

INQUIRY INTO INQUIRY INTO CHILDHOOD OVERWEIGHT AND OBESITY

Organisation: Centre of Research Excellence in the Early Prevention of Obesity
in Childhood - The University of Sydney

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NSW Legislative Council's Standing Committee on Social Issues
Parliament House
6 Macquarie Street
Sydney
NSW 2000

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**Submission to the NSW Legislative Council's Standing Committee on Social issues:
Inquiry in Childhood Overweight and Obesity from the Centre of Research
Excellence in the Early Prevention of Obesity in Childhood**

Dear Committee Members,

We welcome the opportunity to comment on the NSW Legislative Council's Standing Committee on Social Issues inquiry in childhood overweight and obesity.

We recognise and appreciate that the NSW Premier has prioritised tackling childhood obesity as one of the NSW Premier's Priorities and in doing so the NSW Government has recognised the substantial health and economic importance of this issue. Meeting the NSW Government target to reduce child overweight and obesity by 5% within 10 years (by 2025) will require *substantial* investment and innovative approaches.

Further, childhood obesity is a complex problem and no single intervention, program or policy is likely to significantly reduce the impact. The focus of our submission and our research is early childhood, which is a unique period and opportunity for action, but we believe preventive efforts are needed throughout childhood. A comprehensive, systematic and sustained approach is needed to support children and families to be healthy and active throughout life.

Who we are:

The Centre of Research Excellence in Early Prevention of Obesity in Childhood (CRE-EPOCH) was formed in early 2016 and is funded by the National Health and Medical Research Council. Briefly, we are a broad collaboration of childhood obesity researchers, practitioners and government representatives from universities within Australia and overseas with broad-ranging expertise including: paediatrics, public health nutrition, epidemiology, physical activity research, health economics, health service delivery, nutrition and dietetics and government policy. Our institutions include The University of Sydney, Deakin University, Queensland University of Technology, The University of South Australia, The University of Otago, The University of Technology, Sydney and the University of Warwick UK.

The main aim our work is to **reduce the prevalence of obesity and obesity-related behaviours in the first five years of life in order to transform the health trajectories of the next generation.** To do this, our work aims to provide the best evidence about interventions to prevent obesity in early childhood at a population level, including the cost effectiveness of these interventions and how they can be effectively up-scaled to reach the populations most at risk. This focus on gathering evidence for prevention and scalability is central to our work. Detailed information about our work can be found at www.earlychildhoodobesity.com

What we do:

Our work plan over the next 5 years includes:

- analysing data from intervention trials, including shared data from the first high-quality early childhood obesity prevention randomised controlled trials to have been conducted internationally
- developing new methods and tools to monitor diet, physical activity, sleep and sedentary across this age spectrum
- assessing the cost-effectiveness of a variety of childhood interventions to prevent obesity
- identifying the factors that promote successful prevention programs implementation, at scale
- accelerating research translation by expediting collaboration and knowledge-exchange between researchers practitioners and policy-makers

We also have a history of working together on a range of projects – for example, we have collaborated on the measurement of nutrition and physical activity in early childhood, health economic analyses, and policy implications of our research. Some of this has been through the internationally unique *Australasian Child & Adolescent Obesity Research Network*, a collaboration established by Professor Louise Baur in 2002.

Our submission is informed by four intervention trials conducted by our team and specifically designed to prevent obesity in early life.

Key issues related to childhood obesity in early life:

- In Australia, recent data show that 21.2% of 2-4yr olds are overweight/obese, including approximately 4.1% who were obese. By age 5 almost one in four children are obese or overweight [1].
- The prevalence of overweight and obesity is strongly determined by socio-economic position such that the least advantaged are the most at risk.
- Parental obesity is also an important factor in predicting childhood obesity, and children of obese parents who themselves were obese in childhood are at particular risk. In addition, gestational weight gain is an important predictor of childhood obesity.

- There is an absence of evidence regarding effective, cost-effective and scalable interventions to prevent obesity in early childhood at a population level.
- The prevention of obesity in the first five years has become a clear focus internationally with the Director General of the World Health Organization establishing a Commission on Ending Childhood Obesity in May 2014 which reported to the World Health Assembly in May 2016. This Commission has a particular focus on obesity prevention in the first years of life [2]. Professor Baur is a member of one of the working parties supporting the Commission.

