



**GUIDELINE**

**Overweight and obesity**

<b>Scope (Staff):</b>	Community health
<b>Scope (Area):</b>	CAHS-CH, WACHS

**Child Safe Organisation Statement of Commitment**

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [disclaimer](#)

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## Aim

To provide information on the causes and consequences of overweight and obesity in childhood and the importance of early identification and intervention with families in the community health context.

## Risk

Depth of knowledge and understanding related to childhood overweight and obesity may be insufficient for nurses to effectively engage and communicate with families and schools to support healthy weight related behaviours and environments.

## Background

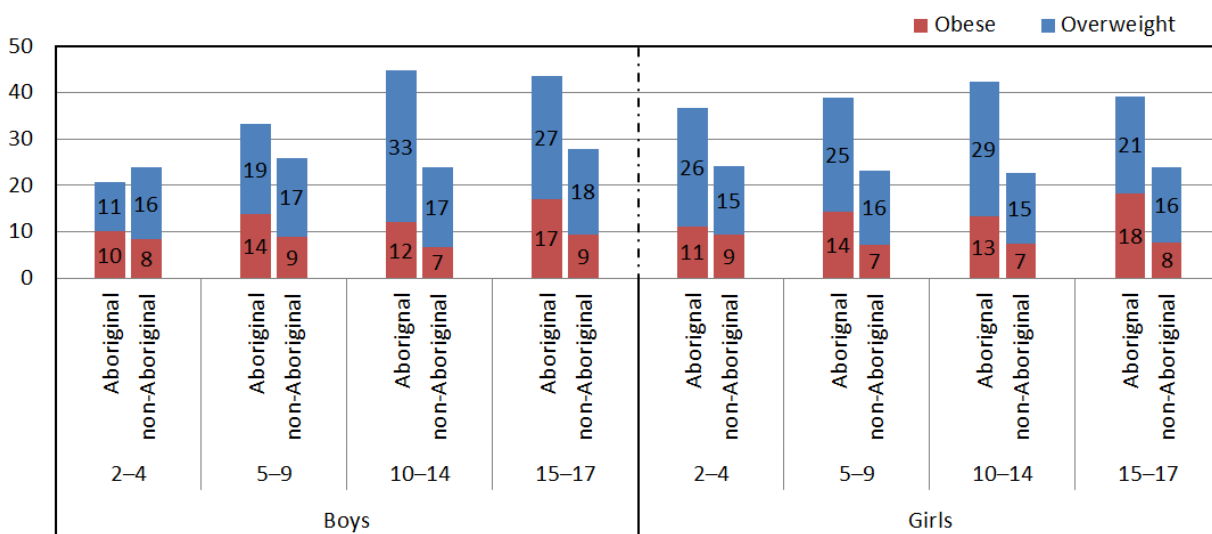
### Current statistics

In 2017-18, the Australian Institute of Health and Welfare (AIHW) estimated 1 in 4 (25%) Australian children and adolescents aged 2–17 were overweight (17%) or obese (8.2%).<sup>1</sup> Data derived through the West Australian Health and Wellbeing Survey suggests similar rates in WA<sup>2</sup>. Analysis of 2018 School Entry Health Assessment results suggested 22% of Kindergarten children in the Perth metropolitan area were above a healthy weight range, including 9% in the obese range.<sup>3</sup> These rates have remained relatively stable over the last decade.<sup>1</sup>

Aboriginal\* children aged 2-17 are significantly more likely to be overweight or obese (38%) than their non-indigenous counterparts (24%), a disparity which increases further among older Aboriginal adolescents. Additionally, overweight and obesity disproportionately affects children from socioeconomic disadvantage and those who live outside metropolitan areas.<sup>1</sup>

The chart below shows the rates of overweight or obese Australian Aboriginal and non-Aboriginal children by age and gender. Collectively each bar represents the combined overweight and obesity rate for each category.

**Proportion of overweight and obese children and adolescents aged 2-17 years, by Aboriginal (2018-19) and non-Aboriginal (2017-18), age group and gender in Australia**



Data sources: ABS National Aboriginal and Torres Strait Islander Health, Australia, 2018-19; ABS National Health Survey, 2017-18

\*OD 0435/13 - Within Western Australia, the term Aboriginal is used in preference to Aboriginal and Torres Strait Islander, in recognition that Aboriginal people are the original inhabitants of Western Australia. No disrespect is intended to our Torres Strait Islander colleagues and community.

