Clinical practice guidelines for child weight management in community health services

Children aged 5–12 years

A Victorian Government initiative

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The Place To Be

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Introduction

These guidelines outline clinical practices for health professionals in community health services to support families with safe, evidence-based and effective child weight management interventions which consider the physical, social and emotional wellbeing of children.

Community health child weight management interventions promote healthy family lifestyles, improve child weight trajectories and engage families in appropriate services for the management of child weight and child weight comorbidities. The approach to child weight management described in these guidelines provides a framework that comprises seven stages:

Stage 1 Identifying overweight and obesity in children

Stage 2 Screening for childhood overweight and obesity comorbidities and consequences

Stage 3 Considering and enhancing parental motivation for change

Stage 4 Referring to an approved child weight management group program or providing individual intervention

Stage 5 Assessing child and family eating and activity habits

Stage 6 Providing intervention for childhood overweight and obesity

Stage 7 Long-term monitoring of childhood weight status, obesity-related comorbidities and health behaviours.

A collaborative clinical approach which empowers and equips families to develop lifelong health behaviours, and helps people access professional support as required, is paramount.

These guidelines are specific to children's weight management for **children aged 5 to 12** in Victorian community health services. They are derived from, and can be used in conjunction with, *Clinical practice guidelines for the management of overweight and obesity in children and adolescents* (NHMRC, 2003a) and *Overweight and obesity in children and adolescents: A guide for general practitioners* (NHMRC, 2003b) developed by the Australian National Health and Medical Research Council. Australian guidelines, including *The Australian guide to healthy eating* (Smith et al., 1998) and the *National physical activity guidelines for Australians* (DoHA, 2004) can also be used to support these guidelines. Recent evidence and expert advice (e.g., Barlow & Expert Committee, 2007) have been used to develop these guidelines. The guidelines will be updated as new evidence emerges.

It is anticipated that the users of this guide will:

- be tertiary qualified health professionals providing services in community health services
- have participated in training regarding use of these clinical practice guidelines
- have access to supervision and secondary consultation regarding child weight management
- operate as part of a multidisciplinary team
- have access to locally developed referral pathways to support the use of these guidelines and referral for assessment and treatment as appropriate.

Background

Overweight and obesity is a key indicator of children's health, development and wellbeing (AIHW, 2008).

Recent Australian data indicate that 23 per cent of Australian children and adolescents are above their healthiest weight (CSIRO, 2008). By 2025 it is estimated that up to 37 per cent of boys and 33 per cent of girls aged 5–19 years may be overweight or obese (Haby et al., 2008). Rates of overweight and obesity are higher in low-income families (O'Dea, 2008; Edmunds, 2005), indigenous and specific ethnic and cultural groups, including Pacific Islander, Middle Eastern and Mediterranean populations (O'Dea, 2008). Recent Victorian data show an independent effect of ethnicity, above and beyond socioeconomic status, on overweight and obesity in children (Waters et al., 2008), resulting in a double disadvantage for these children.

Overweight and obese children are at risk of becoming overweight and obese adolescents and adults (Guo et al., 2002; Magarey et al., 2003), and face reduced life expectancy (Olshansky et al., 2005). Childhood obesity increases the risk of chronic diseases such as type 2 diabetes, heart disease (Goran et al., 2003) and some cancers (WCRF & AICR, 2007). It is also associated with a range of immediate and long-term physical, social and psychological problems such as joint pain, discrimination and depression (Lobstein et al., 2004). These significant lifelong health implications of childhood overweight and obesity warrant early intervention to minimise excess weight (NHMRC, 2003a).

Prevention offers a foundation to support healthy lifestyles for all children; however, it is not sufficient to reduce existing overweight and obesity (NHMRC, 2003a; Barlow & Expert Committee, 2007). Targeted weight management interventions are also required for families of overweight or obese children (NHMRC, 2003a). Tertiary child weight management clinics are available for morbidly obese children experiencing significant comorbidities. General practitioners also play an important role in the identification and management of child weight issues, particularly for children experiencing comorbidities, and guidelines are available to assist them in this role (NHMRC, 2003b). However, tertiary clinics and general practitioners alone cannot meet the need for child weight management (Wake & McCallum, 2004).

Given the sensitive nature of child weight management, families may be more comfortable with and receptive to weight-related information when it is presented by health professionals whom they trust to deal sensitively with their health care needs (Marsden et al., 2006). Primary health care practitioners are uniquely placed to identify overweight or obesity in children, talk with families about this sensitive issue and provide evidence-based weight management interventions (Barlow & Expert Committee, 2007). Ideally, health professionals delivering child weight management interventions in community health settings will have an understanding of both the physiological aspects of body weight and the psychosocial assessment and intervention processes important in managing child weight.

Multifaceted family-based interventions that promote sustainable healthy eating and physical activity behaviours and positive psychosocial wellbeing can achieve long-lasting improvements in child weight and health (Epstein et al., 1990). Delivery of inappropriate weight management interventions may be harmful to children's social, emotional and physical health (O'Dea, 2005); thus it is essential that health professionals in community health services receive guidance, training and ongoing support to provide safe, evidence-based and effective intervention for overweight and obese children and their families.

Principles of effective, evidence-based child weight management

Effective, evidence-based child weight management interventions involve:

1. strengthening family motivation and capacity
2. promoting family involvement and parent support
3. using developmentally appropriate approaches
4. using effective behaviour change strategies with a focus on long-term behaviour change
5. addressing multiple eating and activity intervention targets
6. promoting positive psychosocial development
7. monitoring the long-term impacts of intervention (NHMRC, 2003a; Barlow & Expert Committee, 2007; Lobstein et al., 2004; Batch & Baur, 2005; Reilly, 2007; Summerbell et al., 2003).

1 Strengthening family motivation and engagement

Engaging families in treatment and maintaining their motivation to achieve sustained behaviour change is central to effective child weight management (Davis et al., 2007). Intervention is unlikely to be effective unless parents are aware of the risks associated with their child's weight, are motivated to change it and believe they are capable of effectively making the required changes (Barlow & Expert Committee, 2007; Davis et al., 2007). Motivation fluctuates over time and across situations, and can be influenced by the clinician (Miller & Rollnick, 2002). The clinician's role is to enhance parental motivation to make these changes (Barlow & Expert Committee, 2007; Davis et al., 2007). A collaborative, motivational clinical approach should be taken to emphasise and build on family strengths, minimise the likelihood that parents will feel blamed and criticised, and maximise parental engagement and motivation for change (Davis et al., 2007; Corcoran, 2005; Edmunds, 2005; Kirk et al., 2005).

2 Promoting family involvement and parent support

Changing established behaviours is very difficult; parents can benefit from being taught how to achieve this challenging task with their children (Stewart et al., 2005; Gibbons, 2007). Behavioural family intervention teaches parents how to initiate and maintain eating and activity changes in their children by incorporating parenting skills training (Stewart et al., 2005; Gibbons, 2007). This does not imply that obesity is the result of poor parenting; rather that parents can be effective agents of change if they are taught how to promote positive family health behaviours and how to manage undesirable behaviours that may occur in response to family changes (Kirk et al., 2005; Gibbons, 2007; Golan et al., 1998a; Golley et al., 2007). Family involvement and parent support is essential for effective child weight management (NHMRC, 2003a; Lobstein et al., 2004; Summerbell et al., 2003; Epstein et al., 1998; Epstein et al., 2007). Every effort should be made to involve both parents in treatment, particularly for children living across two homes.

3 Using developmentally appropriate approaches

Treating pre-adolescent obesity with parents as the exclusive agents of change results in higher treatment attendance and completion, greater treatment adherence and family changes, and superior child weight reduction (Golan et al., 1998a; Golan & Crow, 2004; Golan et al., 2006; Golan et al., 1998b; Golan et al., 1999). Parents have a very powerful opportunity to affect their child's health behaviours and weight through modelling a healthy lifestyle, changing the family environment and using parenting strategies to actively support their child's behaviour change (Golan & Crow, 2004).

Parents' behaviours can influence child eating and weight status by:

- monitoring the availability of food in the home
- modelling healthy eating behaviours and food choices
- using strategies to maintain or modify their child's eating behaviour and food choices (Ventura & Birch, 2008).

Parental modelling and support, as well as shared family activities, are important influences on child activity levels and weight status. Parental support is particularly important for children, and includes encouragement, involvement and facilitation (for example, provision of equipment, opportunities to be active, transport to events or facilities and so on) (Gustafson & Rhodes, 2006).

4 Using effective behaviour change strategies with a focus on long-term change

Child weight management interventions provided by community health services promote healthy family lifestyles, improve child weight trajectories, and reduce the risk of weight-related comorbidities; rapid weight loss is not the goal (NHMRC, 2003a; Barlow & Expert Committee, 2007). For all children, the explicit focus of the intervention is the achievement of meaningful and sustainable changes in health behaviour, not weight loss *per se*. If meaningful changes in health behaviours are achieved and sustained, attainment of the individual's healthiest body weight should follow. For most children, particularly those who are younger or are only moderately overweight, treatment should aim to improve lifestyle habits so weight gain is halted or slowed while the child grows taller. For those whose health could be improved with weight loss, slow, sustainable weight loss is the goal (NHMRC, 2003a).

Healthy behaviour is hard to achieve in an environment that promotes overeating and inactivity. Thus, health information alone is rarely sufficient to initiate and maintain behaviour changes (Barlow & Expert Committee, 2007). Behaviour change is much more likely when parents are supported to change their own behaviour and assisted to develop strategies to change the behaviour of their children (Gibbons, 2007). Behaviour change strategies recommended for use in child weight management interventions include:

- goal setting
- contracting
- rewards for goal achievement
- self-monitoring
- environmental/stimulus control
- problem solving
- relapse prevention strategies (NHMRC, 2003a; Stewart et al., 2008; NIHCE, 2006).

5 Addressing multiple eating and activity intervention targets

Decreasing energy intake and increasing energy expenditure are essential components of child weight management. Energy intake can be reduced by making small, meaningful and sustainable changes to food choices, eating habits and eating routines (Barlow & Expert Committee, 2007; Spear et al., 2007). Increasing physical activity and decreasing sedentary behaviour are separate constructs, and both are important in child weight management (Stewart et al., 2005; Fogelholm, 2008). Physical activity can be further broken down into incidental physical activity (for example, active free play), and planned physical activity (for example, tennis lessons), and each has unique and important benefits. Families are encouraged to make small, meaningful and sustainable changes to behaviours that are most likely to make the biggest difference to their energy balance (Barlow & Expert Committee, 2007; Kirk et al., 2005; Spear et al., 2007).

Parents are often unaware of the risks of dieting, and assume that dieting is an effective method for managing their child's weight. These parents are at risk of putting their child on a diet in response to information that their child is overweight (Chomitz et al., 2003). Parents should be very actively discouraged from putting their child on a diet, or thinking about weight management strategies as a diet. Instead, they should be encouraged to make changes to their family environment to support meaningful and sustainable improvements in their child's health behaviours.

6 Promoting positive psychosocial development

Concerns about potential negative impacts can lead parents to avoid seeking, and health professionals to avoid providing, child weight management intervention (Reilly & Wilson, 2006). Beliefs that child weight management interventions are harmful and can lead to the development of disordered eating and a negative body image are not supported by the research (Epstein et al., 1990; Carter & Bulik, 2008; Epstein, et al., 2001). Evidence-based weight management programs share many of the same basic principles and strategies as evidence-based eating disorder interventions (Cooper & Fairburn, 2001; Fairburn et al., 2003), and can result in improved psychosocial wellbeing (Lowry et al., 2007).

Overweight and obese children are at increased risk of social exclusion, low self-esteem, body dissatisfaction, disordered eating, depression and anxiety (Hill, 2005; Strauss & Pollack, 2003; Strauss, 2000). Establishing healthy behaviours, a positive body image, good self-esteem and social connectedness in childhood can promote both physical and mental health (Lowry et al., 2007). In addition to promoting healthy eating and activity behaviours, child weight management interventions should directly target improvements in body image, self-esteem and social connectedness (Reilly, 2007).

