

Inquiry into Obesity in Australia

Terms of Reference

The Committee will inquire into and report on the increasing prevalence of obesity in the Australian population, focusing on future implications for Australia's health system.

The Committee will recommend what governments, industry, individuals and the broader community can do to prevent and manage the obesity epidemic in children, youth and adults.

The following submission has been prepared by researchers from the Centre of Physical Activity Across the Lifespan in the School of Exercise Science at the Australian Catholic University and members of the Filling the Gap Team in the Department of Nutrition and Food Services at the Royal Children's Hospital in Melbourne.

We specifically address prevention and management in children and youth. We recognise we represent one cog in a society of support required to responsibly address childhood overweight and obesity. A large part of this submission addresses physical activity issues however, some examples with nutrition are also included.

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1. Selected Background Statistics

In 1995, one in four or five children were overweight or obese in a nationally representative sample. The prevalence represented a three fold increase in the obesity since 1985 (Magarey et al 2001). Discerningly a large study of children in New South Wales showed an accelerated rise of around 0.5% year in the prevalence of overweight and obesity in children between 1997 and 2004 (NSW Health: SPANS report).

In the 12 months leading to April 2006, 27% of children aged 5 to 14 years had neither participated in sport nor experienced one of four culturally based activities (music, singing dance and drama) outside of school.

In the same period 65% of children reported having access to computers outside of school (ABS Cat. 4901.0 - Children's Participation in Cultural and Leisure Activities, Australia, Apr 2006).

2 Some unpublished findings linked to Childhood Overweight and Obesity

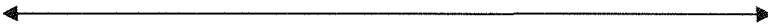
The Critical Windows Project: Health-related behaviour of children after school (unpublished findings, 2003)

We conducted a profile of after-school nutrition and physical activity in a random sample of Year 5 children (aged 10 years) from schools in Western Sydney. The “Critical Windows” project was named to examine discretionary choices in health-related behaviour after school. Data collection also included body composition (normal weight, overweight or obese) and postcodes were used as a marker of socioeconomic status.

Prevalence of overweight and obesity

- Within the stratified random selection of schools in the study, one in three of the children was either overweight or obese.
- No gender differences were observed in the classification of overweight or obese children.
- The prevalence of overweight and obesity in this population of year 5 children in Western Sydney is higher than recent reports from normative Australian data that currently estimates one in four to five children is overweight or obese.
- A high prevalence of overweight and obesity was observed in the more disadvantaged suburbs when compared with the more advantaged suburbs, based on the SEIFA index ($p = 0.001$ and trend $p = 0.002$).

Table 1: Socio-economic status and body composition profiles

Most advantaged *Most disadvantaged*


Category	Socio-economic status				
	1	2	3	4	5
Normal weight	76%	82%	56%	64%	61%
Overweight	18%	13%	30%	24%	28%
Obesity	6%	5%	14%	12%	11%

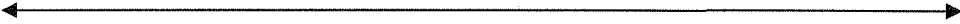
Physical activity

- Overall, few children were participating in organised activity outside of school, and regular organised activity involved more boys than girls.
- Free play was more frequently reported than organised sports or other physical activities. Time for free play was not compromised by extra out of school activities such as tutoring or music classes.
- Almost all children reported at least 30 minutes of free time daily.
- Time and safety issues were the most frequently cited barriers to children’s physical activity by parents.

Physical activity and socioeconomic status

Children from the more socio-economically advantaged suburbs perceived greater access to organised activities requiring more support perhaps in terms of transport and finance.

Table 2 Socio-economic status & perceived availability of organised sport

Most advantaged *Most disadvantaged*


1	2	3	4	5
63%	65%	60%	75%	46%

Table 3 *Socio- economic status & ability to self select after school activity*

Most advantaged ←-----→ *Most disadvantaged*

<i>(SEIFA index)</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
	74%	72%	78%	79%	82%

Also children from the more socio-economically advantaged suburbs were less free to choose what they did after school.

Physical activity and prompts to be active

Forty-one percent of the children reported prompts to be more active after school from adults and 17% reported physical activity prompts from peers or siblings. An additional 41% of children believed they did not receive any prompts to do more activity.

Prompting children to be more active is seen as another initiative for families and carers to practice. For children in their late years of primary school, adults (and in particular parents) remain the major agents for changes in physical activity. Intuitively, the nature of the prompts to be active would need to be more empowering and positive than punitive and negative. Parents do not necessarily have to do the activity with children, however they will need to be prepared to be helpful in making arrangements for the activity and nurturing the positive values of movement, friendship and challenges that will arise with new experiences.