## Causes and consequences

Although overweight and obesity is mainly caused by a long-term energy imbalance (where too much energy is taken in through food and drink, and not enough energy is expended through physical activity), many other factors contribute to the development of excess weight in children and adolescents. Some of these include rapid weight gain during infancy, poor sleep, having parents who are overweight or obese, and exposure to obesogenic environments including marketing of unhealthy food targeted at children and adolescents.<sup>1</sup>

Some risk factors linked to the development of obesity in children become non-modifiable following birth, such as maternal overweight in pregnancy, gestational diabetes mellitus, smoking during pregnancy and the child's birth weight.<sup>1</sup>

There is no single risk factor responsible for the cause of obesity instead a complex interplay of genetics, epigenetics, metabolic, behavioural and environmental factors contribute to the chronic condition.<sup>4</sup> Community health nurses are able to influence behaviour change and to a certain extent the environments (particularly school and home environments) to support healthy choices that can assist in preventing or addressing existing weight concerns for children and families.

While nutrition, physical and sedentary activity levels have long been known as factors that significantly impact on childhood obesity, evidence around sleep has more recently strengthened as an important contributor, with short sleep, poor quality sleep or late bedtime identified as risk factors for future obesity, relevant from infancy to adulthood.<sup>5</sup> The mechanism behind weight gain and sleep as a risk factor is thought to be linked to hormonal responses leading to appetite dysregulation affecting hunger and satiety cues. Sleeping less (particularly with a late bed-time), is also associated with alterations in mood, attention, impulse control, motivation and judgements – all potentially influencing eating behaviours, energy intake, decreased interest in physical activity and ultimately an increase in BMI.<sup>5, 6</sup>

Overweight and obese children and adolescents are likely to remain overweight or obese adults, thereby, increasing their risk of developing associated chronic diseases.<sup>7</sup> Children and young people who are overweight or obese are more likely to experience poor physical health outcomes, such as type 2 diabetes, sleep apnoea and gastro-intestinal problems, polyuria, polydipsia, type 2 diabetes; headaches; sleep problems/daytime sleepiness, abdominal pain; and hip or knee pain.<sup>8</sup> Recent research indicates that signs of cardio metabolic syndrome may be present in obese children by 11 years of age.<sup>9</sup>

As well as physical health concerns, overweight and obese children and adolescents may experience anxiety, sadness, body dissatisfaction, social isolation and depression; and avoid school. Typically, adolescents view the short-term psychosocial consequences of overweight and obesity (i.e. teasing and bullying, social exclusion, inability to participate in activities) to be of greater importance than the long-term physical consequences (i.e. adult obesity and related chronic conditions).<sup>10</sup>

An individual's physical and psychological make-up is influenced by societal, environmental, socio-economic, adverse life events and health and biomedical factors. The prevention and early intervention of overweight and obesity is vital due to the long-term impacts of obesity and the ongoing lack of evidence-based treatment options to manage obesity once established. It is important to understand these many factors when addressing the issue of overweight and obesity in children and families.

### Age of Onset

Infants born large for gestational age have a greater risk of obesity during infancy, and throughout the life course, while those at a low birthweight have an increased likelihood of developing central adiposity ('fatness') and metabolic syndrome in adulthood.<sup>11</sup>

There is strong evidence to support that early childhood is the critical age for the development of sustained obesity. An upward deviation in BMI percentile among young children (even within normal or "healthy" weight ranges) is linked to adolescent and adult obesity.<sup>7, 9</sup> Indeed, rapid weight gain in the first weeks or months of life and an early adiposity rebound which occurs at a rapid rate and great extent is associated with an increased risk of later overweight or obesity.<sup>11-13</sup> Adolescents who are overweight or obese are most likely to have had their most rapid BMI acceleration between the ages of 2-6 years.<sup>7, 9</sup> From a robust longitudinal study of over 50,000 children in Germany, the probability of young children who were obese returning to healthy weight in adolescence was found to be less than 20%.<sup>7</sup> A recent Australian longitudinal study revealed cumulative exposure to high BMI from age 2-3 years of age carried the greatest cardio metabolic risk, with cardio metabolic risk factors present by age 11-12 years.<sup>9</sup>

The importance of serial growth measurement in the early years is highlighted by these research findings. Surveillance that can identify accelerated BMI prior to age 6 years, particularly for children with overweight mothers or who were large for gestational age birth weight, is central in identifying children at risk of obesity later in life and highlights the critical time opportunity for effective prevention activities.<sup>7</sup> In the absence of evidence based programs that are effective in sustained reversal of childhood obesity, interventions that slow the acceleration of BMI in early life and delay (or prevent) the onset of obesity for as long as possible are thought to minimize the accumulation of risk for cardiovascular disease later in life.<sup>14</sup>

**Clinical practice implication:** This identifies the important role community health staff can play in providing support, advice and brief intervention to prevent or slow accelerated growth across all ages, with particular emphasis on opportunities that present in the early years.

