

INQUIRY INTO CHILDHOOD OVERWEIGHT AND OBESITY

Organisation: University of Wollongong

Date received: 12 September 2016

OBESITY PREVENTION IN EARLY CHILDHOOD

Introduction and background

Early Start is a unique combination of academic, tertiary education and community outreach initiatives, brought together to support and enhance the ways in which people care for and work with children. The \$44 million initiative at the University of Wollongong (UOW) officially opened in July 2015 and comprises an 8800m² facility which includes 1000m² of research space, 2600m² for teaching and learning, and Australia's first Children's Discovery Space. The four main elements of the Early Start initiative, are closely interwoven and overlap, in a deliberate effort to capitalise on our concentration of expertise and drive innovation. These are:

- The **Early Start Research Institute** – 135 researchers and PhD students investigating real life challenges, with potential to make a difference to the lives of children in Australia and around the world.
- The **Early Start Engagement Centres** – we have partnered with 41 early childhood education and care centres in regional, rural and remote communities across NSW. This unique network allows our researchers to understand first-hand the challenges of growing up in disadvantage, and created opportunities for innovation to be pioneered where it is needed most. All these Centres are in areas of social and economic disadvantage with 35% of the children who attend from Aboriginal backgrounds. The current prevalence of overweight and obesity is 20% (equal to state figures).
- Our **Early Years Education** – the next generation of early childhood teachers are being trained at UOW, with cutting-edge academic programs influenced by world-leading researchers and offering unique opportunities for students to gain real world experience.
- The **Early Start Discovery Space** – a purpose-build, hands-on learning space that allows children, carers and educators to explore, create and play together alongside state-of-the-art research and teaching facilities.

Current Obesity Prevention work includes:

1. Jump Start. This is an NHMRC-funded RCT involving 3-5 year-old children and their families and educators from 43 early childhood centres across NSW. Intervention centres receive extensive educator professional development in the area of promoting motor and physical development (a key domain of school readiness) over an 18-month period. Baseline measures were collected mid-2015 and final data collection will occur at the end of 2016.
2. Time2BHealthy. We have developed an online program for parents of pre-school-aged children who are overweight/obese or at-risk of becoming overweight. It contains 6 modules covering key behaviours of healthy eating, physical activity, screen time and sleep. Embedded within the program are behavior change strategies around goal setting and self-monitoring. The program can be accessed by parents at a time and location convenient to their lifestyle, which is especially helpful for families in rural and remote locations. It also contains a closed Facebook group to provide social support for parents. The program has demonstrated feasibility and acceptability among parents and is currently being evaluated in an efficacy trial with 160 parents.
3. Koori Kids Club: This is an afterschool program for Aboriginal children aged 8-12 years. It uses Aboriginal mentors to teach children cultural connectedness to country using activities that, also indirectly promote physical activity and healthy eating and limit screen time (referred to as a stealth intervention). We are currently piloting this work with 80 children from four communities on the South Coast of NSW.
4. Get Up: This is an ARC-funded RCT in 30 long day care centres in NSW. It targets reducing total and prolonged sitting time among toddlers while at day care using an evidence-based professional development program for educators. Current data show toddlers sit for 50% of their time at day care (excluding napping). High levels of sitting have been linked with overweight in older age groups, reinforcing the importance of commencing preventative work early in life. Data have been collected on over 300 toddlers with the intervention commencing late August 2016.
5. Let's Play Let's Eat: This is a community-based program in collaboration with Family Services Illawarra. Families undertake an 8-week program aimed at: a) building parent-child attachment through play in the Early Start Discovery Space, b) building life skills in cooking healthy nutritious meals on a budget in the food skills kitchen by taking the parents away from the group to attend these cooking classes, and c) modelling participation by parents and children in a meal setting by bringing the group back together to eat the meal cooked at a table set with cutlery, cups etc.

Proposed work over next three years

1. Obesity prevention in toddlers. We have developed and pilot tested several single-setting interventions targeting key weight-related behaviours whilst overcoming barriers to implementation and sustainability in childcare and home environments. This project aims to bring each of these components together in an integrated multilevel, multi-site, multi-setting approach that has the potential to decrease the prevalence of overweight/obesity among 2-4 year olds. Our primary hypothesis is that, compared with control services, intervention services will show higher quality nutrition, physical activity, sedentary behaviour and sleep environments. We also hypothesise more favourable changes in children's BMI, physical activity, sedentary behaviour and sleep. The intervention will be based on Social Cognitive Theory and incorporate a gross motor development program, healthy eating strategy, approach to reduce screen time and sitting, and guidelines for promoting healthy sleep; along with a home-based component. Outcome will be assessed at baseline, 15- and 30-months.
2. Community-based weight management program among 3-7 year old children and their families. We have assembled a multi-disciplinary team comprising a paediatrician from the ISLHD, local GPs, dietitians, psychologists, and experts in physical activity, screen time and sleep in young children. We plan to use the facilities at UOW to run a community-based paediatric weight management control program for young children. This would target overweight children who are too young for the Go4Fun program currently run by NSW Health. This state-of-the-art behavioural weight control program will be modeled off the Stanford program developed by Professor Thomas Robinson (current Fulbright Fellow hosted by UOW and Children's Hospital Westmead and Visiting Fellow at Early Start). It will incorporate an afternoon group physical activity program for the children along with a family-based behavioural intervention. A unique feature of the program is the unique facilities of Early Start and the Illawarra Health and Medical Research Institute at UOW. This includes a designated activity space for children (away from the public but easy for families to access and park); commercial kitchen and dining room where healthy food preparation, cooking, and eating together can be modeled and participated in by parent and child; consultation rooms for paediatricians and GPs, and blood collection and storage facilities.

We have funding to run a feasibility trial of this program over the next 12 months (first generation program) and are seeking funding for second-generation programs that would seek to test the efficacy of the program over a longer period of time and with more families.

3. Future Learn MOOC (Massive Open Online Course).
In development: <https://www.futurelearn.com/courses/childhood-obesity>
An academic team is currently writing a MOOC for Future Learn on Obesity Prevention in young children. This course will start on the 5th December 2016 and provide the public with evidence-guided information in a highly stimulating and visual way. Based on previous MOOCs written by UOW academics we are anticipating more than 7,000 participants from around the world.

Key conclusions

There are two innovative aspects of Early Start's program of research: first, our focus on young children, especially 2-7 year-olds, which is a current gap in obesity prevention programs in NSW; second, our programs will reach into disadvantaged communities – many of which are in Aboriginal, regional and remote areas – using the unique technological infrastructure available through the Early Start Facility. Throughout the facility are state-of-the-art videoconferencing capabilities, delivered through "COWS" (Computers on Wheels). These are large (55-inch) interactive touch screen panels with integrated cameras mounted on a moveable trolley which can be wheeled from room to room. Using software such as Adobe Connect Lounge we are able to connect interactively, in high resolution (full 1080p display), and synchronously with up to 10 community sites such as schools and childcare services, to conduct professional development with teachers and educators, and to work with parents, students and other members of the community.

Early Start's vision is to use this technology and infrastructure to work with childcare services, schools, and other settings (e.g., after school centres) in disadvantaged regional and remote, including Aboriginal communities, to better prevent and manage obesity in their settings. Up to now, such interactions would have required face-to-face visits which, given the distances involved, would have been costly and unsustainable. The technologically-supported delivery model developed at Early Start has considerable advantage over other online platforms in that it is interactive with communication occurring in "real time".