Who decides what to eat after school?

We were interested in who decides the type of snack eaten after school. Sixty-four percent of children report making their own choice and an additional 33% of children believed an adult makes the choice for them.

The analysis for differences in snack decision making by weight classification showed children classified as obese to be slightly more likely to select their own snack than children with normal and overweight classifications but this result was not significant ($p = 0.07$).

Table 4 *Children believing snack food choices were their own*

<i>Normal weight</i>	<i>Overweight</i>	<i>Obese</i>
63	64	75

Limiting quantities of snacks

In response to the question “who decides when you have had enough to eat after school”, 60% of the children believed the decision was their own and 37% of the children believed the decision was made for them by an adult.

Free access to food at home in children 5 to 6 years of age was recently linked to childhood overweight and obesity in a North American study [Ariza AJ, Chen EH, Binns HJ, Christoffel KK. Risk factors for overweight in five- to six-year-old Hispanic-American children: a pilot study. *Journal of Urban Health*. 2004; 81(1):150-61]. This is consistent with the Critical Windows finding that children of normal and overweight classifications reported more encouragement to eat less than children with an obese classification (trend, $p = 0.018$).

Table 5 *Children reporting being encouraged to eat less during after school snacking*

<i>Normal weight</i>	<i>Overweight</i>	<i>Obese</i>
30%	27%	15%

Recommendations from the Critical Windows study

1. Family-based management of overweight and obesity, nutrition and physical activity is a health priority for children in their late primary school years. Parents remain the most influential agents of good and not so good health-related changes in behaviour. Community agencies such as activity providers and schools should complement messages of activity and nutrition instigated by families.
2. Parents and children should negotiate a list of the types of after-school snacks they believe are appropriate and limit the type and amounts of foods and drinks that are available to eat after school.
3. Parents of children in their late years of primary school should discourage children from consuming take away food as an after-school snacks and limit access to other less healthy options.
4. Families should be encouraged to negotiate limits with their children about times spent using small screens (e.g. computers, television, electronic games) and other long periods of time without movement opportunities during the daylight hours after school.
5. Opportunities for low cost and convenient after-school activity should also be opened up, highlighted or subsidised for families, particularly for families in more disadvantaged areas.
5. After-school activity providers should increase positive prompts for children during activity, to capitalise on the happiness reported by the children during activity. This is particularly important for overweight children who may saw themselves as less competent at physical activity than others.
7. Families should be encouraged to discuss a range of physical activity options involving largely outdoor low cost and convenient options. They should also discuss what might be possible indoors when the weather is not suitable to be active outdoors.

8. Marketing new physical activity opportunities for children in the final years of primary school should include consultation on what times and costs are most appropriate for busy young families.

9. Limited use is being made of open spaces after school. Local councils and other community activity providers should agree to address the allocation, design and maintenance of open play spaces.

10. Enough evidence is provided from this project to identify desirable practices in health-related behaviour after school. Families can work with schools and community to provide multi-dimensional support for health related behaviour after school. Desirable health-related behaviour after school is best described in this project by positive play and other physical activity experiences, setting limits to sedentary behaviour, and sensible, supervised snacking.

3 Higher prevalence of inactivity with the potential to lead to childhood obesity among some Culturally and Linguistically Diverse communities

In the United States, a higher prevalence of childhood overweight and obesity is noted in ethnic minority groups. [Prevalence and Trends in Overweight Among US Children and Adolescents, 1999-2000. Ogden,

C.L., Flegal, K.M., Carroll, M.D., Johnson, C.L. *JAMA*. 2002;288:1728-1732.]

In Australia, the relatively low size of ethnic groups in randomized samples of children in overweight and obesity studies has precluded acceptable conclusions about the prevalence of this condition. Children born in **non-English speaking** countries were **less likely** to participate in organised sport or cultural activities (**56%**) than Australian born children (**77%**) [ABS, 2006]

In collaboration with the “Filling the Gap” team from the Department of Nutrition and Food Services at the Royal Children’s Hospital in Melbourne, we conducted focus groups with community educators from the following communities

Iraqi
Afghani
Chinese
Vietnamese
Somali
Bosnia / Serbia / Croatia

We wanted to evaluate the relevance and likely impact of key messages in the obesity prevention initiative of the Victorian Government’s “Kids: Go For Your Life” – for whom we (the Filling the Gap Team) are writing the evidence-based resources for families and health professionals.