The propensity for overweight and obesity starts early, with feeding choices made during infancy being influential in a person's health over their life course. There is convincing evidence for infants who breastfeed having reduced risk of becoming obese in childhood, adolescence and early adulthood, compared to infants who are infant formula fed.<sup>15</sup> Data from seven (7) longitudinal studies of infant growth, determined that infants who breastfeed for at least twelve (12) months grew more rapidly in the first two (2) months and less rapidly from three (3) to twelve (12) months of age.<sup>16</sup> In a Western Australian study, infants who breastfed for more than twelve (12) months were leaner at one (1) year of age.<sup>17</sup>

Further research links the protein levels in infant formula and cow's milk with the development of obesity and chronic disease in adulthood. These findings have led to recommendations for infant formula composition to promote growth rates similar to that of breastfeeding infants.<sup>15</sup>

**Clinical practice implication:** Staff should refer to the CAHS and WACHS Community Health Nutrition guidelines in the Clinical Nursing Policy manual for more detail.

Research suggests that obese children in pre-pubertal years may exhibit accelerated height velocity and bone maturation, however this growth then tends to slow in puberty to less than that of lean children.<sup>18</sup> Triggering of the endocrine system as a result of higher levels of adiposity are thought to be implicated in the early puberty trigger and accelerated growth, particularly among obese girls.<sup>18, 19</sup>

Puberty is a time of great change biologically, physically and psychologically, and is marked by changes in body composition, changes in physical activity, and eating behaviours.<sup>20</sup> Young people are vulnerable to societal pressures and can often feel insecure and self-conscious about their bodies. Poor body image has been listed by young people as a top concern over several years, above depression, family conflict and drugs<sup>21</sup>, and can have long term physical and psychological influences on health.<sup>22</sup>

Whilst obesity, if present in adolescence is likely to be persistent in adulthood, the proportion of adolescents who do exit obesity are likely to experience a number of psychosocial improvements such as decrease in body dissatisfaction, depressive symptoms, weight teasing and increase in self-esteem.<sup>23</sup>

### *Parent and family involvement*

Research indicates that parents are poorly skilled at identifying weight concerns in their own children. Many parents do not perceive that their child is an unhealthy weight for their age, height and gender, and many others are not willing to acknowledge or address weight issues. Weight is often viewed as a sensitive topic for parents and their children, with some experiencing the identification of weight issues as a criticism of their parenting rather than a chance for their child or young person to achieve a more healthy weight and reduced risk of negative weight related consequence.<sup>24, 25</sup>

***Clinical practice implication:*** Rather than discussing weight with parents, it is suggested community health nurses focus on healthy lifestyle recommendations suitable for all and where appropriate talk with parents to address any functional (physical) ability that may be impaired (for example, a child's inability to sit comfortably on the mat or chair, or an inability to participate in physical activities) as a conversation entry point with parents.

Parent involvement, however, is critical to the success of any child or adolescent's weight management intervention.<sup>10</sup> The way the nurse approaches the issue of childhood overweight and obesity significantly influences parents' willingness to seek help and take action. To engage well with parents, nurses require a good understanding of parental views and circumstances, and a sensitive approach when broaching the issue.

***Clinical practice implication:*** *Be Smarter* is a strengths based, healthy lifestyle brief intervention tool suitable for use with families where a child has a BMI above the expected range for their age and gender. Originating in New Zealand, *Be Smarter* has been piloted in the WA Community Health context with positive results reported from both staff and parents<sup>26</sup>, and now approved for wider delivery in the Western Australian primary school health setting (refer to *Body Mass Index (BMI) assessment - Primary School procedure*).

Additional information regarding the involvement of families when supporting adolescents is provided in Appendix C.

## Costs

In 2015, the non-hospital Medicare costs for overweight or obese Australian children were 28 per cent more per child than for children of same age within a healthy BMI range.<sup>27, 28</sup> Spanning children and adults, excess body mass was attributed to 9.3 percent of all hospitalisations in 2016.<sup>27</sup>

If population levels of overweight and obesity continue to climb, it is projected that the cost to the WA health system will increase by 80 per cent in the decade between 2016 (\$338.7 million) and 2026 (\$610.1 million).<sup>27</sup>

## Summary

There are a range of modifiable and non-modifiable risk factors that contribute to the development of obesity and overweight. Protective and risk factors are included in Appendix D: Protective and risk factors for childhood obesity.

The Australian Institute of Health and Welfare (AIHW) identifies primary, secondary and tertiary prevention as areas health professionals can assist in the prevention and reduction of childhood overweight and obesity. The purpose of primary prevention is to prevent the development of overweight and obesity. Secondary prevention focuses on early detection and preventing progression, while tertiary prevention aims to manage and reduce the consequences of established overweight and obesity. For children and adolescents who are already affected by overweight and obesity, lifestyle interventions (including reduced energy intake and sedentary behaviour, increased physical activity, and measures to support behavioural change) are recommended, and should involve parents, carers and families as well as include support from health-care professionals.<sup>1</sup>

**Clinical practice implication:** Through conducting growth assessments including weight, length/height, head circumference and body mass index at universal and additional contacts, nurses are well placed to identify changes in growth trajectory. This together with support for breastfeeding and anticipatory guidance at key development milestones to support healthy eating, physical activity, sedentary activity and sleep habits can assist in the prevention and early intervention of overweight and obesity.