7 Monitoring the long-term impacts of intervention

Long-term monitoring of child weight- and obesity-related comorbidities and family and child health behaviours is essential in monitoring and promoting the success of child weight management interventions (NHMRC, 2003a; Lobstein et al., 2004; Summerbell et al., 2003). Recall systems can support agencies to provide this monitoring.

Integrating and coordinating services

Successful long-term child weight management requires integration and coordination of health and non-health services. The application of service coordination practices and principles support an integrated approach to client care (DHS, 2001). This includes the process of Initial Needs Identification (INI) and assessment to determine needs for the child and family, including the need for further assessment of comorbidities. Care plans should be developed and monitored in conjunction with the family, and referral to other services should follow.

The seven stages of child weight management in community health services

The approach to child weight management described in these guidelines provides a framework that comprises seven stages:

Stage 1 Identifying overweight and obesity in children

Stage 2 Screening for childhood overweight and obesity comorbidities and consequences

Stage 3 Considering and enhancing parental motivation for change

Stage 4 Referring to an approved child weight management group program or providing individual intervention

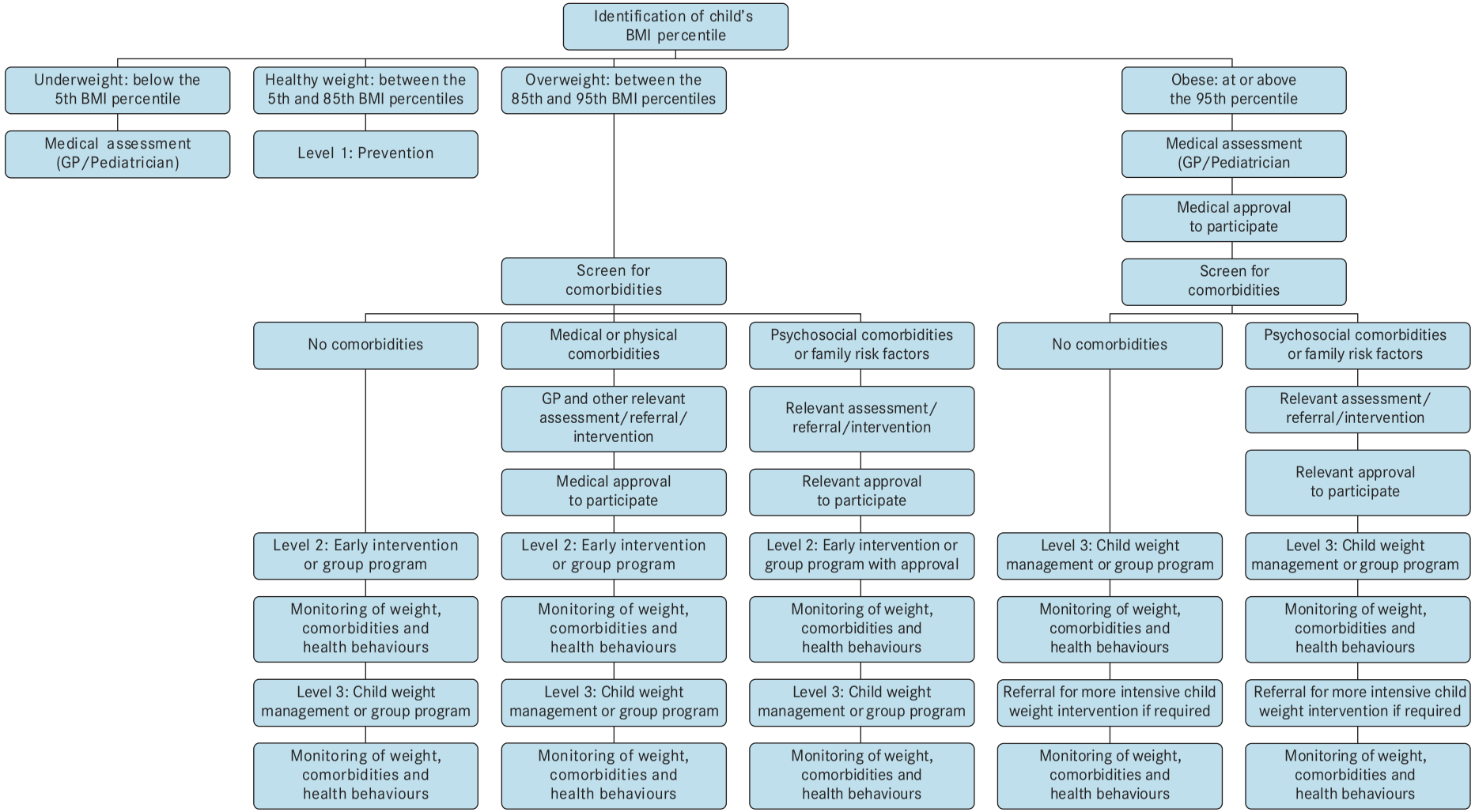
Stage 5 Assessing child and family eating and activity habits

Stage 6 Providing intervention for childhood overweight and obesity

Stage 7 Long-term monitoring of childhood weight status, obesity-related comorbidities and health behaviours.

These seven stages, and the steps within each stage, are summarised as a flowchart in Figure 1 on the following page, and considered in detail on pages 8–26. The stages and steps are also presented as a summary checklist in Attachment 1.

Figure 1: Framework for child weight management in community health services



Stage 1: Identifying overweight and obesity in children

Many parents of overweight children are unaware that their child is above their healthiest weight (Etelson et al., 2003; Miller et al., 2007; Campbell et al., 2006). The primary health care setting provides one of few opportunities to sensitively screen, identify and discuss childhood overweight and obesity with families (Barlow & Expert Committee, 2007). Given the sensitive nature of child weight management, families are likely to be most comfortable with and receptive to weight-related information when it is presented by health professionals whom they trust to deal sensitively with their health care needs (Marsden et al., 2006).

Families may present for child weight management in community health services via a number of pathways. Childhood overweight may be identified during either initial needs identification and assessment, or while the family is accessing other community health services. Families may also be referred via external health professionals such as school nurses or general practitioners. In some cases families may self-refer in response to child or parent concerns about child weight and health.

Steps

1 Introduce the rationale for assessing and monitoring growth and using BMI percentiles.
2 Accurately measure height and weight and calculate BMI.
3 Plot BMI on sex-specific BMI-for-age percentile charts to identify a child's weight status.
4 Explain results of assessments to parents.

Step 1: Introduce the rationale for assessing and monitoring growth and using BMI percentiles

Parental understanding and motivation regarding child weight and health must be considered throughout all stages of assessment and treatment. Commence with exploration of the parent's perspectives and beliefs regarding their child's weight, and excess child weight generally.

Explain that a range of information will be used to identify opportunities to improve the health of their child and family. Discuss the importance of weight as one indicator of health, and the need for regular clinic-based measurement to provide an indicator of healthy growth. Be clear that you will ask the child and parents questions about family health habits, and that measuring the child's height and weight will provide some additional information.

The Royal Children's Hospital *Introducing body mass index (BMI) in children* pamphlet (Attachment 2) and CD-ROM demonstrate how to discuss a child's weight with their parents.

Step 2: Accurately measure height and weight and calculate BMI

Accurate height and weight assessment, as well as calculation and plotting the BMI-for-age-and-sex percentile are essential for the accurate determination of a child's weight status (NHMRC, 2003a; 2003b; Barlow & Expert Committee, 2007). Except in more severe cases, it is not possible to accurately detect a child's weight status visually. Objective measurement is required for the accurate identification of childhood overweight and obesity. No single value clearly identifies disease risk; however, the use of BMI percentiles, in combination with other clinical information, provides an indication of the need for intervention (NHMRC, 2003a; 2003b; Barlow & Expert Committee, 2007).

The Royal Children's Hospital *Body mass index (BMI) for children* information sheet (Attachment 3) explains how to accurately measure child height and weight and calculate BMI. Accurate weighing and measuring require the use of calibrated scales and a stadiometer.

Step 3: Plot BMI on sex-specific BMI-for-age percentile charts to identify a child's weight status

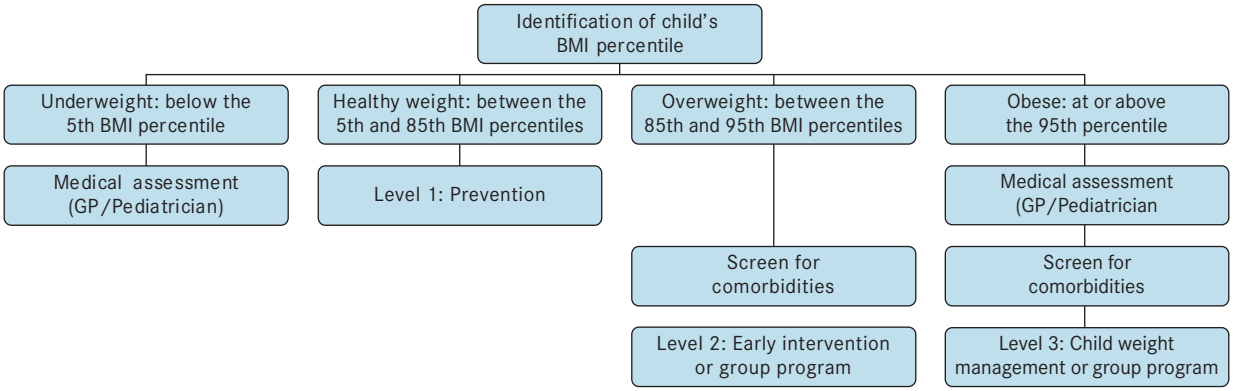
The healthy weight range differs depending on a child's age and sex. Age- and sex-specific BMI percentiles are therefore used to identify overweight and obesity in children (NHMRC, 2003a). The BMI growth charts published by the National Center for Chronic Disease Prevention and Health Promotion (USA) are recommended for use in Australia (NHMRC, 2003a). The BMI growth charts for boys and girls are included as Attachments 4 and 5. In Australia the BMI percentiles are generally interpreted in the following way:

- Children below the 5th BMI percentile are considered underweight.
- Children between the 5th and 85th BMI percentiles are considered normal/healthy weight.
- Children between the 85th and 95th BMI percentiles are considered overweight.
- Children at and above the 95th BMI percentile are considered obese.

Child weight categories

Once, the child's BMI percentile has been identified, the appropriate next steps in assessment and treatment are summarised in Figure 2 and described below.

Figure 2: Identification of child weight status and appropriate interventions



Underweight range: below the 5th BMI percentile

Children with a BMI below the 5th BMI percentile are considered underweight. Underweight children are not suitable for a community health care–based child weight management intervention—these children should be referred to their general practitioner or paediatrician for a medical assessment. Based on this assessment, the general practitioner or paediatrician may refer the family to dietetic or psychological assessment.

Normal weight range: between the 5th and 85th BMI percentiles

Children with a BMI between the 5th and 85th BMI percentiles are in the healthy weight range. Offer Level 1: Prevention, (see Stage 6, page 21) designed to encourage parents to continue to promote healthy lifestyle habits in their children using the community health service child weight management key messages.

Parents who have raised concerns, or continue to be concerned, about the weight of a child in the healthy weight range can be provided with information about promoting a healthy self-concept and body image in children and offered appropriate referral as required.

Overweight range: between the 85th and 95th BMI percentiles

Children with a BMI between the 85th and 95th BMI percentiles are considered overweight. Overweight children are potentially suitable for Level 2: Early intervention (see Stage 6, page 21), aimed at promoting basic healthy lifestyle eating and activity to improve BMI status. Screen for possible comorbidities (see Stage 2, page 11) before treatment or referral to determine the child and family's suitability for a community health care–based child weight management intervention. Overweight children with evident comorbidities should be referred to a relevant health professional for assessment before commencement of a community health service–based child weight management intervention. Based on their assessment, the health professional may choose to work with a community health care–based child weight management service or to actively manage the client themselves.

Obese weight range: at or above the 95th BMI percentile

Children with a BMI at or above the 95th BMI percentile are considered obese, and are at risk for obesity-related comorbidities. These children should be referred to their general practitioner or paediatrician for a medical assessment before commencement of a community health service–based child weight management intervention. Based on their assessment, the general practitioner or paediatrician may choose to work with community health care–based services or to actively manage the client themselves.