In response to key messages about increasing children’s physical activity and decreasing sedentary time, the communities educators reported that they personally agreed with the

messages, but implementation in their communities would likely meet several barriers including:

- physical activity can be deemed to be messy and noisy and parents of messy and noisy children are not regarded as “effective” parents within some communities
- activity, games, and sports promotions are more likely to attract boys than girls because girls in some communities get their physical activity from helping around the home and perhaps some cultural dance
- parents were perceived as being fearful of the risks involved in outdoor play. (Some parents having been raised in war torn countries, did not experience creative outdoor play). Pictures of children climbing over stones in playgrounds brought some gasps of fear from our focus group participants
- neighbourhood parks were not likely to be attractive or safe play spaces to some single parent families within several cultures and so networking with other parents would be necessary before they would consider visiting parks or play spaces with their children
- on religious grounds, families from some cultures were unlikely to take up prompts to take their children to the beach or swimming pool (semi-nude people was simply not attractive to some cultures with strict laws of modesty)
- newly arrived families faced many challenges with nutrition such as having to accept that water from the tap was available and reliable to drink
- offering water to family guests in some cultures was seen as much less respectful than if sweet drinks were available

- cola drinks were relatively cheap and parents and grand parents found these types of drinks easy to reward children with
- newly arrived families simply did not know what to do with different varieties of fruits and vegetables
- food common to their home culture had no resemblance to sandwiches that other children were taking to school for lunch. In some cultures, complying with the lunch box culture in Australian primary schools, brought angst to many families

Following the focus groups we reflected on the inappropriateness of a “white middle class” pitch, behind so many physical activity and nutrition campaigns. We are striving to work with these communities to make our messages culturally appropriate. We are also respectful that many other issues will take higher priorities in the lives of poorly understood families who face significant daily challenges for survival.

We applaud every effort to prioritise support for obesity prevention in families at high risk of poor health outcomes.

4 Active Play Environments

Developmentally appropriate play is an integral part of healthy weight in childhood

- Physical **INACTIVITY** from an early age can lead to chronic conditions including obesity [Moore LL, Gao D, Bradlee ML, Cupples LA, Sundarajan-Ramamurti A, Proctor MH, Hood MY, Singer MR, Ellison RC. Does early physical activity predict body fat change throughout childhood? *Prev Med* 2003, 37: 10 – 17].

Physical activity is the currency of early development.

Movement assists in building fundamental skills for growth and development, provides the skills essential for survival and progressive independence and forms a large basis for social integration

In children physical activity serves a higher order of purpose than energy expenditure.

Pleas to resurrect play [Burdette, H.L., Whitaker, R.C. Resurrecting Free Play in Young Children Looking Beyond Fitness and Fatness to Attention, Affiliation, and Affect. *Arch Pediatr Adolesc Med.* 2005;159:46-50] extend well beyond the fitness and fatness premise on which adult treatment models to improve health are marketed.

Outdoor active play in childhood serves multiple purposes critical for holistic development:

Creativity	Advocacy and negotiation
Socialisation	Problem solving
Physical competences	Respect and care for the environment
Responsible risk management	Leadership, co-operation and independence

Generational changes

When we asked a group of parents at a primary school in Western Sydney to describe the best fun they had playing when they were children, inevitably they described outdoor, unsupervised play [Bundy, A.C., Lockett, T., Naughton, G.A., Tranter, P.J., Wyver, S.R., Ragen, J., Singleton, E., Spies, G.

Regrettably, these parents believed their own children would not be able to report as many free play experiences as they had. For a multitude of reasons, children's free play time is diminishing. Parents sometimes "organise" their children out of time for outdoor creative play. Parents believe supervision is critical and often fear perceived risks from free play. Roads are busy, parks are not always convenient, and in this context, play time impinges on parent's free time.

The perceived risks of free outdoor play are not likely to be a true estimate of the risks. The multiple benefits of play far outweigh the risks, to the point that the greatest risks are, in reality, NO PLAY.

Free outdoor play for most children in Australia is available, cheap, and local. Organised activities such as dance, swimming, and basketball facilitate many qualities in children, but they are not usually every day opportunities. Children need to play every day.