Appendices A, B and C summarise key lifestyle related recommendations as they relate to infants and toddlers; primary school age children and adolescents respectively to address overweight and obesity within the context of modifiable behaviours and Community Health services.

## Key points

- A focus on healthy behaviours for the whole family (good eating habits, daily physical activity and regular sleep routines) should be promoted at all ages. Successful long-term weight management for children is most likely to be achieved in families who adopt healthier lifestyle habits as a family unit.
- Having fruit and vegetables easily available in the home environment, and a high number of meals being eaten together with the family per week (and vegetables being served with the meal) have been demonstrated to help move children and adolescents from obesity to a lower weight status.<sup>23</sup>

- Changing norms in childhood weight have led to many parents/caregivers and young people now perceiving an overweight body to be 'normal'.<sup>25</sup>
- Regular serial measurements to identify upwards trends in growth is best practice for identifying the development or risk of obesity in the younger years. Accelerated growth patterns, even when within the healthy BMI range, may suggest an emerging health concern.<sup>7</sup>
- Growth patterns that indicate increased obesity risk that are identified in early childhood (birth to 6 years) present the most promising opportunity for early intervention before obesity is fully established.<sup>7, 9, 29</sup>
- Growth assessments are undertaken at all universal community health contacts and can be offered at Universal Plus contacts where relevant. BMI calculation is currently offered as part of a holistic assessment at age 2 years and school entry (4 years).
- Nurses will follow care pathways outlined in relevant Community Health clinical nursing procedure documents when a growth deviation or concern is identified following a growth assessment (length, height, weight, head circumference or BMI).
- Although parents/caregivers may be unwilling to address a problem with weight when a concern is first identified, raising the issue is an important first step which may lead to parents/caregivers being more receptive to discussions and change in the future.
- It is recommended that growth assessments (BMI) not be undertaken with adolescents in the high school-based Community Health setting.
  - Clinical judgement should be applied when completing a Children In Care (CIC) assessment and determining the appropriateness of BMI assessment for an adolescent individual.
- Weight loss diets for children and young people are discouraged unless supported by a paediatric specialist or dietitian advice. Where possible, children should be encouraged to maintain their weight, growing into it as they get taller until a healthier height-weight ratio for their age is achieved.
- In extreme situations where concerns for medical neglect are formed in the context of child obesity, nurses are encouraged to discuss the issue with their manager and/or Clinical Nurse Specialist. Consultation with the Child Protection Unit (CPU) and Healthy Weight Management Service, both located at Perth Children's Hospital (PCH), is available to provide additional guidance or support for decisions and processes. Staff should also refer to the [Guidelines for Protecting Children 2020](#) for further information.
  - [Child Protection Unit \(CPU\)](#): phone 6456 4300
  - [Healthy Weight Service](#): phone (08) 6456 1111 and follow the prompts for the Healthy Weight Service (option 4) or email [PCHHealthyWeightService@health.wa.gov.au](mailto:PCHHealthyWeightService@health.wa.gov.au)

## Referral Options

Staff should refer to relevant growth assessment procedure documents to inform clinical care pathways and referral/supplementary support options.

## Documentation

Nurses maintain accurate, comprehensive and contemporaneous documentation of assessments, planning, decision making and evaluations according to CAHS-CH and WACHS processes.

Related internal policies, procedures and guidelines
The following documents can be accessed in the Community Health Manual: <a href="#">HealthPoint link</a> or <a href="#">Internet link</a>
Adolescent Psychosocial Brief Intervention
Body Mass Index assessment – child health
Body Mass Index assessment – primary school
Growth birth – 18 years
Growth – static or downward trajectory
Head circumference assessment
HEADSS adolescent psychosocial assessment
Height assessment 2 years and over
Length assessment 0-2 years
Nutrition for children 1 to 11 years
Nutrition for children birth to 12 months
Sleep
Weight assessment 0-2 years
Weight assessment 2 years and over



Related CAHS-CH forms
The following forms can be accessed from the <a href="#">CAHS-Community Health Forms</a> page on HealthPoint
Body Mass Index Boys (CHS430B)
Body Mass Index Girls (CHS430A)
World Health Organization Growth Charts (CHS800A series)- (0-2 years and 2-5 years)
<a href="#">World Health Organization Charts 0 - 6 months</a> (Length, Weight, Head Circumference)