Obese children, with medical approval, are potentially suitable for Level 3: Child weight management (see Stage 6, page 21), aimed at improved BMI status. Assess for other possible comorbidities (see Stage 2, page 11) and parental motivation (see Stage 3, page 15) before treatment or referral, to determine the child and family's suitability for a community health care–based child weight management intervention.

Step 4: Explain results of assessments to parents

Generally, it is better to discuss a child's weight with parents when the child is not present. However, if the child has raised concerns about their weight they may benefit from being involved in at least some of these discussions. Discuss results in a matter-of-fact way and explain the child's BMI percentile. Highlight the potential for children to achieve a healthier body weight with improved eating and activity habits supported by a healthy home environment. Emphasise the parent's role as a powerful agent of change in their child's health behaviour and weight. Throughout this discussion promote parents' confidence that strategies exist which they can use to improve their child's health and weight, and that support is available to assist them to do this.

Highlight to parents that concern about weight can lead parents to put their child on some sort of diet, but that this will be more harmful than helpful. Encourage parents to work with you to complete a more thorough assessment and develop a healthy lifestyle plan for their family before implementing any weight loss strategies.

The Royal Children's Hospital *Introducing body mass index (BMI) in children* pamphlet (Attachment 2) and CD-ROM provide an example of how to discuss a child's weight with parents.

Additional information

The United States Centers for Disease Control and Prevention website provides online advice for professionals regarding the use of BMI-for-age growth charts and identification of overweight and obesity in children and adolescents at: www.cdc.gov/nccdphp/dnpa/growthcharts/training

Stage 2: Screening for childhood overweight and obesity comorbidities and consequences

Excess weight during childhood is associated with a range of both immediate and long-term physical and psychosocial consequences. These factors require assessment and consideration in care planning. Comorbidity screening is required for all overweight and obese children entering community health–based child weight management services. The Stage 2 template: *Screening for childhood overweight and obesity comorbidities and consequences* (Attachment 6) may be used to assist with this process.

Screening for comorbidities can be conducted by any community health service tertiary qualified health professional trained in the use of these guidelines. This screening approach is consistent with a broader needs assessment that considers children and families holistically. It is not intended as a detailed clinical assessment but rather a brief screen for potential comorbidities based on parental report. Generally, it is better to conduct this discussion with parents when the child is not present. If screening identifies potential comorbidities, address or refer as appropriate. The need for additional services should be determined in conjunction with families, and care plans should be developed and documented to describe these referrals.

The steps involved in comorbidity screening for overweight and obese children are listed below.

Steps

1 Screen for common medical and physical comorbidities and address or refer as appropriate.
2 Screen for common psychosocial comorbidities and address or refer as appropriate.
3 Screen for common family risk factors and address or refer as appropriate.
4 Continue to monitor these comorbidities throughout the intervention.

The implementation of these steps is summarised in Figure 3 on page 12 and described below.

Step 1: Screen for common medical and physical comorbidities and address or refer as appropriate

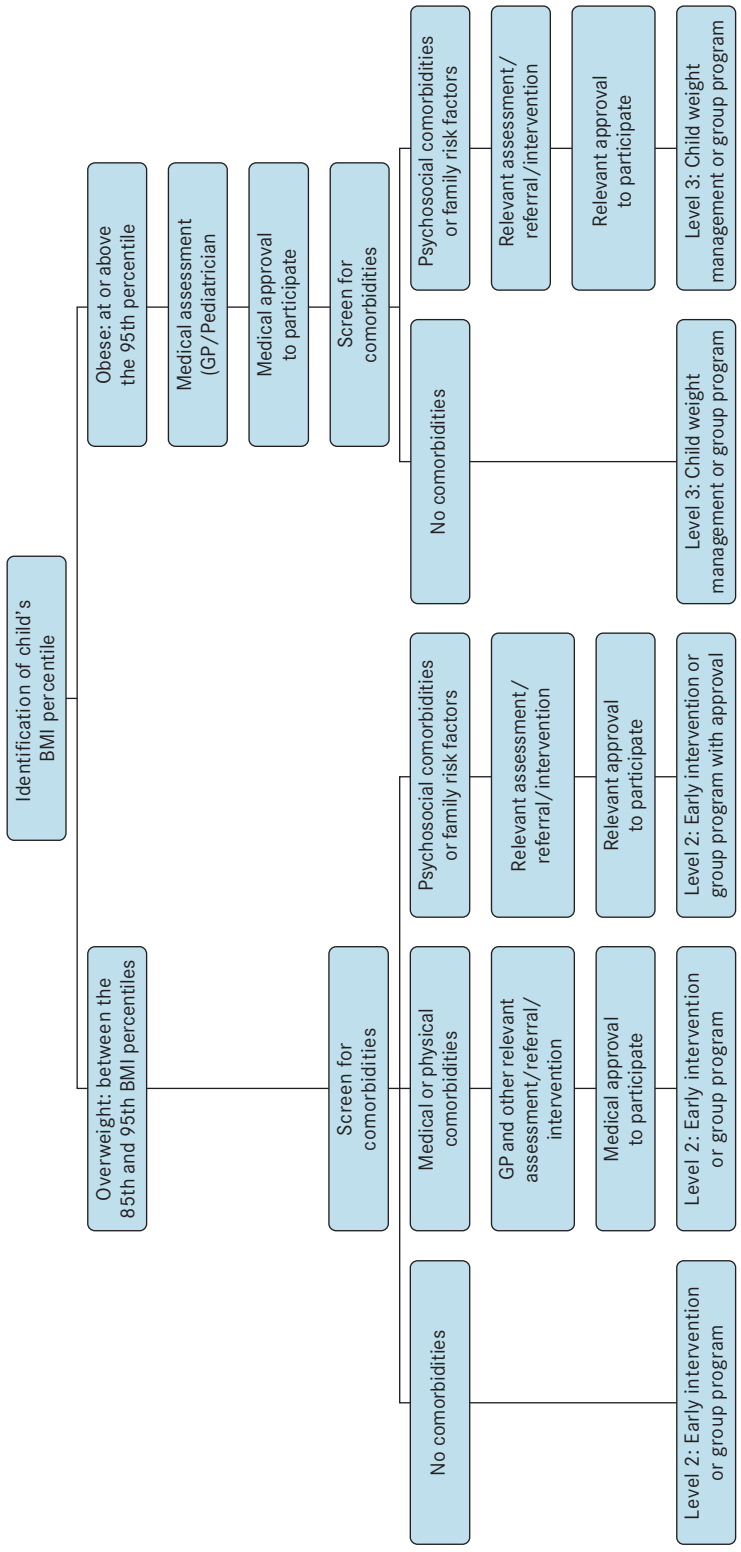
The majority of overweight children will not yet experience the physical consequences of their excess weight, and can safely comply with *The Australian guide to healthy eating* (Smith et al., 1998) and *Australia's physical activity recommendations for 5–12 year olds* (DoHA, 2004) without medical supervision.

However, it is important to screen for medical and physical comorbidities to determine suitability for intervention, and identify additional support needs (Barlow & Expert Committee, 2007; Krebs et al., 2007). Common medical and physical obesity-related comorbidities include problems in the following areas:

- respiratory (for example, asthma, shortness of breath and exercise intolerance)
- sleep (for example, snoring, restless sleeping, daytime sleepiness or nocturnal enuresis)
- gastrointestinal (for example, constipation)
- endocrine (for example, type 2 diabetes symptoms such as excessive thirst and excessive urination, irritability, weakness and fatigue, blurred vision, tiredness, tingling, numbness in feet, slow healing infections)
- cardiovascular (for example, blood pressure)
- skin (for example, irritation, infection)
- musculoskeletal (for example, foot, hip, knee or walking pain) (NHMRC, 2003a).

Be alert to these symptoms and address or refer as appropriate. Care plans should be developed and documented in conjunction with families.

Figure 3: Comorbidity screening in children who are overweight or obese



Refer overweight children (between the 85th and 95th BMI percentiles) with evident medical or physical comorbidities to their general practitioner or paediatrician for a medical assessment to determine their suitability to participate in community health weight management intervention. Obese children (at or above the 95th BMI percentile) are most at risk of medical and physical complications and require medical assessment to determine their suitability to participate in a community health weight management intervention.

Medical professionals are encouraged to use Australian National Health and Medical Research Council clinical practice guidelines to inform their assessment (NHMRC, 2003a; NHMRC, 2003b). Based on their assessment, the general practitioner or paediatrician may determine that the child is suitable for community health child weight management intervention with or without additional medical support, and/or actively manage the client themselves. Once medical approval is obtained, screening, assessment and treatment can be continued.

Step 2: Screen for common psychosocial comorbidities and address or refer as appropriate

Overweight or obese children may already experience weight-related psychosocial consequences. The risk of psychosocial consequences of excess weight increases in older children, heavier children and in females (NHMRC, 2003a). Be alert to psychosocial comorbidities, including problems with:

- low self-esteem/poor self-concept
- poor body image
- disordered eating
- depression/anxiety
- behaviour problems
- teasing and bullying
- school avoidance
- social isolation.

Treat or refer overweight and obese children and families with evident psychosocial comorbidities as appropriate. Care plans should be developed and documented in conjunction with families.

Step 3: Screen for common family risk factors and address or refer as appropriate

Numerous family factors may also be associated with the child weight status, and/or the family's capacity to benefit from weight loss interventions. Be alert to family difficulties, including:

- parenting difficulties
- parental coping
- marital/family difficulties
- social support
- financial difficulties
- housing difficulties
- parental motivation.

Treat or refer overweight and obese children and families with evident family risk factors as appropriate. Care plans should be developed and documented in conjunction with families.

Intervention for physical, psychosocial and family problems may be offered before, during, following or in place of weight management interventions. Families should be involved in decision making regarding treatment priorities, and care plans should be developed and documented.

Treatment decisions should be informed by the knowledge that excess weight is a chronic condition, and it may be difficult for families to benefit from treatment if they are burdened by other problems (Barlow & Expert Committee, 2007; Spear et al., 2007).

Step 4: Continue to monitor these comorbidities throughout the intervention

After an assessment of psychosocial or family risk factors, the clinician may determine the child is suitable for community health child weight management intervention with or without additional support and/or actively manage the client themselves. If an appropriate health professional approval is obtained, the child and family's assessment and treatment can continue.

Continue to review care plans and monitor comorbidities throughout the intervention and follow-up. If physical, psychosocial or family risk factors become evident during this period, assess, address and refer as appropriate. It may be necessary to postpone or cease weight management treatment to respond to these other concerns.

Stage 3: Considering and enhancing parental motivation for change

Parental and family motivation is essential for effective child weight management (Reilly & Wilson, 2006). Intervention is unlikely to be effective if parents are not motivated to change (Barlow & Expert Committee, 2007; Davis et al., 2007). Parents are more likely to be motivated to make changes to manage their child's weight when they have sufficient knowledge about child weight and health, believe that their child's excess weight is important, believe that the required changes are worthwhile, and have confidence in their ability to make the necessary changes (Miller & Rollnick, 2002).

Assessment and treatment conducted in a supportive, empathic and non-judgmental way can promote each of these areas and thus enhance parental engagement, motivation and readiness for change (Miller & Rollnick, 2002). The clinician can enhance treatment motivation by emphasising the family's strengths, avoiding parent blame and criticism, and promoting parent confidence that they can make effective family changes (Barlow & Expert Committee, 2007; Corcoran, 2005; Davis et al., 2007; Edmunds, 2005; Kirk et al., 2005; Miller & Rollnick, 2002). The following strategies should be used throughout assessment and treatment to consider and enhance parental motivation for change:

- non-directive questioning to explore parental attitudes and beliefs
- reflective listening to summarise and clarify parental responses
- exploring consistencies and discrepancies in parental values and behaviours
- importance and confidence ratings to explore parental motivation (Barlow & Expert Committee, 2007).

