



Diabetes NSW & ACT

Parliamentary Inquiry into Childhood overweight and Obesity – Question on Notice

Diabetes NSW & ACT provides the following response to the question taken on notice at the Committee Hearing on 12 September 2016.

The Hon. GREG DONNELLY: Mr Eastwood, in your opening statement, you distinguish family programs from programs for individuals or for children. Can you elucidate further on what a family program is, whether there is good understanding of that definition and give us some examples?

1. CHILDHOOD OBESITY

Obesity is strongly associated with insulin resistance which together with relative decrease in insulin production by the body leads to type 2 diabetes. Obesity has led to an increase in the incidence of type 2 diabetes among children and adolescents over the past two decades. Obesity as a child, increases the likelihood of being obese as an adult (1,2).

The incidence of individuals newly diagnosed with type 2 diabetes in the 0-15 years age bracket in NSW, is averaging 16 children for each quarter for the last five quarters. This data captured by the National Diabetes Services Scheme (NDSS) only measures those who are registered with the Scheme. We know that those diagnosed with type 2 diabetes are not always registered with the Scheme if they only require lifestyle modifications to control their diabetes.

From a world-wide perspective there appears to be a close relationship between rates of type 2 diabetes in adults and the appearance of the condition in adolescents. In each of the regions affected there was also an increase in obesity in the general population. This has led to the suggestion that adolescents in areas with a high prevalence of type 2 diabetes should be considered at risk for diabetes (3).

2. EFFECTIVENESS OF INTERVENTION PROGRAMS

The general consensus among researchers is that programs to address childhood obesity are more effective long term with child and parent involvement (4). Common sense would tell us that the home environment is paramount to the lifestyle habits of children. Logically, changing the home environment to practise and reinforce healthy lifestyle habits would make a difference in tackling the childhood obesity epidemic.



A study from Canada stated “that simple encouragement is not enough – active parental support is essential when supporting children’s healthy eating, physical activity and restricted screen time”. To develop children’s healthy lifestyle behaviours parent’s need to be positive role models and actively support their children (5).

Most behavioural change programs targeted at childhood overweight and obesity focus on the school environment. The school environment is an important catalyst for change to healthy lifestyle behaviour, but extending the influence of school based programs for sustained behavioural change requires the positive influence of parents and care givers as well as the community (6,7). School programs alone are not enough to produce long-term sustained benefit in reducing overweight and obesity.

3. FAMILY BASED PROGRAMS

There are many evidence based programs world-wide which focus on child and parental/carer involvement. The elements they all have in common are nutritional education, physical exercise and enhancing parenting skills and family counselling. They follow a similar format with adaptation to the local needs. The following three programs are outlined. All have been evaluated and demonstrate positive results in reducing weight among participating children.

a) Kids N Fitness from Los Angeles, USA (8)

The Kids N Fitness program is an evidence-based, weight management program for overweight and obese children and their parents. This program meets at the Children’s Hospital Los Angeles and at various other sites in the community.

It is a six-week weight management program for overweight and obese children aged 8-16 years and their parents. The 1.5 hour weekly class consists of interactive nutrition education, physical activity and parent seminars. The entire family is welcome and encouraged to attend. Kids N Fitness was developed in 2000 as a response to the obesity epidemic.

A Kids and Fitness Junior is being piloted for children aged 3-7years and their families in response to the increasing rates of overweight and obesity in younger children.

The criteria for participation in these programs are:

- children with a BMI at or above the 85th percentile,
- age 3-16 years,
- able to ambulate and participate in vigorous physical activity for 45 minutes,



- children and teens with at least one parent/guardian who is willing to attend an orientation and all six classes with the child, including a follow-up session three months later.

b) "Bright Bodies" using the Smart Moves program developed by the Yale School of Medicine, USA (9).

The Yale "Bright Bodies" Weight Management Program is a family-based, intensive lifestyle intervention that uses nutrition education, behaviour modification and exercise to address weight and weight-related issues in children and adolescents.

The program is designed for ethnically diverse, obese, inner-city youth. Participants and caregivers are provided nutrition education and behaviour modification techniques in 40-minute sessions, once per week, for six months, followed by every other week for the next six months.

The exercise component, facilitated by exercise physiologists, is provided in two 50-minute sessions once per week for the first 6 months and two 50-minute sessions twice per month for the next 6 months.

c) Go4Fun, NSW (10)

Go4Fun was originally adapted from the MEND (Mind, Exercise, Nutrition... Do it!) program which was designed and developed by health professionals in the United Kingdom before being modified to comply with Australian policies and guidelines.

The Better Health Company designed and developed the original program for Australian communities and continues to facilitate program implementation across Australia and New Zealand.

