to maintain a healthy weight.

Where community support is not available, consider organising a peer support group within the general practice clinic. This may also involve sessions from dietitians, diabetes clinicians or community leaders.

Continue support, and where necessary, refer


For children aged over five years who are at an unhealthy weight, weight and height checks every three months are recommended until the child returns to a healthy weight.⁵ Adults at an unhealthy weight require regular monitoring, but greater flexibility is acceptable. Regular, ongoing visits to a practice nurse for lifestyle and dietary advice are often beneficial and encourage patients to remain motivated. For many cultures, knowing the person who is giving medical advice is important and without this rapport most patients will be polite, but will not question clinicians or gain a better understanding, leading to a lack of change.

Discussion with a paediatrician may be required for children and adolescents if:¹⁵

- The underlying cause of unhealthy weight needs to be assessed
- The young person has significant co-morbidities or needs that cannot be managed in primary care

If lifestyle and dietary methods fail, pharmacological management may be considered in adults, however neither of the two available medicines (orlistat and phentermine) are

funded. Weight-loss medicines are only an adjunct to lifestyle changes and produce only moderate reductions in weight. Weight is often regained when the medicine is stopped if other lifestyle factors have not changed. Referral to a surgeon may be indicated in adults if bariatric surgery is being considered (usually if BMI > 40 or BMI > 35 and there is a weight related medical condition).

 For further information on the pharmacological management of obesity, see: "Medicines for weight loss – do they work?", BPJ 27 (April, 2010).

O le upega tautau, 'ae fagota

If at first you don't succeed try, try and try again – SAMOAN

Tama tu tama ora, tama noho tama mate

An active person will remain healthy while a lazy one will become sick – MĀORI

Healthy mums, healthy babies: nutrition in pregnancy


Prenatal nutrition is an important aspect of child health. A healthy diet, with sufficient, but not excessive, energy intake, and higher nutrient, vitamin and mineral intake is required prior to and during pregnancy. Infants of overweight mothers have been shown to have a higher average birth-weight, a higher rate of peripartum complications, and a higher incidence of type 2 diabetes and obesity later in life.²⁰

Māori and Pacific women, in general, have a higher BMI prior to pregnancy and experience greater weight gain during pregnancy than European women.²¹ The infants of Pacific women in particular weigh significantly more than European and Māori infants.²¹

Women who are pregnant, or intend to become pregnant, should be encouraged to eat a healthy, balanced diet. It is not necessary to "eat for two" – nutritional intake should be based on hunger. As a general guide, food intake may be increased by approximately 10% from the second trimester onward. Recommended weight gain during pregnancy varies based on pre-pregnancy weight, with less weight gain recommended in women with initially higher BMIs.

Folic acid supplementation is essential before and during pregnancy and iodine supplementation during pregnancy. Iron supplementation is recommended in some women in the second and third trimesters. These supplements may be prescribed fully subsidised, for pregnant women.

Women who are pregnant should be encouraged to include regular, moderate physical activity for 30 minutes per day.²¹ Most exercise is acceptable during pregnancy, though women who are pregnant should be advised to avoid: exercises involving lying flat on the back, contact sports, scuba-diving and sports with a high risk of falling such as skiing, cycling or horseback riding. Women who are breast feeding should also be encouraged to maintain a moderate level of activity, however, nutritional intake may need to be adjusted to ensure that if the mother is aiming to lose weight, she is not doing so too rapidly, as weight loss of more than 0.5 kg/week can affect maternal health and milk production.²¹

 For more information see: "Nutrition and supplements during pregnancy", BPJ 18 (December, 2008).

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