Parents with high levels of readiness for change can be offered the most appropriate level of intervention (Barlow & Expert Committee, 2007). The clinician can work with parents to promote their perceived importance, confidence and readiness to change (Miller & Rollnick, 2002). Parents who indicate that their motivation for change is currently low are unlikely to benefit from treatment at that time (Reilly & Wilson, 2006). Instead, they can be offered information and support to encourage them to return in the future when they may be more ready for change.

Stage 4: Referring to an approved child weight management group program or providing individual intervention

Families are eligible to participate in an approved community health service child weight management intervention if the parent is motivated to participate, and the child:

1. is between the 85th and 95th BMI percentiles for age and sex, and
    a. is not experiencing any medical, physical or psychosocial comorbidities, or any family risk factors, likely to affect participation

    OR

    b. has medical, physical or psychosocial comorbidities, or family risk factors, AND has appropriate heath professional approval to participate

    OR

2. is at or above the 95th BMI percentile for age and sex, AND has medical approval to participate, and
    a. is not experiencing any physical or psychosocial comorbidities, or family risk factors, likely to affect participation

    OR

    b. has physical or psychosocial comorbidities, or family risk factors, AND has appropriate heath professional approval to participate.

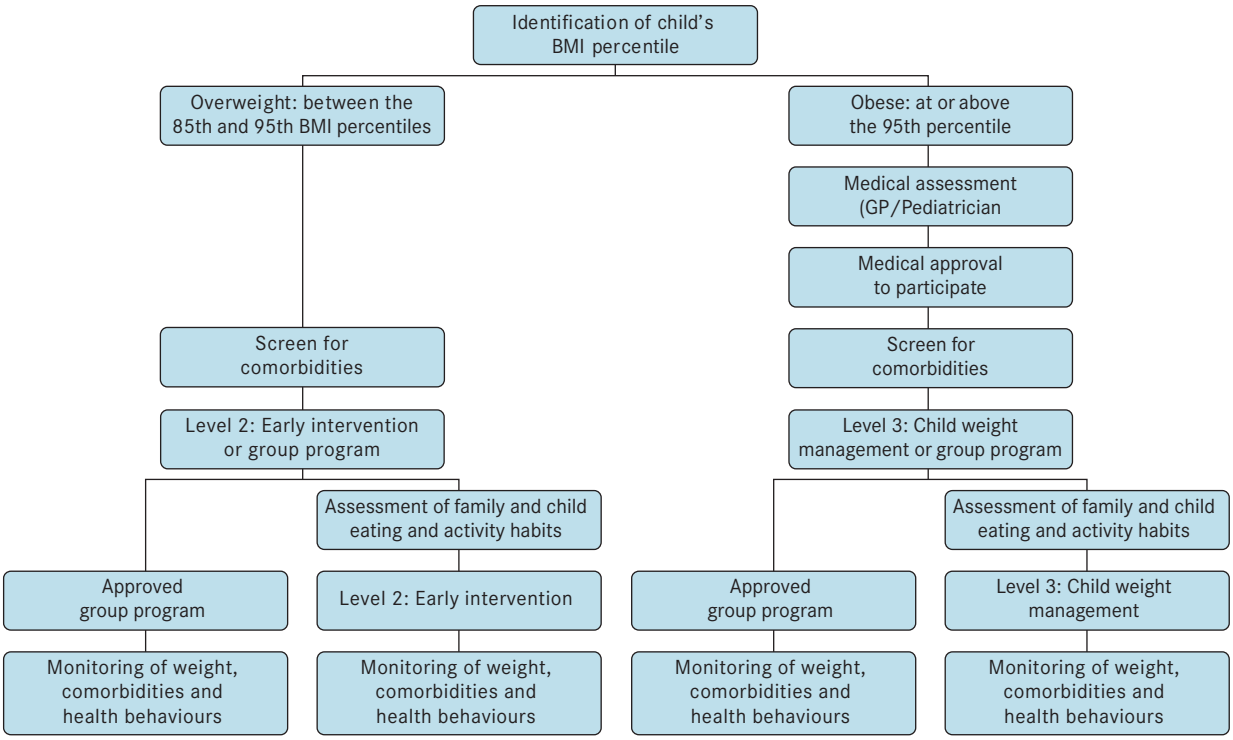
Families ineligible for community health service child weight management should be referred to their general practitioner or paediatrician for advice on managing child weight.

After completion of stages 1 to 3, eligible families can be referred to an evidence-based group program approved by DHS as suitable for community health services child weight management. Referral can be made using the *Community health services child weight management group program screening tool* (Attachment 7) and Service Coordination Tool Templates (SCTT).

Community health service staff may provide individual weight management intervention to families unable to participate in a group, families with more complex needs, and families that require ongoing support upon completion of a group intervention. Stages 5 to 7 of these guidelines relating to assessment, intervention and follow-up are designed to support this practice.

The stages of identification. assessment, intervention and monitoring are summarised in Figure 4 on page 17.

Figure 4: Summary of identification, assessment, intervention and monitoring for children who are overweight or obese



Stage 5: Assessing child and family eating and activity habits

Intervention should be informed by assessment of the modifiable health behaviours likely to contribute to energy imbalance, and the family's capacity and motivation to make health behaviour changes (Barlow & Expert Committee, 2007). The *Brief family eating and activity assessment tool* (Attachment 8) can be used to assist with the assessment of eating, activity and weight control behaviours, motivation, facilitators and barriers to change.

This is not a comprehensive assessment of eating and activity requiring specialist expertise; rather, it is a general assessment aimed at identifying modifiable behaviours likely to affect weight, and thus can be conducted by a single health professional. Be alert to difficulties in each of these areas and refer families for specific allied health assessment as required. Generally, it is better to have this discussion with parents when the child is not present. However, if the child has raised concerns about their weight they may benefit from being directly involved in at least some of this discussion.

Steps

1 Explore the child's and family's weight control behaviours, body image and psychosocial factors.
2 Explore the child's and family's eating habits and food choices.
3 Explore the child's and family's sedentary time and physical activity habits.

Step 1: Explore the child's and family's weight control behaviours, body image and psychosocial factors

Some weight loss strategies are not only ineffective, but also potentially harmful. Although weight control strategies such as dieting typically result in short-term weight loss, diets are difficult (often impossible) to maintain and weight is typically regained. Dieting also increases the risk of overeating and binge eating, resulting in a higher body weight.

Obtain information about the family's and child's:

- weight control behaviours (attempts to lose weight, exercise, dietary restriction, weight loss products, vomiting or laxative use, family talk and modelling related to weight control behaviours)
- body image (body perceptions, body checking and avoidant behaviours, body-related thoughts and beliefs, distress associated with body weight or shape, family talk and modelling related to body weight and shape)
- negative social experiences (teasing, bullying, social exclusion).

Referral for psychological assistance may be required if extreme weight loss behaviours, high level of negative body image and/or negative social experiences are evident.

Step 2: Explore the child's and family's eating habits and food choices

Obtain information about the child's and family's eating habits, such as:

- consumption of food purchased outside the home (eating out and take-away)
- frequency and quality of breakfast
- school lunch provisions
- involvement in and location of evening meals
- meal and snack frequency
- non-hungry eating

- portion sizes of meals and snacks
- responsibility for food provision, preparation and choices
- use of food as a reward or consequence
- parental modelling of healthy eating.

Explore barriers and opportunities for healthier child and family eating habits and routines. Referral for dietetic or parenting assistance may be required if meal structure is very irregular, there are high levels of non-hungry eating, or parents feel unable to influence family eating routines and rules.

Obtain information about parental provision and child consumption of:

- vegetables
- fruit
- multigrain bread and cereal
- low-fat dairy products
- meat, fish, poultry, eggs and nuts
- water
- 'extras'—energy-dense drinks (for example, soft drink, cordial, fruit juice) and foods (for example, fried foods, biscuits, cakes)

Explore barriers and opportunities for healthier food choices. Referral for parenting assistance may be required if parents feel unable to influence their child's eating habits or food choices. Referral for dietetic assistance may be required if the child has a diet very high in extras and low in core foods, a very restricted diet, or specific dietary restrictions.

Step 3: Explore the child's and family's sedentary time and physical activity habits

Obtain information about sedentary time in the child's day, such as:

- sedentary transport
- screen time (for example, television, DVDs, electronic games, computers)
- other sedentary activities occurring in the time between returning from school and dinner.

Obtain information about both incidental and planned physical activity in the child's day, such as:

- time spent being active
- active transport to school or other locations
- time spent outside
- active interests (for example, walking the dog)
- chores (for example, mowing the lawn)
- participation in sport and structured exercise (for example, swimming lessons, Auskick, tennis, karate).

Also explore the family's activity habits and routines, including:

- time spent together in active pastimes (for example, family walks or bike rides, gardening, bowling)
- time spent together in sedentary pastimes (for example, watching television or DVDs, going to the movies)
- expectations about child activities when unsupervised (for example, outside free play, or TV/computer)
- modelling of healthy physical activity habits

- parental creation of physical activity opportunities for:
  - active play
  - participation in sport and structured exercise

Explore barriers and opportunities for reduced sedentary behaviour and increased incidental and planned physical activity. Referral for parenting assistance may be required if parents feel unable to limit their child's sedentary time or influence their child's physical activity. Referral for physical/exercise assessment may be required if the child reports pain with physical activity or is unable to perform the fundamental motor skills required for exercise/sport participation.

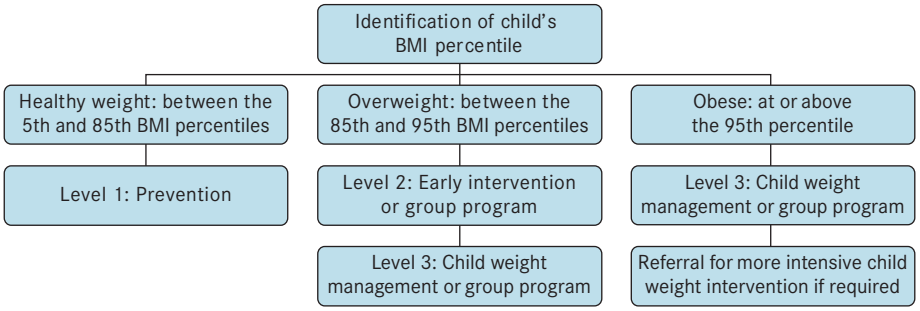
Stage 6: Providing intervention for childhood overweight and obesity

Community health child weight management is a stage-based approach. Intervention commences with the least-intensive intervention approach, progress is reviewed regularly, and intervention should be intensified if improvements are not evident across a three-to-six-month period (Barlow & Expert Committee, 2007).

The key messages are consistent for all families; however, the level of intervention required will be determined by the degree of overweight or obesity and presence of associated comorbidities, the child's and family's current health behaviours and associated facilitators and barriers, and parental motivation or readiness to change. Long-term monitoring is recommended across all levels of intervention. Intervention should target parents as the exclusive agent of change. However, if the child has raised concerns about their weight they may benefit from being involved.

The appropriate interventions for healthy weight, overweight and obese children are summarised in Figure 5 below.

Figure 5: Selecting the appropriate level of intervention



The levels of intervention, strategies and recommendations outlined below are based on the recommendations outlined in Pediatrics (Barlow & Expert Committee, 2007). Australian guidelines, including *The Australian guide to healthy eating* (Smith et al., 1998) and *Australia's physical activity recommendations for 5–12 year olds* (DoHA, 2004). The Australian National Health and Medical Research Council's *Clinical practice guidelines for management of overweight and obesity in children and adolescents* (NHMRC, 2003a) and *Overweight and obesity in children and adolescents: A guide for general practitioners* (NHMRC, 2003b) can also be used to support these guidelines. Recommendations may need individual tailoring to be consistent with cultural and family values.

A range of evidence-based tip sheets are freely available and can be used to support these interventions. Information regarding access to these resources is outlined in 'How to order or download supporting resources' (Attachment 9).

Child weight management in community health services —key messages

Family change

- Make whole-of-family lifestyle changes.
- Be a healthy role model for your children.
- Adapt recommendations to your cultural and family values and beliefs.
- Do not put children on a diet, describe health behaviour changes as a diet, or focus on weight when promoting health behaviour changes.

