



## Institute for Physical Activity and Nutrition (IPAN), Deakin University: Submission to the Victorian Parliamentary Inquiry into Environmental Infrastructure for Growing Populations

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**Contact:** Associate Professor Jenny Veitch  
+61 3 9251 7723  
[jenny.veitch@deakin.edu.au](mailto:jenny.veitch@deakin.edu.au)

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### About the Institute for Physical Activity and Nutrition

The Institute for Physical Activity and Nutrition (IPAN), welcomes the opportunity to make a submission. IPAN is a world-leading research institute with more than 80 academic members of staff committed to improving health and quality of life in the populations. Our vision is to improve the health of all populations through physical activity and nutrition research excellence. A focus of our work is understanding how the built environment can be designed to support healthy behaviours; the role of parks and green spaces in supporting physical activity and social connections across the lifespan is a large part of our research program.

### Definitions

**Parks:** Our submission will focus on parks, which can be characterised as publicly accessible green spaces, managed by municipal and parks and recreation bodies for various types of use – both passive and active.

**Park availability:** Refers to the presence of any park or green space that exists or is present within a certain distance from where one resides or a particular location.

**Park accessibility:** Refers to the ease of access to a park. An accessible park can be freely reached and safely used without restrictions. It is important to note that a park may be available (i.e. it exists) but not accessible (e.g. due to geographic features, traffic or other barriers).

**Park quality:** Studies have reported that aspects of high-quality parks include: proximal distance; easily accessible; adequate signage; aesthetically-pleasing environment; good upkeep and maintenance; focal points (e.g., trees, seating, paths, nature); and amenities catering to active and passive leisure and social activities.

### **Benefits of visiting parks on health**

Visiting parks has been shown to facilitate a multitude of psychological, physical, and social health benefits. For example, park visitation and exercising in green spaces have been shown to support mood improvement, reduce stress, anxiety and depression, and increase self-esteem and health-related quality of life among youth and adults [1]. Contact with nature can reduce mortality and morbidity in addition to decreasing heart rates, lowering cortisol levels and reducing blood pressure, which may ameliorate the ill effects of stress on health [2]. Parks can mitigate the effects of social isolation by providing a relaxing environment in which to spend time with family and friends, and are a crucial community infrastructure for fostering a sense of community [3]. Access to high-quality parks is vitally important for the health and well-being of individuals, and it will lead to healthier populations. Improving local parks can be a feasible approach to enhancing community health [4].

### **Benefits of visiting parks on physical activity**

Creating cities and environments that facilitate physical activity is a global priority and a key strategic objective of *United Nation's 2030 Agenda for Sustainable Development* [5] and the *World Health Organisation's Global Action Plan on Physical Activity 2018-2030* [6]. Physical activity is a key modifiable risk factor associated with improved physical and psychosocial health and wellbeing amongst youth and adults [7, 8]. Physical inactivity is a global pandemic. Currently in Australia, 70% of children and adolescents and 60% of adults do not do enough physical activity according to government guidelines [9].

Parks can facilitate physical activity as a venue for active recreation through the provision of supportive infrastructure, such as fields, open spaces, paths and playgrounds. Parks can also encourage active travel as parks can often be reached by walking or cycling and can act as a thoroughfare when using active travel to reach other destinations [10]. Visitors to parks are more likely to meet physical activity recommendations compared with non-visitors [11]. In a study of 14 cities in ten countries, for example, the number of parks close to home was positively associated with physical activity among adults [12]. Park availability and accessibility is also associated with more overall physical activity and physical activity in parks among youth [13] and older adults [14].

**Park use:** Despite the many benefits associated with park use, parks are generally under-utilised, and most park visitors engage in low levels of physical activity. Park visitation is particularly low among adolescents and older adults. For example:

- An observation study conducted by our research team in IPAN (Deakin University) showed only 7% of park visitors to be adolescents and 16% older adults [15], with more than 67% of both age groups observed engaging in sedentary activities like sitting and standing when in the park [15]. Similar findings have been observed internationally [16].