Related CAHS-CH resources (internal)
The following resources can be accessed from the <a href="#">CAHS-Community Health Resources</a> page on HealthPoint
Community health staff
Be Smarter - Staff facilitator guide
Be Smarter - Family goal setting sheet
Brief Intervention in adolescent psychosocial health - Handbook
Health Promoting Schools Toolkit
How children develop
Practice guide for Community Health Nurses
Talking with parents about children's weight - online training (also accessible via CAHS-CH and WACHS online Learning and Development systems)
Consumers
Body Mass Index - infographic
Guidelines for healthy growth and development: Australian 24 Hour Movement Guidelines birth to 5 years
Keeping children healthy 5-12 years
Tips to support healthy choices (2 – 5 years)
Toddler tucker

Related external resources
Community Health Staff
<p><a href="#">Better Health Program</a> a multi-component healthy lifestyle program for overweight and obese children aged 7-13 years and their families. Free of charge to families. Delivery options:</p> <ul style="list-style-type: none"> <li>Face to face (Perth metropolitan area only)</li> <li>Online with weekly phone support (statewide)</li> </ul> <p>Phone 1300 822 953 or email <a href="mailto:info@betterhealthcompany.org">info@betterhealthcompany.org</a> or visit <a href="http://www.betterhealthprogram.org/">http://www.betterhealthprogram.org/</a></p>
<a href="#">Butterfly Foundation</a> - information and support for eating disorders and body image issues
<a href="#">Foodbank's School Breakfast program</a> currently supports 450 schools in WA, and 18,300 students by providing free breakfast
<a href="#">Infant Feeding Guidelines</a>
<a href="#">Refresh.ED</a> provides nutrition curriculum resources suitable for Kindergarten to Year 10.
<a href="#">Royal Children's Hospital - Child growth learning resource</a>
<b>Consumers</b>
<a href="#">Australia's Physical Activity and Sedentary Behaviour Guidelines</a> Pamphlets available- 0-5years; 5-12 years; and Families. To order phone 1800 020 103.
<a href="#">Eat for Health</a> website offers a variety of resources linked to the Australian Dietary Guidelines and includes healthy eating guidelines for children aged 2 to 18 years and recommended number of serve calculators
<a href="#">Girls make your move</a> is an Australian Government website with events, activities and inspiration to encourage girls of all shapes and sizes to increase their physical activity.
<a href="#">Healthy Weight Guide</a> – Department of Health information and tools
<a href="#">Live Lighter</a> - Department of Health WA healthy weight campaign. Useful tips, tools and recipes suitable for families.
<a href="#">Raising children network</a> factsheets on Obesity and overweight

## Appendix A

### Infants and young children: Recommendations for prevention and early intervention of childhood overweight and obesity in the Community Health context.

#### Infant feeding recommendations

Exclusive breastfeeding initiation and continuation for a minimum of 6 months reduces the risk of overweight and obesity in childhood, adolescence and adulthood.<sup>11</sup> Breastfed infants are able to self-regulate intake compared with formula-fed infants who may be guided by caregivers.<sup>30</sup>

*The Infant Feeding Guidelines* developed by the National Health and Medical Research Council, state that infant formula with higher protein levels are associated with higher weight in the first two (2) years of life, but has no effect on length.<sup>15</sup>

- Support should be provided for the initiation and maintenance of exclusive breastfeeding for the first 6 months of life.
- Parents who provide formula to their infant should receive education regarding the importance of carefully preparing formula according to the manufacturer's instructions.

#### Solids timing and introduction

Early introduction of solid food to an infant's diet has been related to obesity. Research has found that infants fed formula exclusively or in combination with breast milk were more likely to be introduced to solid food prior to 4 months than infants exclusively breastfed.<sup>31, 32</sup>

Parent feeding styles have also been demonstrated to be influential on the development of overweight and obesity in young children. Excessive monitoring of children's intake, restricting foods, or food groups from children's diet and emotional feeding are all related to childhood weight gain and the development of obesogenic eating behaviours in young children. These practices, undertaken by parents/caregivers in an effort to improve children's health or weight, may actually lead to children seeking out restricted foods and overeating.<sup>33,34,35</sup>

- Guide parents/carers to offer a range of healthy foods to their child. From this range, parents should allow their child to choose what, how much and how often they wish to eat.
  - Allowing children to choose how much they would like to eat, allows them to listen to their own hunger and satiety cues which is protective against the development of overweight and obesity.<sup>36</sup>
- For further detail staff should refer to the guideline *Nutrition for children – birth to 12 months* and *Nutrition for children 1-11 years* in the Community Health Clinical Nursing Policy manual.