Psychosocial wellbeing

- Model acceptance of all body sizes and shapes.
- Avoid negative comments about your own or others' bodies.
- Emphasise health, fitness and enjoyment, rather than weight loss, as reasons for health behaviours.
- Emphasise your child's achievement, talents and skills.
- Help your child develop social skills and coping strategies.

Food choices

- Provide a wide selection and the recommended quantities of foods consistent with *The Australian guide to healthy eating*.
- Provide a variety of vegetables every day.
- Encourage consumption of at least five serves of vegetables each day.
- Provide a variety of fruit each week.
- Encourage consumption of at least two serves of fruit per day.
- Provide multigrain breads and cereals.
- Provide low-fat dairy products.
- Provide lean meats and fish.
- Use low-fat cooking techniques.
- Minimise availability and consumption of energy-dense foods.
- Minimise availability and consumption of sugar-sweetened beverages (for example, juice, soft drink, cordial).
- Provide water as your family's main drink.

Eating habits

- Provide portion sizes consistent with The Australian guide to healthy eating.
- Minimise eating out and take-away foods.
- Provide breakfast and encourage daily consumption.
- Provide a healthy school lunch.
- Eat three meals and healthy snacks each day.
- Eat meals together at the table as a family as often as possible.
- Eat meals and snacks without distraction.
- Minimise non-hungry eating.
- Provide healthy food choices at appropriate meal and snack times, and allow the child to decide what and how much they will eat from what is provided.

Sedentary time

- Limit television and other screen time to less than two hours per day.
- Do not have televisions and other screen activities in children's bedrooms.

Physical activity

- Provide opportunities for children to accumulate at least one hour (and up to several hours) of moderate to vigorous physical activity per day.
- Encourage a range of fun and interesting activities, including organised sports and activities, informal activities and active play.
- Encourage walking and riding as active transport options.
- Be active together as a family as often as possible.

Levels of intervention

Level 1: Prevention

Level 1: Prevention is recommended for parents of children in the healthy weight range (between the 5th and 85th BMI percentiles), to encourage parents to continue promoting healthy lifestyle habits in their children using the healthy lifestyle key messages (Barlow & Expert Committee, 2007). These messages are consistent with *The Australian guide to healthy eating* (Smith et al., 1998) and *Australia's physical activity recommendations for 5–12 year olds* (DoHA, 2004).

Many Australian children, including those in the healthy weight range, do not meet the Australian recommendations for healthy eating and activity habits (CSIRO, 2008). Additionally, many children in the healthy weight range go on to become overweight or obese adolescents and adults (Magarey et al., 2003). Providing parents of children in the healthy weight range with information and encouragement to promote healthy eating and physical activity in their children is important for the promotion of healthy lifestyles and the prevention of excess weight in the future.

Level 1: Prevention can be conducted by any community health service tertiary qualified health professional trained in the use of these guidelines. This involves providing families with information about healthy eating and physical activity habits (for example, the Kids—'Go for your life' website and tip sheets, the Better Health Channel, *The Australian guide to healthy eating, Australia's physical activity recommendations for 5–12 year olds*) and alerting parents to relevant community-based activities such as active recreation, sports programs and youth groups.

The following tip sheets are recommended for Level 1: Prevention:

1. *Australian guide to healthy eating brochure summary*
2. *Australia's physical activity recommendations for 5–12 year olds*
3. Go for your life, *Healthy eating and activity in primary school years (5–12 years)*
4. Go for your life, *Getting your family going*
5. Go for your life, *Why no sweet drinks for children*
6. Go for your life, *'Try it—you'll like it!' Vegetables and fruit for children*
7. Go for your life, *Healthy lunch boxes for children*
8. Better Health Channel, *Children—getting them active*
9. Better Health Channel, *Body image—tips for parents*

Level 2: Early intervention

Level 2: Early intervention is recommended as the first level of intervention for parents of children in the overweight range (between the 85th and 95th BMI percentiles). This level of intervention promotes basic healthy lifestyle eating and activity aimed at improved BMI status (Barlow & Expert Committee, 2007). Level 2: Early intervention messages are consistent with T*he Australian guide to healthy eating* (Smith et al., 1998) and *Australia's physical activity recommendations for 5–12 year olds* (DoHA, 2004).

Level 2: Early intervention can be conducted by any community health service tertiary qualified health professional trained in the use of these guidelines. This intervention is informed by the identification of possible comorbidities and assessment of eating and activity behaviours. With a joint understanding of the child's weight status and health behaviours clinicians and parents can work together to identify appropriate behaviours to target.

Early intervention targets those changes which the parent is ready and able to make, and which are most likely to improve child health and weight. Assist parents to break these goals down into achievable steps. Assist in behavioural management of family changes as appropriate. Tailor the frequency of treatment sessions to family needs. Review progress after three to six months, and adjust the level of intervention as required.

The following tip sheets are recommended for Level 2: Early intervention:

1. *The Australian guide to healthy eating: Background information for consumers*
2. *Australia's physical activity recommendations for 5–12 year olds*
3. Go for your life, *Healthy eating and activity in primary school years (5–12 years)*
4. Go for your life, *Getting your family going*
5. Go for your life, *Why no sweet drinks for children*
6. Go for your life, *'Try it—you'll like it!' Vegetables and fruit for children*
7. Go for your life, *Healthy lunch boxes for children*
8. Better Health Channel, *Children—getting them active*
9. Better Health Channel, *Body image—tips for parents*
10. Better Health Channel, *Body image and diets*

Level 3: Child weight management

Level 3: Child weight management is recommended as the first level of intervention for parents of children in the obese range (at or above the 95th BMI percentile), and for parents of children in the overweight range (between the 85th and 95th BMI percentiles) requiring more intensive intervention than Level 2: Early intervention. This level of intervention provides more intensive support and structured behaviour change strategies aimed at improved lifestyle habits and BMI status (Barlow & Expert Committee, 2007). Level 3: Child weight management strategies are consistent with the Australian National Health and Medical Research Council *Clinical practice guidelines for management of overweight and obesity in children and adolescents* (NHMRC, 2003a) and *Overweight and obesity in children and adolescents: A guide for general practitioners* (NHMRC, 2003b).

Level 3: Child weight management can be conducted by any community health service tertiary qualified health professional with additional training in child weight management. While promoting the same key messages, this level of intervention provides additional structure and support. Behavioural strategies are used to promote sustained behaviour change. These include daily monitoring of eating and activity habits, structured goal setting and reinforcement of goal achievement.

Implementation of Level 3: Child weight management will be most effective with the support of a multidisciplinary team. A dietitian may be required to assist with the development of the healthy eating plan, and a physical/exercise therapist for assistance with physical activity goals. Counsellors or psychologists can assist with promoting treatment engagement and readiness to change, goal setting, monitoring and reinforcement, and parenting skills training to support parents to change the family environment and child's behaviour.

Schedule treatment sessions at least monthly—families will benefit from more frequent treatment sessions initially. Review progress after three to six months, and increase or decrease the level of intervention as required.

The following tip sheets and resources are recommended for Level 3: Child weight management.

1. *The Australian guide to healthy eating: Background information for consumers*
2. *Australia's physical activity recommendations for 5–12 year olds*
3. Go for your life, *Healthy eating and activity in primary school years (5–12 years)*
4. Go for your life, *Getting your family going*
5. Go for your life, *Why no sweet drinks for children*
6. Go for your life, *'Try it—you'll like it!' Vegetables and fruit for children*
7. Go for your life, *Healthy lunch boxes for children*
8. Better Health Channel, *Children—getting them active*
9. Better Health Channel, *Body image—tips for parents*
10. Better Health Channel, *Body image and diets*

More intensive child weight intervention

Children who do not respond to the interventions described above may benefit from more intensive child weight management intervention. Access to these services typically requires a referral from the child's general practitioner or paediatrician.

Comprehensive multidisciplinary intervention is recommended for parents of children who are obese and require more intensive intervention (Spear et al., 2007). While the eating and activity goals are similar, specialised intervention is likely to include increased intensity of behaviour change goals, frequency of visits, support, structure and specialised expertise. This level of intervention is likely to exceed the capacity of individual community health services. Community health services within each region are encouraged to work together to identify a multidisciplinary team, including medical, dietetic, exercise and psychological health professionals, with appropriate tertiary qualifications and expertise in childhood obesity to offer this level of intervention.

Tertiary child weight management is recommended for severely obese children and those with significant obesity-related comorbidities (Spear et al., 2007). These services are typically based in hospital, rather than community health settings, and are ideally staffed by a multidisciplinary team of child weight management experts including paediatricians, dietitians, psychologists and exercise specialists.

Stage 7: Long-term monitoring of childhood weight status, obesity-related comorbidities and health behaviours

Steps

1 Accurately measure height and weight, calculate BMI and plot on sex-specific BMI-for-age percentile charts.
2 Screen for obesity-related medical, physical or psychosocial comorbidities, and for family risk factors; address or refer as appropriate.
3 Assess child and family eating, activity and weight control behaviours; modify treatment approach as appropriate.

Step 1: Accurately measure height and weight, calculate BMI and plot on sex-specific BMI-for-age percentile charts

Regularly measure child height and weight, and plot BMI percentiles as outlined in Stage 1 of this guide. Three-monthly monitoring is recommended for monitoring growth and the impact of intervention on body composition in children who experience, or are at risk of, overweight and obesity (NHMRC, 2003b). Implementing a recall system may be required to ensure that this occurs.

A dramatic change in growth rate is cause for concern. Both rapid increases and rapid decreases (even for children who are overweight or obese) can be indicative of a problem, and related to negative health outcomes; thus they warrant further investigation, modification to the intervention approach and/or referral for specialised assessment and treatment (NHMRC, 2003b).

Step 2: Screen for obesity-related medical, physical or psychosocial comorbidities, and for family risk factors; address or refer as appropriate

During recall appointments continue to screen for obesity-related medical, physical or psychosocial comorbidities, and for family risk factors, as outlined in Stage 2 of this guide. Identification of new comorbidities could indicate a need for referral and/or modification to intervention approaches.

Step 3: Assess child and family eating, activity and weight control behaviours; modify treatment approach as appropriate

During recall appointments continue to review the child's and family's eating, activity and weight control behaviours as outlined in Stage 5 of this guide. Explore family barriers and opportunities and parental motivation. Treatment decisions will be informed by ongoing assessment of these factors.