**Evidence of changing the park environment:** Natural experiment studies in Australia and the US have shown that investment in park refurbishment has the potential to increase the number of people visiting our parks as well as being a cost-effective means of encouraging visitors to be physically active during park visits [17-20]. This highlights that the features and infrastructure within our parks are critical. For example:

- The *Recording and Evaluating Activity in a Modified Park* study (REVAMP, funded by the Australian Research Council), conducted by our team in IPAN evaluated the impact of the installation of a play-scape (i.e. play and climbing equipment, nature play area, landscaping, sculptures) in a large park located in a low socioeconomic status (SES) neighbourhood of Melbourne. We observed a 176% increase in visitors and a 119% increase in people engaging in physical activity compared to a park that had no changes [18, 21]. This upgrade was also shown to be a cost-effective approach to facilitating increases in physical activity (\$0.58 per metabolic equivalent hours (MET-h) gained per person), demonstrating the potential of parks for facilitating physical activity in the community [22]. You can [watch YouTube](#) for a short overview of REVAMP and a summary report highlighting the study findings can be found here: [https://www.deakin.edu.au/data/assets/pdf\\_file/0019/1313524/REVAMP-Summary-Report.pdf](https://www.deakin.edu.au/data/assets/pdf_file/0019/1313524/REVAMP-Summary-Report.pdf)

- Our research team also examined the impact of a park upgrade (i.e. installation of a modest playground, walking path, landscaping and a fenced dog-off leash area) in a small park in a low SES area of Melbourne. We found a >300% increase in the number of park visitors and >500% increase in the number of people engaging in physical activity compared with a park that underwent no changes [20].

Physical activity is critical to the health of the population. Designing parks that support and encourage park visitors to engage in physical activity is potentially a long-term and sustainable way to increase population-levels of physical activity and improve public health.

### **Importance of park design**

The design features and amenities within parks are paramount for all user groups. There is some evidence that features may be more important than park availability and accessibility [23]. Audits of 317 parks in Melbourne showed children (9-11 years) were more likely to visit parks that were larger and had more sports facilities, playground equipment and comfort amenities (toilets, drinking fountains) than parks closest to home [24]. As children progress through childhood they are more likely to visit parks that are larger and support participation in sport and active recreation [25].

A comprehensive 3-year mixed-methods study (*ProjectPARK*, funded by the Australian Research Council) conducted by our research team (2017-2020) examined the importance of park features for encouraging park visitation, park-based physical activity and social interaction among children, adolescents and older adults living in Melbourne. Our research identified features that should be prioritised in park design and that preferred features varied by age group and gender [26, 27].

### **Differences in quality/availability of parks according to SES area**

Previous research has shown that park facilities in low SES areas are often of lower quality than the facilities in parks in higher SES areas. For example, objective audits of 1497 parks in metropolitan Melbourne found that parks in the highest SES neighbourhoods had more amenities (e.g. picnic tables, drink taps, toilets), shade trees, water features, lighting and signage than parks in lower SES areas [28]. Improving existing parks in deprived areas may help address health inequities.

Research conducted by our team with a sample of children (n=212, 8-12 years) in Melbourne found children from low SES areas had to travel almost 2.5 times the distance to get from home to their closest park compared with children from mid and high SES areas and more than twice the distance to get from home to the park they usually visit compared with children from high SES areas [29].

### **Differences in park features according to urban-rural location**

Research conducted within IPAN involving comprehensive park audits of 433 urban and 195 rural parks in Melbourne showed that park features differ in urban versus rural parks [30]. For example, rural parks scored higher on aesthetics compared to urban parks whereas urban parks scored higher for access, lighting/safety, diversity of play equipment, and were more likely to have paths suitable for walking/cycling and play equipment for older children.

### **Impact of population growth on provision of green spaces**

Natural environments, such as parks and public open green spaces, play an increasingly important role in maintaining liveability. The confluence of rapid population growth, an ageing population, climate change, congestion and housing affordability represent challenges, which are likely to diminish social inclusion and liveability in Australian cities.

