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Mr Keir Delaney
The Secretary
Legislative Council Environment and Planning Committee
Parliament House
Spring St
Melbourne Vic 3002
keir.delaney@parliament.vic.gov.au

Dear Mr Delaney

Re: Inquiry into environmental design and public health

Deakin University's Centre for Physical Activity and Nutrition Research (C-PAN) is a multi-disciplinary research centre recognised internationally for its expertise in nutrition, physical activity, sedentary behaviour and obesity. C-PAN has extensive research knowledge in the area of environmental design and public health, from both a nutrition and physical activity perspective.

Attached to this letter is a brief submission for the committee's consideration.

I or my colleagues would be very happy to provide further information to the Committee if desired on any of the aspects raised in this submission, or to provide advice on the available research in this area.

I can be contacted on the details provided above.

Yours sincerely

A handwritten signature in blue ink that reads 'David Crawford'.

David Crawford
Alfred Deakin Professor
Director, Centre for Physical Activity and Nutrition Research
Head, School of Exercise and Nutrition Sciences

Inquiry into Environmental Design and Public Health - Submission from Deakin University's Centre for Physical Activity and Nutrition Research (C-PAN)

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The environment in which we live is an important contributor to our health. The AIHW has recently released a report compiling evidence on the relationship between health and a broad range of environmental factors (AIHW 2011). The report shows that the environment can influence physical and mental health both positively and negatively, and that there are ways to make a difference.

Terms of reference 1: Review the evidence of the contribution of the natural and built environments to the promotion of health and well being

It is well documented that participation in physical activity and more recently, reduction of sedentary time has many health benefits. Research also shows that the environment can have a significant impact on physical activity and sedentary behaviours.

A couple of examples of this include:

Physical infrastructure of residential streets and neighbourhoods.

Children nowadays are spending less time playing outdoors or walking/cycling in their neighbourhoods. A major reason for this is parental concern about road safety, resulting in parents placing restrictions on their children's opportunities to be physically active (Carver et al., 2008a; Hillman et al., 1990). This in turn results in lower physical activity levels among children and adolescents (Carver et al., 2010a). Research also shows that the design of the neighbourhood impacts upon adult physical activity opportunities.

It is vital for residential streets to be designed to support population activity rather than merely be car-dominant environments. There is a need to further investigate how to improve the safety of residential streets so that they are settings for people to walk, cycle and play. It is worth evaluating (through surveys and observational studies) whether particular road safety measures or physical infrastructure in residential areas result in increases in active transport (i.e. walking or cycling for transport), and recreational activity including outdoor play.

Research by our team at Deakin University has found that physical infrastructure designed to calm traffic is important for children's and adolescents' physical activity. In particular the presence of speed humps, traffic/pedestrian lights and intersections is associated with increased physical activity. Furthermore, access to walking tracks is related to increased participation in active transport, especially among adolescent girls (Carver et al, 2008b; Carver et al, 2010b), for whom low levels of physical activity have been reported globally (Van Mechelen & Kemper, 1995; Boreham et al., 2002; Kimm et al., 2005).

Physical infrastructure designed to improve road safety should be considered to promote physical activity among the entire community.

Design of public open spaces

Existing evidence demonstrates that public open spaces provide important opportunities for people of all ages to engage in physical activity.

Adults with better perceived access to public open spaces have shown enhanced physical and mental health. Our work shows that children who spend more time outdoors have also been shown to engage in higher levels of physical activity and have a lower prevalence of overweight and obesity (Cleland et al. 2008).

Specific features of public open spaces such as walking paths may have implications for park-based physical activity among adults, children and adolescents. Research by our team has shown the presence of particular features in parks (i.e. playgrounds, trees providing shade and signage regarding dogs) to be important for children's physical activity (Timperio et al 2008).

Research by our team has also shown public open spaces in disadvantaged neighbourhoods in Victoria to be of a poorer quality compared with parks in less disadvantaged neighbourhoods (Crawford et al 2008).

Additionally, our research has shown that park features are linked to the amount of time children spend in screen-time. For example, we found that children who have a larger sized park near home and who have a water feature in the park located near home spend less time watching television and playing computer games than children who do not have these features in the park closest to their home (Veitch et al 2011).

Natural experiments are a top research priority for detecting causality between the built environment and physical activity, for growing evidence of environmental determinants of physical activity, and for identifying effective environmental interventions and policies to promote physical activity (Sallis et al 2009).