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Attachments

Attachment 1: *Identification, screening and intervention planning template*

Attachment 2: The Royal Children's Hospital *Introducing body mass index (BMI) in children* pamphlet

Attachment 3: Royal Children's Hospital Body mass index (BMI) for children information sheet

Attachment 4: National Center for Chronic Disease Prevention and Health Promotion (USA), 2 to 20 years: *Boys–Body mass index-for-age percentiles*

Attachment 5: National Center for Chronic Disease Prevention and Health Promotion (USA), 2 to 20 years: *Girls–Body mass index-for-age percentiles*

Attachment 6: *Stage 2 template: Screening for child overweight and obesity comorbidities and consequences*

Attachment 7: *Community health services child weight management group program screening tool*

Attachment 8: *Brief family eating and activity assessment tool*

Attachment 9: How to order or download supporting resources

Attachment 1: Identification, screening and intervention planning template

Stage 1: Identifying overweight and obesity in children

- ❑ Step 1: Introduce the rationale for assessing and monitoring growth and use of BMI percentiles (see the Royal Children's Hospital *Introducing body mass index (BMI) in children* pamphlet (Attachment 2) and CD-ROM for an example)
- ❑ Step 2: Accurately measure height and weight and calculate BMI (see Attachment 2: Royal Children's Hospital *Body mass index (BMI) in children* information sheet), and record on BMI-for-age percentile charts
- ❑ Step 3: Plot BMI on sex-specific BMI-for-age percentile charts to identify the child's weight status (Attachments 4 and 5)
- ❑ Step 4: Report results of assessments to parents (see the Royal Children's Hospital *Introducing body mass index (BMI) in children* pamphlet (Attachment 2) and CD-ROM for an example)

Stage 2: Screening for childhood overweight and obesity comorbidities and consequences

- ❑ Step 1: Screen for common medical and physical health comorbidities
  - ❑ Address or refer as appropriate
- ❑ Step 2: Screen for common psychosocial comorbidities
  - ❑ Address or refer as appropriate
- ❑ Step 3: Screen for common family risk factors
  - ❑ Address or refer as appropriate
- ❑ Step 4: Continue to monitor these comorbidities throughout intervention

Stage 3: Considering and enhancing parental motivation for change

- ❑ Step 1: Use non-directive questioning to explore parental attitudes and beliefs
- ❑ Step 2: Use reflective listening to summarise and clarify parental responses
- ❑ Step 3: Explore consistencies and discrepancies in parental values and behaviours
- ❑ Step 4: Use importance and confidence ratings to enhance parental motivation

Stage 4: Referring to an approved child weight management group program or providing individual intervention

- ❑ Complete referral form for group-based child weight management program

OR

- ❑ Continue with assessment (for families not appropriate for group program)

Stage 5: Assessing child and family eating and activity habits

- ❑ Step 1: Explore weight control behaviours, body image and psychosocial factors
  - ❑ Address or refer as appropriate
- ❑ Step 2: Explore the child's and family's eating habits and food choices
  - ❑ Address or refer as appropriate
- ❑ Step 3: Explore the child's and family's sedentary time and physical activity habits
  - ❑ Address or refer as appropriate

Stage 6: Providing intervention for childhood overweight and obesity

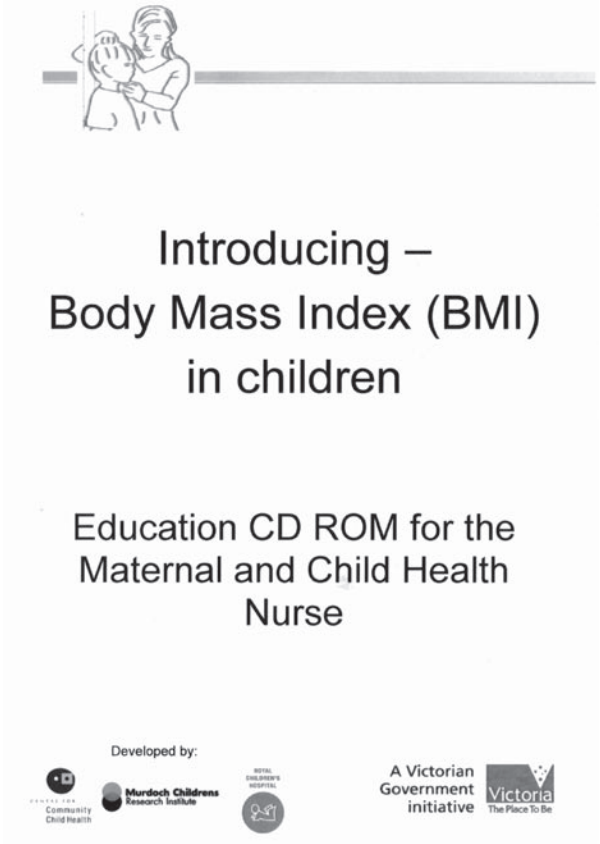
- ❑ **Level 1: Prevention**—Healthy-weight children (between the 5th and 85th BMI percentiles)
- ❑ **Level 2: Early intervention**—Overweight children (between the 85th and 95th BMI percentiles)
- ❑ **Level 3: Child weight management**—Obese children (at and above the 95th BMI percentile), and overweight children (between the 85th and 95th BMI percentiles) requiring more intensive treatment
- ❑ Refer for more intensive child weight intervention

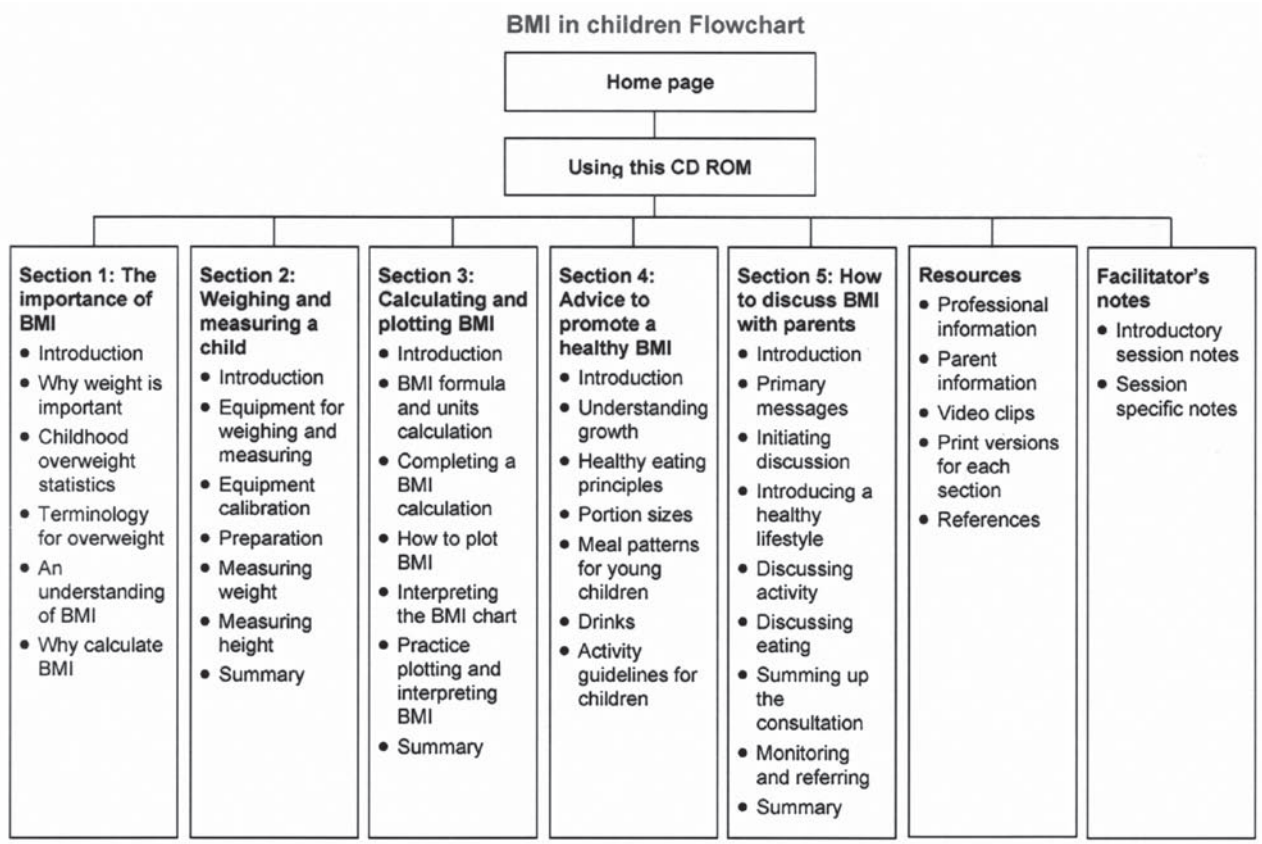
Stage 7: Long-term monitoring of childhood weight status, obesity-related comorbidities and health behaviours

- ❑ Step 1: Accurately measure height and weight and calculate BMI (see Attachment 3 Royal Children's Hospital Body Mass Index (BMI) in Children information sheet for direction) and plot on sex-specific BMI-for-age percentile charts
- ❑ Step 2: Screen for common medical, physical or psychosocial health comorbidities, and for family risk factors
  - ❑ Address or refer as appropriate
- ❑ Step 3: Assess child and family eating, activity and weight control behaviours; modify treatment as required
  - ❑ Address or refer as appropriate

Attachment 2: The Royal Children's Hospital Introducing Body Mass Index (BMI) in Children pamphlet

This pamphlet should be read in conjunction with the CD-ROM.





About the "Body Mass Index (BMI) in children" CD ROM

Aim

This educational resource has been specifically designed to support Maternal and Child Health nurses to understand the importance of BMI in children and develop skills in calculating BMI and discussing the results with parents. This knowledge and skills is particularly pertinent as the BMI-for-age percentile charts are now included in the Child Health Record.

This resource is **not** a surrogate for training nurses in the management of obesity.

Using the CD ROM

- This CD ROM has been designed to be a self directed learning package for the individual nurse.
- All the materials required to undertake this professional development are on the CD ROM, including video clips, worksheets and answers to questions posed, useful websites and parent information sheets.
- Whilst the primary approach is self directed learning, there are also materials to support group activities and facilitated sessions.

Structure

The materials are presented in sections. Whilst it is recommended that you work through all the sections in sequence, it should be noted that each section is self contained. This means that you are able to move around the content and fulfill your professional development needs.

Refer to the back page for a flowchart of the content and structure.

Note: The CD ROM will start automatically once inserted into a CD ROM drive.

Content

The following is a brief overview of the content of each section.

Section 1: The importance of BMI covers:

- the importance of weighing, measuring and calculating BMI for children.
- information on obesity trends in Australian children and some of the associated health and social problems.
- how weight status is measured, touching on the subject of BMI and discussing some limitations of the measurement.

Section 2: Weighing and measuring a child covers:

- the correct technique in weighing and measuring young children to attain an accurate weight and height. It includes video demonstrations that highlight correct and precise procedures, as well as causes of errors.

Section 3: Calculating and plotting BMI covers:

- how to plot the BMI on the appropriate BMI chart and how to interpret the result, including the process of calculating and plotting BMI, the BMI formula, the conversion of height to the correct units for the calculation, and the step-by-step process of the calculation.

Section 4: Advice to help promote a healthy BMI in children covers:

- healthy diet and lifestyle advice appropriate for young children, such as appropriate meals and portion sizes, everyday and occasional foods, and drinks.
- the Australian Guide to Healthy Eating and Physical Activity Guidelines.

Section 5: How to discuss BMI with parents covers:

- the process of information giving to parents, including how to initiate a conversation about BMI, appropriate language and phrases to use, verbal and non-verbal cues, body language and questioning style.

Attachment 3: Royal Children's Hospital Body mass index (BMI) for children information sheet

Body Mass Index (BMI) for children

Calculating BMI

$$\text{BMI} = \frac{\text{Weight in Kilograms}}{(\text{Height in Metres}) \times (\text{Height in Metres})}$$

To complete the calculation you can use the following formula:
Weight (kg) ÷ height (cm) ÷ height (cm) x 10,000 = BMI

Weighing and measuring children accurately

Equipment to be used for weighing and measuring children should be serviced and checked for accuracy.

Remove from the child:
- Shoes
- Any hair ornaments that may impede measurement
- Heavy outer garments – eg coats, jackets, big jumpers
- Any heavy articles in their pockets

To ensure correct weight measurements:
1. After pressing the "on" button, wait until the scales show "0.0"
2. Ask the child to stand:
   - Centred on the scales
   - With their feet evenly apart
3. Ask the child to look straight ahead and stand still
4. Record weight to the nearest 0.1kg

To ensure correct height measurements:
1. Ask the child to stand:
   - Up straight
   - With feet and heels together
   - Heels back against the upright section of the stadiometer
   - Arms relaxed by their side, with palms facing inwards
2. Gently position the head. Hold your hand around the jaw, so that the top of the head and stadiometer form a right angle and the chin is not pointing down towards the chest
3. Ask the child to look straight ahead, eg at a marker on a wall
4. Check that their head is still positioned correctly and their heels are still flat on the floor
   Bring the set square down to rest on the child's head
5. Record height to the nearest 0.1cm.