The Australian population is estimated to reach 33.6 million by 2040, and two-thirds more people will live in the City of Melbourne alone by 2026, with similar growth expected in other major urban centres across Australia [31]. While the COVID-19 pandemic may have impacted these estimates, recent modelling shows that the Australian population is still expected to reach 32 million by 2040 [32]. As our cities grow and densify, it is critical that parks and green

spaces are protected and remain in the public realm for all to enjoy. Previous studies have reported a number of important environmental benefits associated with well-designed urban parks:

- production of oxygen and absorption of carbon
- reduction of air and water pollution [33]
- regulation of urban heat island/moderation of temperature by providing shade [34]
- noise attenuation [35]
- flood mitigation [36]
- maintenance of ecosystem and biodiversity [37]

Parks are therefore critical infrastructure for urban sustainable development to mitigate the harmful environmental degradation caused by intensive urban growth and must be protected from inappropriate development. There is evidence, for example, that green space can be compromised due to city densification processes [38]. The principal planning strategies for urban densification in Australia have primarily focused on access to public transport, employment and infrastructure provision [39, 40]. Strong legislation is required to raise the significance and protection of open spaces in planning and renewal.

### **Economic benefits of parks**

The provision of parks has many economic advantages. The economic impact of physical inactivity in Australia is substantial with \$681-\$850 million attributed to annual healthcare costs [41]. The *REVAMP* study (described above) showed a park upgrade to be a cost-effective approach to facilitate increases in physical activity [22]. Park proximity is associated with increased property values, particularly when parks are well kept, attractive and high-quality [42]. A Melbourne study also found that the presence of a local playground within 300m radius added AU\$32k to home values [43]. Well-designed and planned urban green spaces can also help enhance the quality of retail, business and leisure developments, making them more attractive to potential investors and customers [44].

### **The impact of COVID-19 on the importance, use and design of parks**

The *Our Life at Home* study is a longitudinal study being conducted within Deakin University's, Institute for Physical Activity and Nutrition (IPAN). It aims to examine changes in activity-related behaviours, health and wellbeing, and identify the factors that may influence these, as the COVID-19 pandemic progresses and eases.

During May 2020, a sample of 13-75 year-olds across Australia were asked separate questions about their behaviours in a usual week in February (pre-COVID-19), and their behaviours in a usual week over the past month (April-May, first COVID-19 lockdown period). Overall, the percentage of adults visiting parks, the frequency of their park visits, and time spent in parks in a usual week decreased from February to April/May:

- Visited a park: 56% in February, 39% in April/May
- Frequency visited a park: 1.9 times/week in February, 1.0 times/week in April/May
- Total time spent at a park: 38 minutes/week in February, 33 minutes/week in April/May

*However, on average, those who visited parks in April/May visited more frequently and spent ~30 mins more time per week in parks than they did in February (90.8 mins/wk in last month vs 61.1 mins/wk in Feb). Overall, one in three respondents considered local parks to have been an important place for them to be active during the April/May lockdown period. However, only 27-28% considered their local parks to have had the necessary features/amenity to encourage them to visit or be active. This is an important finding and suggests that much more could be done to improve local parks to meet resident's needs.*

## Recommendations

- Ensure that preserving green space in existing neighbourhoods and allocating green space in new neighbourhoods is prioritised.
- Ensure that high-quality parks and green spaces are located in close proximity to people, regardless of where they live. Consider safe access for all users.
- Provide continuous parks that are linked together and lead to destinations to support thoroughfares for walking and cycling (routes and shortcuts).
- Parks need to have safe walking and cycling paths, separated from traffic, to support active travel and reduce car trips.
- Planning teams need to engage with community members to explore availability, accessibility, design and quality issues that are important to all demographic groups.
- Plan for maintenance and regular improvements of green spaces and parks.
- Prioritise park features that meet the needs of all age groups and genders.
- Understand and prioritise park features that encourage park visitation, park-based physical activity and social interaction - improved park design will lead to *more socially connected communities and improved physical and mental well-being for all Australians*.
- To facilitate translation of research evidence to policy and practice, evidence needs to be readily available in a user-friendly format and partnerships between academics and industry stakeholders should be fostered.

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