Major influences in early childhood

Diet: a child's food environment plays a very important role in the development of obesity. In early childhood, parents greatly influence a child's food choices and eating behaviour. Further influences present as children grow, with increased exposure to aggressive advertising and marketing, and the relatively low cost of nutrient poor energy-dense foods also influences eating behaviours.

Physical activity and sedentary behaviours: Activity and play patterns in children have shifted from outdoor play to largely sedentary indoor entertainment, such as online games, access to computers/internet and television.

Why intervene in early childhood?

Our work involves the design, evaluation and implementation of interventions in early childhood (0-5 years). The rationale for intervening in this period is clear:

- As noted around 24% of Australian children are *already* overweight or obese by the time they start school [1]. Waiting until school-age to intervene may be too late [3].
- Many obesity-related behaviours – poor diet quality, decreased physical activity, increased sedentary behaviours and decreased sleep duration – *are established in, and track from, early childhood* [4-6].
- Larger body size and rapid growth in the first two years of life predict the development of obesity, both in later childhood and in adulthood [7].
- Life-course studies suggest that interventions in early life, when biology is most amenable to change, are more likely to have sustained effects on health [8].
- A recently published NSW study found that children aged two to five years old who were obese had 60 per cent higher total healthcare costs and were 2-3 times more likely to be admitted to hospital than healthy weight children. This suggests health impacts of obesity are manifest already in early childhood and that there could be savings in direct healthcare costs if we can prevent obesity early [9].

Our work to date:

A key part of our work plan is informing interventions in early life. In 2009 the investigators of four early prevention trials from Australia and New Zealand came together to form the *Early Prevention of Obesity in Childhood (EPOCH) prospective meta-analysis collaboration* [10]. These four trials are the very first high-quality randomised controlled trials internationally focusing on obesity prevention interventions in the first 2 years after birth. Details of all the trials are below:

1. The *Healthy Beginnings Trial* was a high quality trial (randomised controlled trial - RCT) of a home visiting intervention to new mothers in a socially disadvantaged region of Sydney, which began in late pregnancy and continued to age 2 years [11]. There was a significant improvement in weight status at age 2 years of the children whose mothers received the home visiting intervention compared to those who did not. However, 3 years later, having received no further intervention, there was no difference in weight status between the two groups of children. A further trial - looking at the incorporation of Healthy Beginnings into existing home visiting programs, and also looking at the role of SMS or phone coaching support for new mothers, around infant feeding and healthy growth - will commence soon in Sydney Local Health District and other LHDs.
2. The Infant Feeding Activity and Nutrition Trial (*InFANT*) Program, based in Melbourne, was a cluster RCT of anticipatory guidance and discussion provided to universally run first time parent groups, running from when the child was aged 3 to 18 months [12]. This program is currently being scaled up within Victoria [13].
3. *NOURISH*, based in Brisbane and Adelaide, was an RCT of two modules of anticipatory guidance via orchestrated parent groups, occurring when the child was aged 4-7 months and then 13-16 months [14].
4. The Prevention of Obesity in Infancy (*POI.nz*) study was a four arm RCT involving additional parental support (including home visits) around Food, Activity & Breastfeeding, or Sleep, or a combination of both, and provided from late pregnancy to when the child is aged 2 years [15].

Collectively the researchers of these trials agreed to share data from the four separate trials, to determine if innovative interventions to prevent childhood obesity influence BMI at ages 18-24 months.

To date, we have shown that, compared with usual care, **early childhood interventions lead to improvements in body mass index (BMI) at ages 18-24 months**, and result in increased breastfeeding duration and a reduction in TV viewing [16]. This approach, involving the largest trials in the 0-2 age group (total number of families over 2000), remains a world first.

Common components of these programs include:

- Anticipatory guidance and support for parents using home visiting or parents' groups

- Detailed advice related to nutrition, including the promotion and support of breastfeeding and appropriate infant feeding, guidance on when to introduce solids and the *what, when and how* of feeding
- Advice on parenting that includes recognition of a child's hunger and satiety cues and the development of feeding practices that are protective for obesity (reduction of overfeeding for example)
- Advice on promoting child sleep and active play (e.g. Tummy time) and limiting screen time.