Research in this area is scarce and natural experiments involving public open spaces have rarely been conducted due to the substantial financial costs and logistical challenges of making major modifications to the built environment. A recent natural experiment study conducted in Victoria by our team showed that park refurbishment significantly increased park use and physical activity undertaken within the park for local residents of all ages. This evidence demonstrates that improving park design has the potential to improve health outcomes.

Understanding how park design will attract users, optimise usage, and encourage physical activity among park users is essential when developing new public open spaces and also for the refurbishment of existing parks.

The built environment potentially also has an impact on health from a nutrition perspective. The existing evidence for the role of food environments as an influence on dietary behaviours remains inconsistent. However, new research drawing on methodological and conceptual advances in this field will greatly contribute to the existing evidence base.

It is important for the Committee to be aware that the evidence needs to be interpreted as context-specific and that findings from other countries are not necessarily applicable in Australia. Likewise findings related to urban environments may not be transferable to a rural context.

Terms of reference 2: Identify and report on those elements of environmental planning and design which provide the most promising opportunities for improving health outcomes in Victoria

To benefit the entire community it is important to design the built environment with a view to promoting and supporting physical activity and active transport (Aus Govt. Dept. of Health and Ageing, 2010; Sallis & Kerr, 2006).

To encourage active transport, residential areas should be designed to include walkable destinations such as shops, schools, health centres, sports and leisure facilities (Frank et al., 2005). To further support walking and cycling, physical infrastructure such as bike paths and/or lanes, walking tracks and pedestrian crossings are required, as well as traffic-calming measures on residential streets to create pedestrian- and child-friendly environments (Carver et al 2008; Carver et al 2010).

To encourage physical activity, neighbourhoods should include public open spaces that are accessible to all residents and are within walking distance from homes. Public open spaces need to consider safety aspects such as suitable crossings to the park and lighting within the park. Walking paths and water features (presence of lakes or creeks) are important as is the aesthetic appeal. For children, the provision of suitable play spaces should be considered.

It is important to ensure that public open spaces meet the specific needs of users across all age groups (i.e. children and elderly) and also specific target groups in the population such as those living in disadvantaged areas.

Terms of reference 4: Determine opportunities to influence environmental planning and design for health, including consideration of the role of legislation, guidelines, and public-private partnerships, and the costs and benefits of various options

Although limited, there is some evidence demonstrating associations between local neighbourhood food access and eating behaviours. Specifically, a greater presence of fast food outlets may be contributing to higher consumption of these products amongst local residents. Local planning laws should consider the potential health implications of allowing a high density of fast food outlets in areas.

Further work could be requested of local governments to ensure up-to-date mapping of all food outlets within a local government area. This will help identify areas considered 'food deserts'. This may be particularly important for areas where a large proportion of the population may be facing mobility barriers (e.g. elderly, low socioeconomic status that limits access to a motor vehicle) which would further reduce their access to healthy and affordable food.

Terms of reference 5: Provide recommendations for future planning and investment; and that the Committee will consider:

- (a) The effectiveness of the Environments for Health Municipal Public Health Planning Framework;**
- (b) The State Public Health and Wellbeing Act 2008, the Transport Integration Act 2010 and the Planning and Environment Act 1987;**
- (c) International experience such as the World Health Organisation's (WHO) Healthy Cities initiative;**
- (d) The consistency of policy approaches across the Victorian Government to promote health through evidence based environmental planning and design measures; and**
- (e) The role of public open space in promoting health.**

As indicated under the first terms of reference, the design of public open spaces significantly influences physical activity behaviours. Further research involving public open spaces is necessary to better understand the role of parks for promoting health. Further research will greatly contribute to the existing evidence base and will provide evidence of the effectiveness of capital refurbishment of parks on park usage and physical activity. This will inform future park developments and help to design public open spaces that attract users and facilitate greater levels of physical activity.

Summary

Environmental design is an important contributor to physical activity, sedentary and eating behaviours. Many factors within the environment have already been identified as positively impacting upon physical activity and sedentary behaviours. These include the presence of speed humps, traffic/pedestrian lights and intersections, access to walking paths; park features such as playgrounds, trees providing shade, signage regarding dogs and water features; and providing walkable destinations in neighbourhoods.

The design of the built environment in terms of food access and availability is also vital for population health. The presence of various types of food outlets in neighbourhoods needs careful consideration to ensure the population has easy access to outlets providing healthier food choices as opposed to being dominated by fast food outlets.

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