We introduced simple, non-directional play materials such as boxes, hay bales and tyres into the school play ground at the school in Western Sydney. The children who were less active at the start of the school term increased their activity by the end of the school term. We contend free play with simple materials attracts children with all levels of interest in activity and includes children who may otherwise feel awkward or isolated in competitive structured activities. But perhaps successful experiences in free play need to come early in life.

Another project with our involvement is the LEAP project targeting behavioural change in overweight but not obese children [Z McCallum, Z., Wake, M., Gerner, B, Baur, L.A., Gibbons, K., Gold, L.,

Gunn, J., Harris, C., Naughton, G., Riess, C., Sanci, L., J Sheehan, J., Ukoumunne, O.C., Waters E. Outcome data from the LEAP (Live, Eat and Play) trial: a randomized controlled trial of a primary care intervention for childhood overweight/mild obesity.

International Journal of Obesity 2007, 31: 630-636.] Unpublished physical activity data from this study revealed that despite General Practitioner prompts for low cost, convenient free play, if

any activity increases occurred, parents were more likely to help their children take part in more structured organised activities such as local sport. Similarly, of the multitude of nutrition tips suggested by the General Practitioners, changing to drinking water was the most likely nutrition behaviour that families could make.

Re-prioritising play in families would be among the strongest recommendations from this submission. Rethinking the risks in light of the real risks of no play needs to be the subject of strong public health campaigns for childhood obesity prevention. Unwrap the bubble wrap placed around children when perceived risks prevent play.

Perceptions about safety in local traffic among children ^[Timperio, A., Crawford, C., Telford, A., Salmon, J. Perceptions about the local neighborhood and walking and cycling among children. Preventive Medicine 38 (2004) 39–47] can also explain the shift away from active transport in Australia. Public health and local governments can assist families to also prioritise the environmental responsibility that accompanies increased activity from active transport.

Building positive environments

Fewer siblings translates to fewer play mates. The Children in Sport, from the Australian Sports Commission, ^[Olds et al 2003] showed boys (but not girls) with more than one sibling were more active.

Asking parents to think about encouraging play buddies for children without siblings to play with, is seen as another message to enhance obesity prevention in childhood.

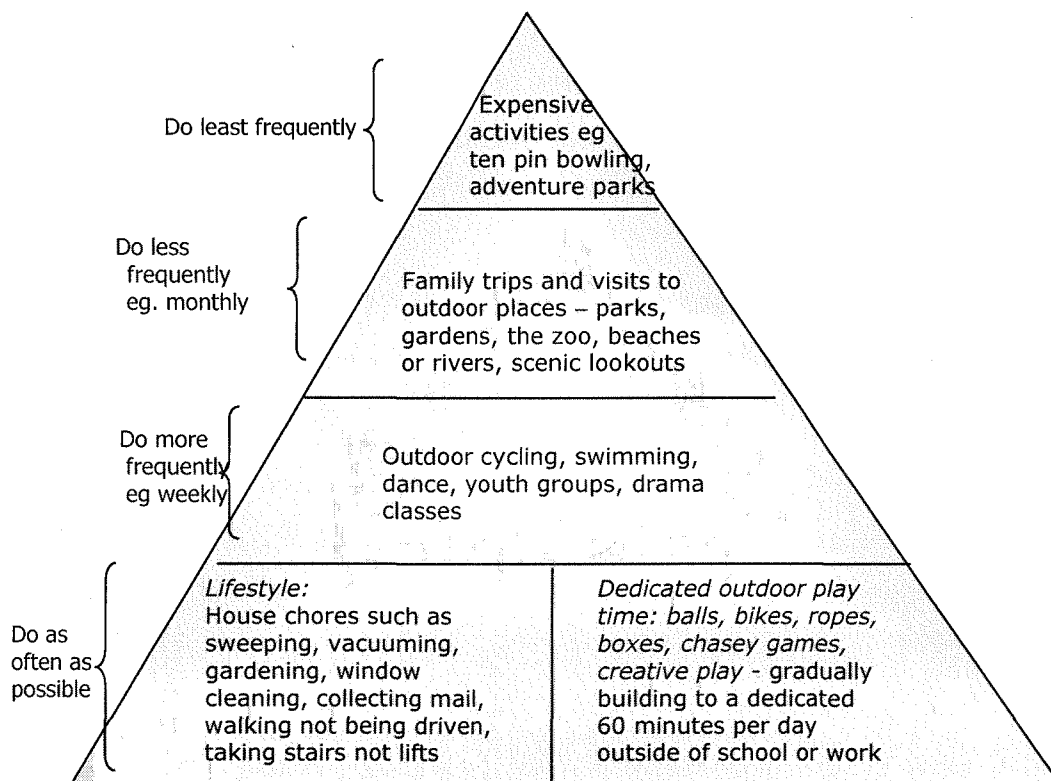
“Positive play environments” will be individually determined but every effort needs to be made to:

provide choices of stimulating but simple materials

include all children, and set rules of intolerance to teasing or exclusion

start with simple activities with a high likelihood of success, and move progressively, and respectfully on to more challenging or prolonged play opportunities.