### Nutrition recommendations (from age 2 years)

- For age-appropriate serve size and number of serves recommended for the five food groups, refer to the Australian Government's *Healthy Eating for Children brochure* or *CAH-000994 Tips to support healthy choices* (see Useful Resources above).
- For further detail staff should refer to the guideline *Nutrition for children 1-11 years* in the Community Health Clinical Nursing Policy manual.

### Movement recommendations

For healthy growth and development, the Australian 24-hour Movement Guidelines for the Early Years recommend:

#### Physical activity

- **Infants (Birth to one year)** - Physical activity particularly through supervised interactive floor-based play in safe environments should be encouraged from birth. For those not yet mobile, 30 minutes of tummy time including reaching and grasping, pushing and pulling, and crawling spread throughout the day during awake periods is encouraged.
- **Toddlers (1 to 2 years)** should spend at least 180 minutes a day doing a variety of physical activities including energetic play such as running, jumping and twirling spread throughout the day- noting more is better.
- **Pre-schoolers (3 to 5 years)** should spend at least 180 minutes a day in a variety of physical activities, of which 60 minutes is energetic play such as running, jumping and kicking and throwing, spread throughout the day - noting more is better.<sup>37</sup>

#### Sedentary activity

- **Infants (Birth to one year)** should not be restrained for more than 1 hour at a time (e.g. in a stroller, car seat or highchair). Infants should also not spend any time watching television or using other electronic media (DVDs, computer and other electronic games) and instead, when sedentary, the caregiver is encouraged to engage with them through activities such as reading, singing, puzzles and storytelling.
- **Toddlers (aged 1-2 years)** should not be restrained for more than 1 hour at a time (e.g. in a stroller, car seat or highchair) or sit for extended periods. For those toddlers younger than 2 years, screen time is not recommended during sedentary periods. For those aged 2 years, screen time should be no more than 1 hour in total throughout the 24-hour period- less is better. When toddlers are sedentary, the caregiver is encouraged to engage with them through activities such as reading, singing, puzzles and storytelling.
- **Pre-schoolers (aged 3-5 years)** should not be restrained, for more than 1 hour at a time (e.g. in a stroller or car seat) or sitting for extended periods. Sedentary screen time should be no more than 1 hour in total throughout the 24-hour period - less is better. When pre-schoolers are sedentary, caregivers are

encouraged to engage with them through activities such as reading, singing, puzzles and storytelling.<sup>37</sup>

### **Sleep recommendations**

The 24-hour movement guidelines for the early years recommend:

- Newborns 0-3 months need 14-17 hours of good quality sleep (including naps)
- Babies 4-11 months need 12-16 hours of good quality sleep (including naps)
- Toddlers 1-2 years need 11-14 hours of good quality sleep (including naps)
- Pre-schoolers 3-5 years need 10-13 hours of good quality sleep (including naps).<sup>37</sup>

For further guidance on sleep for children in the early years, staff should refer to the *Sleep Guideline* in the Community Health Clinical Nursing Policy manual.

## Appendix B

### Primary school aged children: Recommendations for prevention and early intervention of childhood overweight and obesity in the context of Community Health

Using principles underpinned by the *Health Promoting Schools Framework*, nurses working in the school settings should seek opportunities to work collaboratively with teachers, health committees and others in the school community to raise awareness about obesity and overweight in the school community and advocate for positive and healthy lifestyle initiatives. Specifically in relation to addressing obesity among school aged children and young people, broad health promotion approaches would include influencing school policy and ethos in relation to physical activity, healthy eating, the discouragement of food-related rewards and promotion of positive mental health including anti-bullying and positive self-esteem. Obesity prevention strategies need to be consistent and long term (over several years) in the school setting to reach intended obesity reduction goals.

At an individual level, nurses working in the primary school setting are able to conduct BMI assessments, provide brief intervention with parents where appropriate, give information, and provide referral, liaison and support for children and their parents/carers.

The broad health promoting school approach combined with more intensive support for individual families in need has been suggested to have positive outcomes in reducing the development of obesity and preventing the progression of obesity where it already exists.<sup>38, 39</sup>

For more information about school health promotion activities in the field of healthy eating, physical activity, healthy lifestyles and body image, refer to the *Health Promoting Schools Framework Toolkit* for Primary school (see Useful Resources section above).

#### **Support and guidance**

Successful long term weight management for children is most likely to be achieved in families who adopt healthier lifestyle habits as a family unit.<sup>40</sup> The *Be Smarter* goal setting tool is a strengths based approach to assist in engaging with parents and identifying lifestyle goals most likely to benefit their family. Nurses should refer to the *BMI Assessment Primary School* procedure and *Be Smarter* facilitator guide and online training for more information.

#### ***Nutrition recommendations***

For age-appropriate serve size and number of serves recommended for each of the five food groups refer to the Australian Government's *Healthy Eating for Children brochure*.