Professional Information

Supplied as part of:
Community Paediatric Review
A national publication for community child health nurses and other professionals
For further information contact the Centre for Community Child Health
The Royal Children's Hospital, Melbourne
Phone 03 9345 6150 or Fax 03 9347 2688 www.rch.org.au/ccch © 2006

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Wyeth
TEL 1800 65 2229

Produced by:

Attachment 4: National Center for Chronic Disease Prevention and Health Promotion (USA), 2 to 20 years: Boys—Body mass index-for-age percentiles

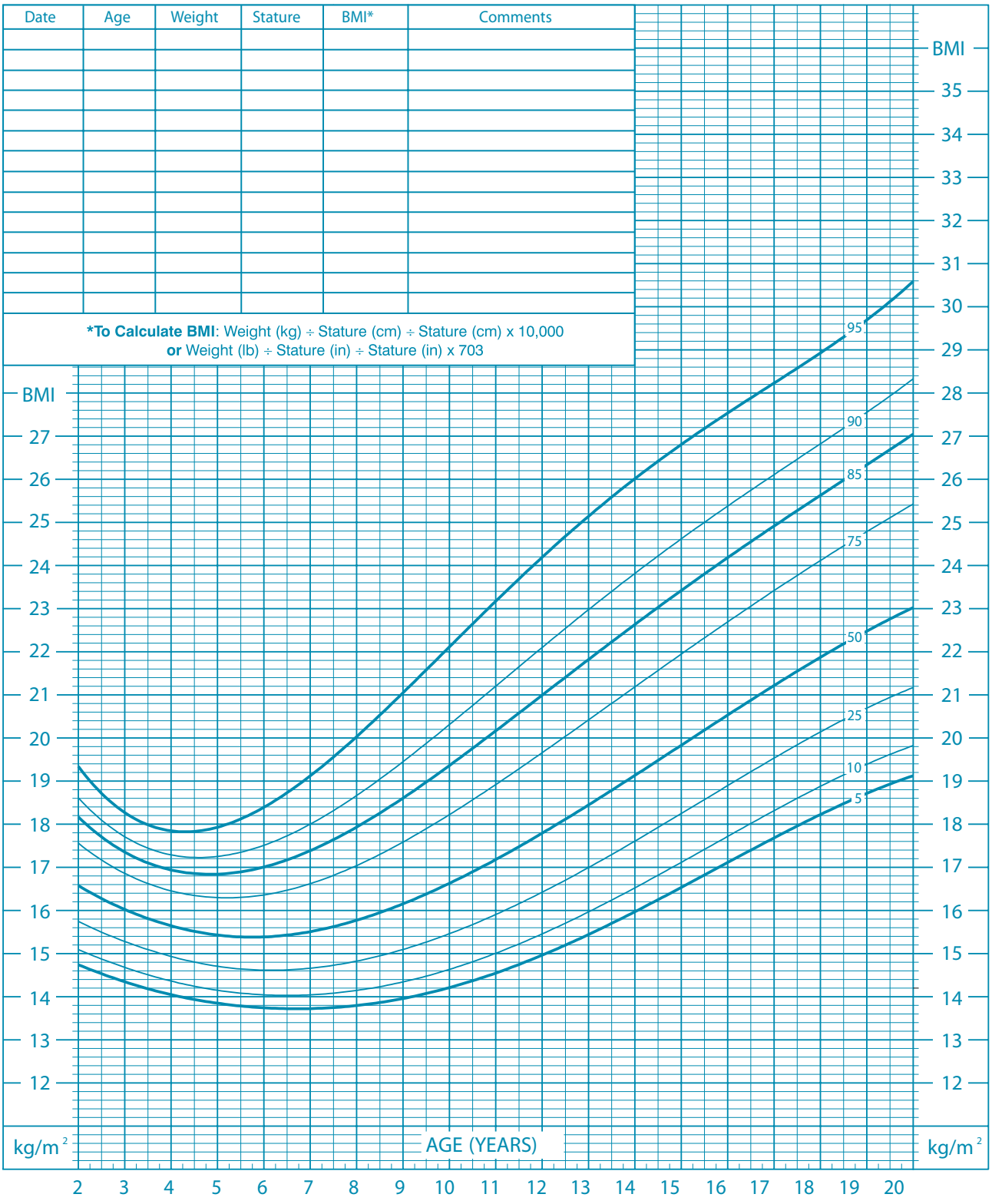
2 to 20 years: Boys
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

***To Calculate BMI**: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Published May 30, 2000 (modified 10/16/00).

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

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Attachment 5: National Center for Chronic Disease Prevention and Health Promotion (USA), 2 to 20 years: Girls—Body mass index-for-age percentiles

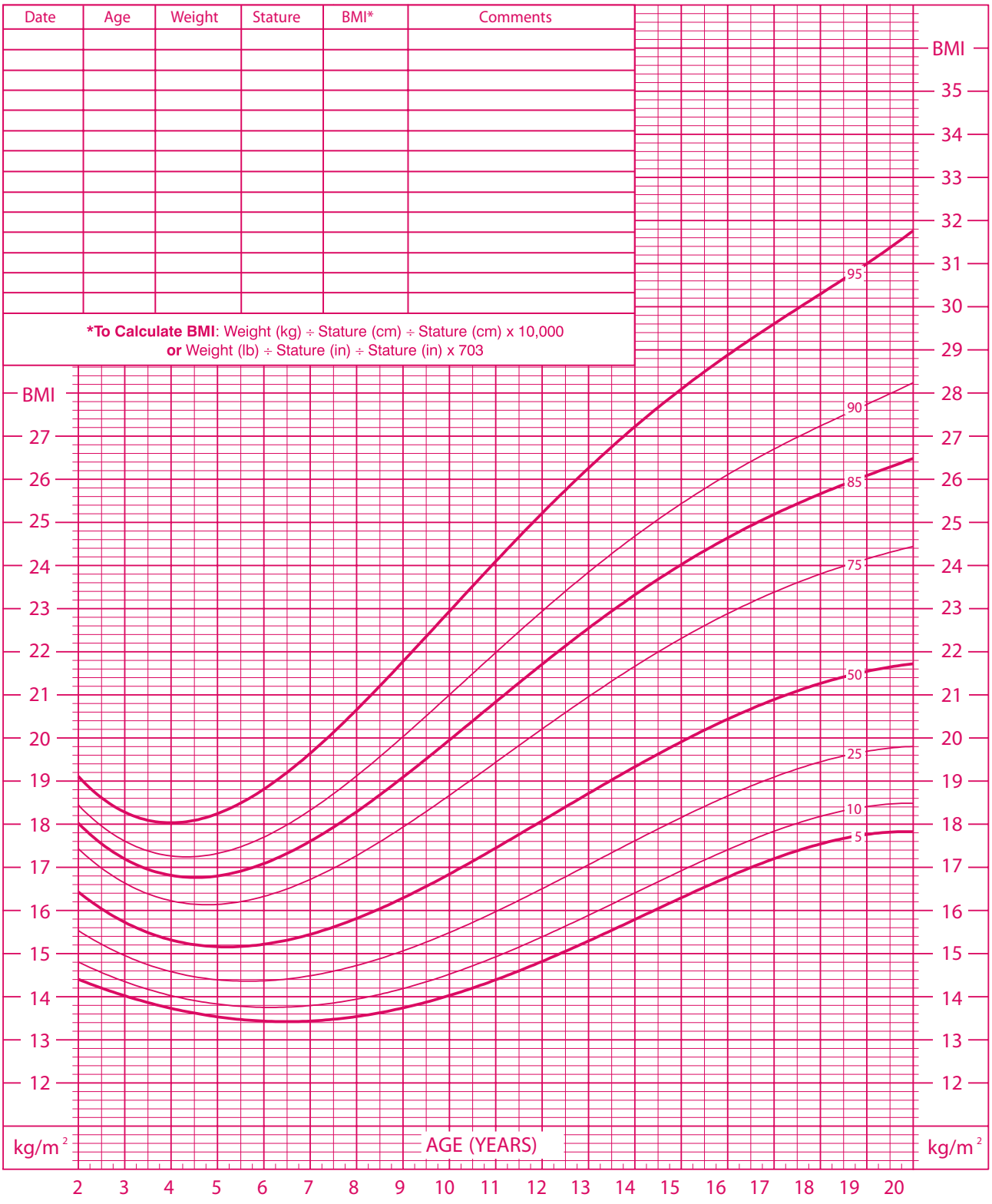
2 to 20 years: Girls
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

***To Calculate BMI**: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

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Attachment 6: Stage 2 template: Screening for child overweight and obesity comorbidities and consequences

Step 1: Screen for common medical and physical health comorbidities

- ❑ Respiratory: asthma, shortness of breath and exercise intolerance
- ❑ Sleep: snoring, restless sleeping, daytime sleepiness or nocturnal enuresis
- ❑ Gastrointestinal: constipation
- ❑ Endocrine: type 2 diabetes symptoms (excessive thirst and excessive urination, irritability, weakness and fatigue, blurred vision, tiredness, tingling, numbness in feet, slow-healing infections)
- ❑ Cardiovascular: blood pressure
- ❑ Skin: irritation and infection
- ❑ Musculoskeletal: foot, hip, knee or walking pain

- ❑ Address or refer as appropriate.

Step 2: Screen for common psychosocial comorbidities and address or refer as appropriate

- ❑ Self-esteem/self-concept
- ❑ Poor body image
- ❑ Disordered eating
- ❑ Depression/anxiety
- ❑ Behaviour problems
- ❑ Teasing and bullying
- ❑ School avoidance
- ❑ Social isolation

- ❑ Address or refer as appropriate.

Step 3: Screen for common family risk factors and address or refer as appropriate

- ❑ Parenting difficulties
- ❑ Parental coping
- ❑ Marital/family difficulties
- ❑ Social support
- ❑ Financial difficulties
- ❑ Housing difficulties

- ❑ Address or refer as appropriate.

Step 4: Continue to monitor these comorbidities throughout intervention

- ❑ Consider treatment sequencing

Attachment 7: Community health service child weight management referral tool

Child details

Parent name: _____

Child name: _____

Date of birth: _____ Age: _____ Sex: _____

How would you describe your child's current weight?

❑ Underweight ❑ Normal ❑ Overweight ❑ Obese

Height (m): _____

Weight (kg): _____

BMI (weight ÷ height ÷ height): _____

Determine BMI -based weight category (use BMI percentile charts):

❑ underweight (below the 5th percentile)

❑ healthy weight (5th to 85th percentiles)

❑ overweight (85th to 95th percentiles)

❑ obese (at or above 95th percentile)

Note: There is a tendency to underestimate weight and overestimate height, resulting in a BMI underestimation; therefore families of children above the 80th BMI percentile may be invited to attend an eligibility assessment.

Other information

_____

_____

_____

_____

Eligibility for service

❑ Parent or carer willing and able to attend sessions

❑ Aged 5 to 12 years

❑ Overweight (between the 85th and 95th BMI percentiles)

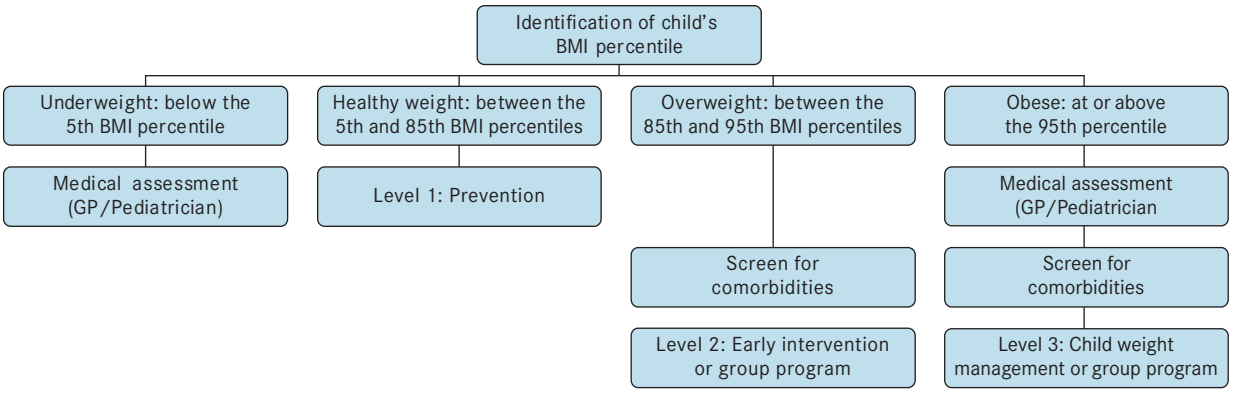
❑ Obese (at or above the 95th BMI percentile)—requires medical assessment and approval

Next step

❑ Eligible families of overweight children scheduled to attend an assessment session

❑ Eligible families of obese children scheduled to attend an assessment session after medical assessment and approval

Figure 6: Identification of child weight status and appropriate interventions



Attachment 8: Brief family eating and activity assessment tool

Psychosocial

Does your child worry about eating too much or eating unhealthy foods?