The Australian recommendations are for children to experience a minimum of one hour and up to several hours of physical activity per day. The greatest health benefits were seen in Northern European children who reported 90 minutes or more of activity per day [Andersen, L.B., Harro, M., Sardinha, L.B., Froberg, K., Ekelund, U., Brage, S., Anderssen, S.A. Physical activity and clustered cardiovascular risk in children: a cross-sectional study (The European Youth Heart Study). *Lancet* 2006; 368: 299–304]. The Australian recommendation has limited scientific evidence behind it. In light of studies showing increased overweight and obesity in children, we contend that the recommendation at least move to 60 minutes OUTSIDE OF SCHOOL OR CHILD SETTINGS. Limiting sedentary behaviour to less than two hours should also apply outside of school hours, because it is simply impossible to apply, if the recommendation includes time in the largely sedentary time spent during school hours.



Some physical activity prevention and treatment programs for obesity are built on teaching fundamental movement skills. This practice is well founded. However, even the children with the clumsiest skills, who will never quite master skills with the competence of others, need to feel successful in physical activity. A broad range of simple skills should be promoted, to allow the children who perhaps need the positive reinforcement the most, to feel satisfied enough to keep trying.

5. Best practices?

Because a gold standard of treatment doesn't exist, confusion surrounds existing treatment strategies. For example, we receive mixed messages about whether to keep it behavioural changes simple or lobby for a whole of community approach.

Simple messages

A small change approach to childhood obesity prevention was recently trialed. [Rodearmel, S.J., Wyatt, H.R., Stroebele, N, Smith, S.M., Ogden, L.G., Hill, J.O. Changes in Dietary Sugar and Physical Activity as an Approach to Preventing Excessive Weight Gain: The America on the Move Family Study. *Pediatrics*. 2007,120 (4) e869-e879]. One

hundred families with at least one overweight child, followed the America on the Move Foundation's "Families on the Move Program". The program required families to substitute at least 100 kcal/day of sugar intake with sugar substitute and to walk an extra 2000 steps per day over baseline. After 6 months, researchers found the America on the Move group, compared with a 'self-monitoring' group, had a statistically higher percentage of children who maintained or reduced weight and a higher percentage of children who decreased body mass index.

Whole of community approach

Global pleas for common sense approaches to prevent childhood obesity have been well presented elsewhere. The following is one example:

A common sense approach to prevention and treatment of childhood obesity

Home	Set aside time for Healthy meals Physical activity Limit television viewing
School	Fund mandatory physical education Establish stricter standards for school lunch programs Eliminate unhealthy foods—eg, soft drinks and candy from vending machines.

	Provide healthy snacks through concession stands and vending machines
Urban design	Protect open spaces Build pavements (sidewalks), bike paths, parks, playgrounds, and pedestrian zones
Health care	Improve insurance coverage for effective obesity treatment
Marketing	Consider a tax on fast food and soft drinks and media Subsidise nutritious foods—e.g., fruits and vegetables Require nutrition labels on fast-food packaging Prohibit food advertisement and marketing directed at children Increase funding for public-health campaigns for obesity prevention
Politics	Regulate political contributions from the food <i>[Ebbeling, C Pawlak, D. Ludwig D. Childhood obesity: public-health crisis, common sense cure. The Lancet, 360, (9331), Pages 473 – 482].</i>

A whole of community obesity prevention program was conducted across several villages in France. The program started with some school curriculum changes. However, the school-based program resulted in stabilizing but not reducing the rate of childhood overweight and obesity. After extending the program to the wider community, it successfully reduced childhood obesity. The whole of community approach included agents such as schools, shops, restaurants, local media, health professionals and community sport.