#### ***Movement recommendations***

Children aged 5–17 years should:

- accumulate at least 60 minutes of moderate to vigorous intensity physical activity every day

- partake in several hours of a variety of light physical activities per day.
- limit use of electronic media for entertainment to no more than two hours a day.
- Break up long periods of sitting as often as possible.<sup>41</sup>

### ***Sleep recommendations***

Children aged 5–17 years should have consistent bed and wake-up times including on weekends and aim for quality uninterrupted sleep of the following age appropriate durations:

- 9–11 hours of sleep per night recommended children aged 5–13 years
- 8-10 hours of sleep per night recommended adolescents aged 14–17 years.<sup>41</sup>

### **General**

Additional practical strategies that can support families to adopt lifestyle behaviours that are conducive to healthy weight can be found on the reverse side of the *Be Smarter* goal setting sheet.

## Appendix C

### Adolescents: Recommendations for prevention and early intervention of childhood overweight and obesity in the context of Community Health

Using principles underpinned by the *Health Promoting Schools Framework*, nurses working in the school settings should seek opportunities to work collaboratively with teachers, health committees and others in the school community to raise awareness about obesity and overweight in the school community and advocate for positive and healthy lifestyle initiatives. Specifically, in relation to addressing obesity among school age children and young people, broad health promotion approaches would include influencing school policy and ethos in relation to physical activity, healthy eating, the discouragement of food-related rewards and promotion of positive mental health including anti-bullying and positive self-esteem. Obesity prevention strategies need to be consistent and long term (over several years) in the school setting to reach intended obesity reduction goals.

The broad health promoting school approach combined with more intensively supporting individual families in need has been suggested to have positive outcomes in reducing the development of obesity and preventing the progression of obesity where it already exists.<sup>38, 39</sup>

At an individual level, BMI assessments are not undertaken by Community Health Nurses working in the secondary school setting. Adolescents may directly raise personal weight concerns with the nurse or weight related concerns may be identified through a HEADSS assessment. Nurses can support adolescents through brief intervention, provision of information and referral and liaison with other health services where indicated. If trained in the area, nurses may use motivational interviewing techniques to support adolescents to progress through the stages of change, assisting the adolescent make lifestyle changes that are sustainable and conducive to healthy weight.<sup>11</sup>

For more information about school health promotion activities in the field of healthy eating, physical activity, healthy lifestyles and body image, refer to the *Health Promoting Schools Framework Toolkit* for Secondary school (see Useful Resources section above).

#### **Support and guidance**

Nurses should involve the young person's family if possible but be aware of the adolescent's growing independence whilst practicing within the limits of confidentiality.<sup>11</sup>

If the family and significant others are involved, encourage them to avoid talking about weight (regardless of whether in reference to themselves or their adolescent). Weight teasing (hurtful weight related comments) is associated with extreme weight control behaviours, binge-eating and further development of obesity.<sup>42</sup> Instead, encourage family members to positively support a healthy body image, healthy eating, physical activity, sleep, sleep hygiene and moderated levels of screen time.

Nurses engaging in brief interventions to support adolescents who are above a healthy weight should focus on the following key points:



- Facilitate individual goal setting where goals are not tied exclusively to weight loss but are focused on modifiable behavioural strategies known to support healthy weight status (healthy eating, physical activity, sedentary activity including screen time and sleep).
- Disordered eating behaviours, such as bingeing, extreme dieting, purging and starvation, are often practiced by overweight and obese adolescents.<sup>43</sup> These unhealthy and extreme weight control behaviours are strongly associated with depression, anxiety, and higher levels of obesity due to the likelihood for higher weight rebound.<sup>43-45</sup>
- A focus on healthy family based lifestyle modification has been shown to also be protective against eating disorders in adolescence.<sup>42, 46</sup>
- Prevention messages and health care conversations should be sensitive, non-judgmental, discourage dieting and encourage young people to have a positive relationship with their bodies.<sup>43</sup>
- Speak to the young person with and without his or her parent or caregiver as appropriate.
- Treat the young person as responsible and capable of contributing to decision-making.
- Overweight or obese adolescents may experience bullying, low self-esteem or other mental health concerns. Nurses should work within their scope of practice, providing wellbeing support, brief intervention and/or referral as appropriate.

Staff should refer to the *HEADSS Adolescent Psychosocial Assessment* and the *Adolescent Psychosocial Brief Intervention* guideline and handbook for additional support in this area (see Useful Resources above).

### **Nutrition recommendations**

For age-appropriate serve size and number of serves recommended for each of the five food groups refer to the Eat for Health Calculators found on the Australian Government's *Eat for Health* website.