❑ a. Not at all ❑ b. A little ❑ c. Quite a bit ❑ d. A lot

Does your child worry about their weight or shape?

❑ a. Not at all ❑ b. A little ❑ c. Quite a bit ❑ d. A lot

Has your child ever dieted to try to lose weight?

❑ a. Not at all ❑ b. A little ❑ c. Quite a bit ❑ d. A lot

Does your child experience teasing or bullying because of their weight?

❑ a. Not at all ❑ b. A little ❑ c. Quite a bit ❑ d. A lot

Food choices

What type of bread does your family normally eat?

❑ white bread
❑ wholemeal bread
❑ multigrain bread

What type of milk does your family normally drink?

❑ none
❑ full cream milk
❑ reduced fat milk
❑ skim milk

What type of type of cooking methods do you typically use?

❑ boiling
❑ grilling
❑ baking
❑ frying

In a typical day, on how many times does your child eat/drink:

	0	1	2	3	4	5	6	7
a. Vegetables?	❑	❑	❑	❑	❑	❑	❑	❑
b. Fruit (not juice)?	❑	❑	❑	❑	❑	❑	❑	❑
c. Juice?	❑	❑	❑	❑	❑	❑	❑	❑
d. Breads/cereals?	❑	❑	❑	❑	❑	❑	❑	❑
e. Dairy foods?	❑	❑	❑	❑	❑	❑	❑	❑
f. Meat and meat products?	❑	❑	❑	❑	❑	❑	❑	❑
g. Fish?	❑	❑	❑	❑	❑	❑	❑	❑
h. Water?	❑	❑	❑	❑	❑	❑	❑	❑
i. Soft drink?	❑	❑	❑	❑	❑	❑	❑	❑
j. Biscuits or cakes?	❑	❑	❑	❑	❑	❑	❑	❑
k. Lollies or chips?	❑	❑	❑	❑	❑	❑	❑	❑
l. Fried foods?	❑	❑	❑	❑	❑	❑	❑	❑

See *The Australian guide to healthy eating* for more information about food groups.

Listed below are the recommended serving sizes for each of the food groups and 'extras'. Indicate whether your child typically eats more, less or approximately one serving of these foods when they eat them.

	Much less	A little less	Approximately this amount	A little more	Much more
Vegetables 75 g or ½ cup cooked vegetables 75 g or ½ cup cooked dried beans, peas or lentils 1 cup salad vegetables 1 potato	❑	❑	❑	❑	❑
Fruit 1 medium piece, e.g., apple, banana, orange, pear 2 small pieces, e.g., apricots, kiwi fruit, plums 1 cup diced pieces or canned fruit ½ cup juice dried fruit, e.g., 4 dried apricot halves, 1½ tablespoons sultanas	❑	❑	❑	❑	❑
Breads/cereals 2 slices of bread 1 medium roll 1 cup cooked rice, pasta, noodles 1 cup porridge, 1⅓ cup breakfast cereal flakes ½ cup muesli	❑	❑	❑	❑	❑
Dairy foods 250 ml (one cup) fresh, long-life or reconstituted dried milk ½ cup evaporated milk 40 g (2 slices) cheese 200 g (1 small carton) yoghurt 250 ml (one cup) custard	❑	❑	❑	❑	❑

Meat and meat products 65 –100 g cooked meat, chicken, e.g., ½ cup lean mince, 2 small chops or 2 slices roast meat ½ cup cooked (dried) beans, lentils, chick peas, split peas, or canned beans 80 –120 g cooked fish fillet 2 small eggs ⅓ cup peanuts or almonds ¼ cup sunflower seeds or sesame seeds	❑	❑	❑	❑	❑
Extras 1 (40 g) doughnut 4 (35 g) plain sweet biscuits 1 slice (40 g) plain cake ½ small bar (25 g) chocolate 2 tablespoons (40 g) cream, mayonnaise 1 tablespoon (20 g) butter, margarine, oil 1 can (375 ml) soft drink ⅓ (60 g) meat pie or pastie 12 (60 g) hot chips 1 ½ scoops (50 g scoop) ice cream	❑	❑	❑	❑	❑

Eating habits

In a typical week, on how many days does your child:

	0	1	2	3	4	5	6	7
a. Eat out?	❑	❑	❑	❑	❑	❑	❑	❑
b. Eat take-away?	❑	❑	❑	❑	❑	❑	❑	❑
c. Eat breakfast?	❑	❑	❑	❑	❑	❑	❑	❑
d. Take lunch to school?	❑	❑	❑	❑	❑	❑		
e. Eat regular healthy snacks?	❑	❑	❑	❑	❑	❑	❑	❑
f. Eat at the kitchen table/bench?	❑	❑	❑	❑	❑	❑	❑	❑
g. Eat meals with the family?	❑	❑	❑	❑	❑	❑	❑	❑
h. Eat while watching TV?	❑	❑	❑	❑	❑	❑	❑	❑
i. Eat when they are not hungry?	❑	❑	❑	❑	❑	❑	❑	❑
j. Prepare their own meals?	❑	❑	❑	❑	❑	❑	❑	❑
k. Choose their own snacks?	❑	❑	❑	❑	❑	❑	❑	❑
l. Buy food for themselves?	❑	❑	❑	❑	❑	❑	❑	❑

Sedentary time

In a typical day, how many hours would your child spend:

	0	0.5	1	1.5	2	2.5	3	>3
a. Watching television?	❑	❑	❑	❑	❑	❑	❑	❑
b. Watching movies/DVDs?	❑	❑	❑	❑	❑	❑	❑	❑
c. Playing electronic games?	❑	❑	❑	❑	❑	❑	❑	❑
d. Using the computer (not homework)?	❑	❑	❑	❑	❑	❑	❑	❑
e. In sedentary activities between school and dinner?	❑	❑	❑	❑	❑	❑	❑	❑

Physical activity

In a typical day, how many hours would your child spend:

	0	0.5	1	1.5	2	2.5	3	>3
a. Being active?	❑	❑	❑	❑	❑	❑	❑	❑
b. Doing activities that cause them to 'huff and puff'?	❑	❑	❑	❑	❑	❑	❑	❑
c. Exercising or playing sport?	❑	❑	❑	❑	❑	❑	❑	❑
d. In physical activities between school and dinner?	❑	❑	❑	❑	❑	❑	❑	❑

In a typical week, on how many days does your child:

	0	1	2	3	4	5	6	7
a. Walk or ride to or from school?	❑	❑	❑	❑	❑	❑		
b. Do something active after school?	❑	❑	❑	❑	❑	❑		
c. Play sport or exercise?	❑	❑	❑	❑	❑	❑	❑	❑
d. Engage in other active pastimes?	❑	❑	❑	❑	❑	❑	❑	❑
e. Play outside?	❑	❑	❑	❑	❑	❑	❑	❑
f. Do active chores (for example, vacuuming, mowing the lawn)?	❑	❑	❑	❑	❑	❑	❑	❑
g. Do something active with the family (for example, bike ride, walk)?	❑	❑	❑	❑	❑	❑	❑	❑

Attachment 9: How to order or download supporting resources

National Health and Medical Research Council (NHMRC), *Clinical practice guidelines for management of overweight and obesity in children and adolescents*
www.health.gov.au/internet/main/publishing.nsf/Content/obesityguidelines-guidelines-children.htm

National Health and Medical Research Council (NHMRC), *Overweight and obesity in children and adolescents: A guide for general practitioners*
www.health.gov.au/internet/main/publishing.nsf/Content/CF511C5633F62237CA256F190003BC2F/$File/children_gp.pdf

Royal Children's Hospital, *Body mass index (BMI) for children* information sheet
www.rch.org.au/emplibrary/ccch/CPR_BMI_May06.pdf

Royal Children's Hospital, *Introducing body mass index (BMI) in children* pamphlet and CD-ROM (attached)

National Center for Chronic Disease Prevention and Health Promotion (USA), *2 to 20 years: Boys–Body mass index-for-age percentiles*
www.cdc.gov/nchs/data/nhanes/growthcharts/set2clinical/cj41c073.pdf

National Center for Chronic Disease Prevention and Health Promotion (USA), *2 to 20 years: Girls–Body mass index-for-age percentiles*
www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41c024.pdf

CDC (USA), Growth Chart Training
www.cdc.gov/nccdphp/dnpa/growthcharts/index.htm

The Australian guide to healthy eating: Background information for nutrition educators
www.health.gov.au/internet/main/publishing.nsf/Content/FD699468D52A5A2ECA256F19000406D6/$File/fdeduc.pdf

The Australian guide to healthy eating: Background information for consumers
www.health.gov.au/internet/main/publishing.nsf/Content/E384CFA588B74377CA256F190004059B/$File/fd-cons.pdf

The Australian guide to healthy eating: Summary Information
www.health.gov.au/internet/main/publishing.nsf/Content/6EC4658F838124CBCA256F1900040509/$File/fdbrox.pdf

The Australian guide to healthy eating: Poster
www.health.gov.au/internet/main/publishing.nsf/Content/CE4DAF6846D4CAFCCA256F19000407C3/$File/fdpost.pdf

Commonwealth Department of Health and Ageing, *Australia's physical activity recommendations for 5–12 year olds*
www.health.gov.au/internet/main/publishing.nsf/Content/9D7D393564FA0C42CA256F970014A5D4/$File/kids_phys.pdf

Hard copies of *The Australian guide to healthy eating* and *Australia's physical activity recommendations for 5–12 year olds* materials can be obtained from:
National Mailing and Marketing, PO Box 7077, Canberra Mailing Centre ACT 2610, telephone 1800 020 103 (ext. 8654), or email nmm@nationalmailing.com.au

Kids—'Go for your life'
www.goforyourlife.vic.gov.au/kids

Go for your life, *Topics A to Z*
www.goforyourlife.vic.gov.au/hav/site.nsf/topicsatoz?open&a=1&v=a

Go for your life, *Healthy eating and activity in primary school years (5–12 years)*
www.goforyourlife.vic.gov.au/hav/admin.nsf/images/Healthy_eating_and_activity_primary_school.pdf/$File/Healthy_eating_and_activity_primary_school.pdf

Go for your life, *Why no sweet drinks for children*
www.goforyourlife.vic.gov.au/hav/admin.nsf/images/Why_no_sweet_drinks_for_children.pdf/$File/Why_no_sweet_drinks_for_children.pdf

Go for your life, *'Try it–you'll like it!' Vegetables and fruit for children*
www.goforyourlife.vic.gov.au/hav/admin.nsf/images/try_it_veg_and_fruit.pdf/$File/try_it_veg_and_fruit.pdf

Go for your life, *Healthy lunch boxes for children*
www.goforyourlife.vic.gov.au/hav/admin.nsf/images/Healthy_lunch_boxes_for_children.pdf/$File/healthy_lunch_boxes_for_children.pdf

Go for your life, *Getting your family going*
www.goforyourlife.vic.gov.au/hav/admin.nsf/images/Families_Getting_your_family_going.pdf/$File/Families_Getting_your_family_going.pdf

Better Health Channel, *Fact sheets A to Z*
www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/AToZ?Openview&RestrictToCategory=A&count=500

Better Health Channel, *Body image–tips for parents*
www.betterhealth.vic.gov.au/bhcv2/bhcpdf.nsf/ByPDF/Body_image_tips_for_parents/$File/Body_image_tips_for_parents.pdf

Better Health Channel, *Body image and diets*
www.betterhealth.vic.gov.au/bhcv2/bhcpdf.nsf/ByPDF/Body_image_and_diets/$File/Body_image_and_diets.pdf

Better Health Channel, *Children–getting them active*
www.betterhealth.vic.gov.au/bhcv2/bhcpdf.nsf/ByPDF/Children_getting_them_active/$File/Children_getting_them_active.pdf

Department of
Human Services