The future: We intend over the next four years to address key knowledge gaps for early life obesity prevention. These include:

1. In obesity prevention interventions in children aged 0-5 years, *what are the most effective intervention components, how do they work, under what circumstances, and for whom?*
2. In order to understand changes in obesity risk, and to determine whether interventions are effective or not, it is important to *monitor changes in obesity-related behaviours*. This is very difficult in early childhood: there are large variations in activity, sleep and diet across very narrow age bands; and existing measurement tools are cost- and time-intensive for users. Consequently, data quality can be poor. So, *how can obesity-related behaviours in this age group be most easily, rapidly and accurately monitored in practice and policy settings?*
3. Very few obesity preventions in early childhood have been subjected to *economic evaluation*, and yet information on cost-effectiveness, equity, affordability, implementation feasibility, acceptability, sustainability and scalability are all vital to decisions about program implementation. *What are the most cost-effective interventions for preventing obesity in childhood and what are the costs of implementing at scale?*
4. Our knowledge of how to *scale up obesity prevention programs* to a point where they will have population health impact is limited. Scaling up programs and translating research into practice requires an understanding of the policy context, available policy levers, and how to engage practitioners and consumers in this process. *What are the factors that promote successful "real world" translation early childhood obesity prevention strategies?*

Key recommendations for the NSW Legislative Council's Standing Committee on Social issues:

Our recommendations are informed by the socio-ecological model, a framework that is often used in order to address and understand the complex issues of overweight and obesity. In this framework there are multiple levels of influence, and effective prevention programs need to address each of these levels. These include individual factors (knowledge, attitudes), interpersonal or group factors (families, friends and social networks), organisational factors (day care centres, social institutions), community factors (relationships between organisations), and public policy or macro-level factors (state laws and regulations).

Our key recommendations for the committee include:

Strategies specifically focusing on pregnancy and early childhood:

- 1 Ensure appropriate nutrition guidance and advice are provided for both prospective mothers and fathers before conception and during pregnancy. This includes, monitoring and managing appropriate gestational weight gain.
- 2 Implementing measures to support, protect and promote breastfeeding for the first year of life and beyond. This will be further informed from our research on early intervention trials.
- 3 Support for new parents and detailed and consistent advice on nutrition, physical activity, sleep, and screen time implemented using new technologies which can be designed to reach vulnerable populations.
- 4 Ensure that early childhood settings provide healthful food and physical activity environments.
- 5 Ensure that health professionals (doctors, nurses, allied health professionals) involved in the care of young children are well-trained in the assessment of healthy growth and the provision of detailed and consistent advice on nutrition, physical activity, sleep, and screen time. Our work in NSW has shown that young children 0-2 years visit a primary health care professional on average once per month [17] making them ideally placed as first point of care in obesity prevention.
- 6 Increased surveillance of children's measured height and weight to allow monitoring of progress at a state and national level [18].

We also recommend a complementary range of other strategies aimed at the broader environment in which young children live, play and go to school:

- 7 Reducing children's exposure to sugar sweetened beverages in particular using bold measures such as tax on sugar-sweetened beverages [19].
- 8 Take steps to effectively reduce the marketing of foods and sugar sweetened beverages to children, particularly marketing to children through new media [20].
- 9 Mandatory nutrition labelling of restaurant foods [21].

We have attached the **WHO Report of the Commission on Ending Childhood Obesity [2]** which has further detailed international recommendations around these topics.

Concluding remarks

Our Centre of Research Excellence in Early Childhood Obesity Prevention will make a real impact on finding and implementing policy solutions for the prevention of obesity in the next generation of children.

We are happy to share information with NSW Legislative Council's Standing Committee on Social Issues as it becomes available in order to expedite the exchange of information and translation of some of our findings into practice.

Yours sincerely,

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Professor Karen Campbell, Deputy Director of the CRE-EPOCH (Deakin University;

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For the CRE-EPOCH investigators

www.earlychildhoodobesity.com

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