### **Movement recommendations**

As part of healthy lifestyle behavioural modifications, adolescents should be encouraged and supported to reach the activity levels recommended in the Australian 24 hour movement guide.<sup>41</sup>

- Young people aged 13–17 years should accumulate at least 60 minutes of moderate to vigorous intensity physical activity every day.
- Young peoples' physical activity should include a variety of aerobic activities, including some vigorous intensity activity.
- On at least three days per week, young people should engage in activities that strengthen muscle and bone.
- Young people aged 13–17 years should minimise the time they spend being sedentary every day. To achieve this:

- Limit use of electronic media for entertainment (e.g. television, seated electronic games and computer use) to no more than two hours a day.
- Break up long periods of sitting as often as possible.
- To achieve additional health benefits, young people should engage in more activity – up to several hours per day.

### **Sleep recommendations**

Between 8-10 hours of uninterrupted sleep per night is recommended for young people, with consistent bed and wake-up times (ages 14-17 years).<sup>41</sup>

## Appendix D

### Protective and Risk Factors for Childhood Obesity

GENETIC MAKEUP	CHILD DIETARY INTAKE	FAMILY ENVIRONMENT	PARENTING
<p><i>Protective Factors</i></p> <ul style="list-style-type: none"> <li>• 'Active' metabolism (tendency to expend energy)</li> </ul> <p><i>Risk Factors</i></p> <ul style="list-style-type: none"> <li>• Parental Obesity</li> <li>• Ethnicity</li> <li>• Conservative metabolism (tendency to store energy)</li> <li>• Certain rare endocrine disorders (e.g. Prader-Willi Syndrome).</li> </ul>	<p><i>Protective Factors</i></p> <ul style="list-style-type: none"> <li>• High intake of low GI foods (e.g. whole grains, legumes)</li> <li>• High intake of dairy foods (e.g. low-fat milk, yoghurt)</li> <li>• Eating a healthy breakfast</li> </ul> <p><i>Risk Factors</i></p> <ul style="list-style-type: none"> <li>• Infant formula volume and composition</li> <li>• High intake of energy dense, nutrient poor foods (e.g. fast foods, soft drinks)</li> <li>• Early introduction of solids.</li> </ul>	<p><i>Protective Factors</i></p> <ul style="list-style-type: none"> <li>• Parent has an active lifestyle Meals are eaten as a family</li> <li>• Fruit and vegetables are available and easily accessible in the home</li> <li>• Child has access to safe outdoor playing areas</li> <li>• Parent and child engage joint physical activities</li> <li>• Parent offers transport to sporting venues</li> </ul> <p><i>Risk Factors</i></p> <ul style="list-style-type: none"> <li>• Family has few economic resources</li> <li>• Parent lacks nutritional knowledge</li> <li>• Living in a regional or remote area.<sup>8</sup></li> <li>• Parent does not recognise childhood obesity or is not concerned about it</li> <li>• Parent has unhealthy eating habits (e.g. regular dieting, or overeating)</li> <li>• Screen time</li> <li>• Parent works long hours</li> <li>• Parent uses the car for all transport.</li> <li>• Energy dense foods are available and easily accessible in the home.</li> </ul>	<p><i>Protective Factors</i></p> <ul style="list-style-type: none"> <li>• Parent monitors child food intake and activity patterns</li> <li>• Parent reinforces healthy behaviours (e.g. through praise and modelling)</li> <li>• Parent sets firm limits about food and activity</li> </ul> <p><i>Risk Factors</i></p> <ul style="list-style-type: none"> <li>• Restrictive child-feeding practices (i.e. parent rarely gives child choices about what to eat and how much)</li> <li>• Permissive child-feeding practices (e.g. parent accommodates child's dislike or avoidance of new foods)</li> <li>• Coercive parenting style (e.g. parent shows anger when child misbehaves)</li> <li>• Inconsistent parenting style (e.g. parents fails to follow through with discipline)</li> <li>• Low self-efficacy (i.e. parent lacks confidence in managing child's weight related behaviour)</li> </ul>
EARLY GROWTH & DEVELOPMENT	CHILD ACTIVITY PATTERNS		
<p><i>Protective Factors</i></p> <ul style="list-style-type: none"> <li>• Exclusive breastfeeding for 6 months</li> </ul> <p><i>Risk Factors</i></p> <ul style="list-style-type: none"> <li>• High birth weight</li> <li>• Early adiposity rebound</li> </ul>	<p><i>Protective Factors</i></p> <ul style="list-style-type: none"> <li>• Regular physical activity (e.g. &gt;60 minutes moderate-vigorous organised activity or energetic play per day)</li> </ul> <p><i>Risk Factors</i></p> <ul style="list-style-type: none"> <li>• High levels of sedentary activity (e.g. &gt;2hrs screen time per day)</li> <li>• Poor sleep patterns (e.g. poor routines or sleep apnoea)</li> </ul>		

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