The Go4Fun program is a state-wide initiative of the NSW Ministry of Health. It is a free, healthy lifestyle program targeting socioeconomically disadvantaged families and children with a BMI measurement greater than or equal to the 85th percentile. Go4Fun is a ten week healthy lifestyle program for children aged 7 - 13 years, run by qualified health professionals. Sessions are 2 hours long and held after school, once a week running parallel with school terms.

The program focuses on improving eating habits, fitness, teamwork and overall health by encouraging a whole family approach to healthy lifestyle behaviours. Go4Fun programs are delivered by qualified health professionals and take place after school during the school term. It is available to children currently above a healthy weight and a parent or carer must attend all sessions with the children.



Evaluation (11)

Go4Fun evaluations demonstrate that the program has been successful in achieving its goals of weight loss in children attending, and change in lifestyle for the targeted demographic. Although it reached the targeted population the total of participants is very small with 5,301 children going through the program from July 2011 to July 2015.

As at June 2015 there were 1.43 million children aged 0-15 in NSW. If the statistics from a major 2010 study which found that 23.6% of NSW children were overweight or obese, then the scale of the problem is still immense. Clearly, the Go4Fun program is only reaching a very small proportion of overweight and obese children even of those in the target group.

Diabetes NSW & ACT would argue that the Go4Fun program could be further scaled up to reach more children and families by extending the time of the program to weekends so that working parents could attend. Serious consideration should be given to this measure.

4. GESTATIONAL DIABETES

Diabetes NSW & ACT would also contend that steps should be taken prior to childhood to prevent overweight and obesity with management of women with gestational diabetes.

Gestational diabetes develops in pregnant women usually in the second half of their pregnancy. The prevalence of gestational diabetes in NSW is increasing alarmingly year on year (Table 1). Some of the risk factors for gestational diabetes are age greater than 25 years, excessive weight, family history of type 2 diabetes and ethnicity (12).

About 50 % of women with gestational diabetes will develop type 2 diabetes later in life.

Year	2013	2014	2015	2016
% change	10%	23%	19%	13%

Table 1: Prevalence of gestational diabetes sourced from Diabetes Australia NDSS data.



Children of women with gestational diabetes are at much higher risk of: excessive birth weight leading to increased likelihood of caesarean section delivery, preterm birth and respiratory distress, still birth, low blood sugar (hypoglycaemia) shortly after birth and metabolic syndrome, obesity and type 2 diabetes later in life. Metabolic syndrome is a group of conditions which includes obesity, high blood pressure, high cholesterol and glucose intolerance (13). These are associated with cardiovascular disease.

Early lifestyle education and interventions could have a great impact on our future generations in addressing overweight, obesity and chronic conditions.

REFERENCES:

1. Hannon, T S, Rao, G, Arslanian, S A, 'Childhood Obesity and Type 2 Diabetes', *Pediatrics*, vol 116, issue 2 (2005) pp. 473-480.
2. Kelsey, M M, et al, 'Age Related Consequences of Childhood Obesity', *Gerontology*, vol 60, no. 3 (2014) pp. 222-228.
3. Pinhas-Hamiel, O, Zeitler, P, 'The Global Spread of Type 2 Diabetes Mellitus in Children and Adolescents', *The Journal Of Pediatrics*, (2005) pp. 693-700.
4. Epstein, Leonard; Valoski, Alice; Wing, Rena; McCurley, James, 'Ten-year Outcomes of Behaviour Family-Based Treatment for Childhood Obesity', *Health Psychology*, vol 13 (5), (1994), pp. 373-383.
5. Piper, E, Harrington, D, Mason, H, 'The Impact of Different Types of Parental Support Behaviours on Child Physical Activity, Healthy Eating and Screen Time: a Cross-Sectional Study', *BMC Public Health*, (2016) 16: 568
6. Marcus, M D, et al, 'Lessons Learned From the HEALTHY Primary Prevention Trial of Risk Factors for Type 2 Diabetes in Middle-School Youth', *Curr Diab Rep* (2013) 13(1) pp. 63-71.
7. Costa-Font, J, Jofre-Bonet, M, Le Grand, J, 'Vertical Transmission of Overweight: Evidence from English Adoptees', *Centre for Economic Performance*, (2015) Discussion Paper No. 1324.
8. www.chla.org/kids-n-fitness
9. www.brightbodies.org
10. <https://go4fun.com.au>
11. Websley, W, et al, 'Process Evaluation of an Up-Scaled Community Based Child Obesity Treatment program: NSWGo4Fun', <http://bmcpublichealth.biomedicalcentral.com/articles/10.1186/1471-2458-14-140>.
12. 'Gestational Diabetes', Mayo Clinic, <http://mayoclinic.org/diseases-conditions/gestational-diabetes/basics/risk-factors>.



13. Boney, C M, et al, 'Metabolic Syndrome in Childhood: Association with Birth Weight, Maternal obesity and gestational Diabetes Mellitus', *Pediatrics*, vol 115, issue 3 (2005), pp. 1-13.