However, the program took more than 8 years for the decline in obesity to become apparent. Programs targeting single agencies such as schools, parents, and community sport alone, are not sufficient. The involvement of the whole community may be necessary to reduce the prevalence of childhood obesity. *[Borys et al Obesity Reviews 7(suppl. 2) 2006 1-34 (Abstract)]*

Physical activity challenges

Despite physical activity being as essential as well balanced nutrition for weight management in children, in some children and families, it is the least attractive option for

health improvement. It is difficult for particularly very active adults and other children to understand that physical activity is not always fun for some children [Wilkin, TJ Mallam, KM Metcalf, BS Jeffery AN and Voss LD Variation in physical activity lies with the child, not his environment: evidence for an 'activitystat' in young children (*EarlyBird* 16) *International Journal of Obesity* (2006) 30, 1050–1055. doi:10.1038/sj.ijo.0803331]. Yet it is always marketed with such glitz, leading to further alienation for children who fail to be attracted by the notion fun or even of potentially failing, yet again. Non-competitive, environmentally rewarding physical activity options are rarely promoted. We contend the need for parents to have increased awareness of options other sport for children who don't always enjoy this environment. Access for options is thought to be particularly challenging for children in rural areas, and become more pronounced during adolescent years.

Further to this, is a plea to remove all semblance of fitness testing in primary schools. Tests used are largely invalid, unethical to impose without parental consent, and serve no educational or health promotion purpose. At least by secondary schools, adolescents who really don't wish to participate can thankfully find ways to avoid them. Time spent dedicated to physical activity at primary school is limited and ought to promote positive, lasting and empowering effects on children who carry the most risk of being inactive [Naughton, G. A., Carlson, J. S. & Greene, D. A. A challenge to fitness testing in primary schools. *Journal of Science and Medicine in Sport* 2006 9(1-2) 40-45]

Adolescents

Few interventions are available on adolescents. The Dutch Obesity Intervention Trial (DoIt) trial commenced with health education curriculum delivered at school and advanced to on-line interaction with dietitians and exercise specialists [Singh, A.S., Paw, M.J., Brug J, van Mechelen, W. Short-term Effects of School-Based Weight Gain Prevention Among Adolescents. *Arch Pediatr Adolesc Med.* 2007;161(6):565-571]. Body composition changes were evident after 8 months of the intervention. The use of an electronic medium in a voluntary capacity by the adolescents may be attractive for future interventions with adolescents.

The New Moves study was piloted with inactive adolescent girls in the United States [Newmark-Sztainer D, Story M, Hannan P and Rex J. New Moves: a school-based obesity prevention program for adolescent girls. *Preventative Medicine* 2003 37:41-51]. Focus groups were conducted with adolescent girls, their

teachers, and parents prior to conducting a 5 day per week, 16 week intervention of physical activity, psycho-social support and nutrition support. The curriculum program was based on issues raised in the focus groups. Participants perceived a positive program impact on their physical activity, eating patterns, and self-image. Some deemed the program unsuccessful because the body composition measures did not change.

A problem with the existing scientific literature is the emphasis on weight loss as the main outcome rather than behavioural change, which appears to be secondary to trial successes. The new MEND project, being funded around Australia for the treatment of childhood overweight and obesity has “weigh-in”s and certificates with weight loss as the major emphasis. The roller coaster of weight loss programs must be deemed as inappropriate and far inferior to whole family lifestyle changes in a paediatric weight management setting seeking long-term health related outcomes. For a multitude of reasons, behavioural changes need to be valued well ahead of weight change.

In some cities in country Victoria, when a young person seeks help for an eating disorder, a team of health professionals work to support this person. In contrast, when a young person is diagnosed with obesity by maternal child health / community nurses or school nurses, few local points of referral exist. There is an additional dearth of tertiary referral services for paediatric and adolescent weight management in state capitals. If the services exist they are likely to have approximately six month waiting lists, excessive times between visits and concerning records of failure to attend. Local, paediatric-trained teams of health professionals with access to current knowledge, and regular networking opportunities are deemed as essential to support emerging best practices in primary care for family based weight management support.

Medicare rebates to community dietitians for working with overweight and obese patient referrals only apply to adults, not children. This policy requires immediate attention. Paediatric nutrition accreditation is available for dietitians. Conversely, paediatric training for accredited exercise physiologists is not available to date. Community fitness certificates for working with children do not match the paediatric, holistic, and family

focus towards weight management, offered by dietitians and pediatricians who have specialised in this area. Therefore, additional training is needed to support physical activity practitioners/ exercise physiologists for children with weight management concerns.

