



Evidence supporting the creation of environments that encourage healthy active living

This evidence brief summarises the literature supporting the creation of environments that encourage healthy active living. It is designed to be used by State and Local Governments and developers, seeking to create new or redevelop existing neighbourhoods. It is structured according to six key components of urban development, and includes a rationale for action and a summary of the key design elements that have demonstrated effectiveness in increasing healthy active living.

The way in which our neighbourhoods and cities are designed can have a profound impact on the degree to which people can live healthy lifestyles (particularly in relation to active living and access to fresh and healthy food). Creating supportive built environments is well recognised as a means of improving health and wellbeing, whilst also contributing to a reduction in traffic congestion and parking problems, and improved social and environmental outcomes.

The Department of Health supports the incorporation of healthy design elements into urban development that encourage healthy active living. Design elements that are supported by current evidence are described below. Further information on each design element and the evidence base supporting these can be found at www.healthyactivebydesign.com.au

Mixed Land Use

The location of different land uses and destinations relative to each other has a large impact on how accessible they are and how people travel to and between different places¹. A good land use mix enables residents to fulfil a variety of daily activities where they live, work and play (e.g. shopping precincts, schools, employment, community spaces, recreation facilities and open spaces). The more of these land uses and destinations that exist within walking distance, the more likely residents are to walk, cycle or use public transport to get to those places^{2, 3}.

Convenient access to fresh and healthy food can improve healthy eating⁴⁻⁶. Land use planning can impact on all parts of the 'paddock to plate' food chain (growing/producing, processing, transporting, distributing and selling food) which in turn affects the supply, access and cost of fresh and healthy food for the community⁷⁻⁹.

Design Elements

- Developments should have a compact mix of land uses and groupings of destinations within walking distance of most residents^{3, 10-15}. Key destinations include retail, fresh and healthy food outlets, public open space, services, sport and recreation, local employment, schools, and community facilities.
- To ensure the availability and accessibility of fresh and nutritious food, arable land needs to be protected and appropriate land should be available for the production, storage, distribution and transportation of food^{11, 16}. On a smaller scale, vacant public land, parks and streetscapes can be used to provide local opportunities to produce locally grown fruit and vegetables.

Activity Centres

Developing activity centres and main streets with a mix of land uses and destinations within walking distance of most residential dwellings can support active transport^{3, 10-15, 17}. The co-location and grouping of destinations within the centre allows for multiple activities to be undertaken which is more conducive for active transport (walking, cycling and public transport). With growth and higher residential density increasingly occurring around the network of activity centres, it is even more critical that access via active transport modes is prioritised.

The provision of fresh and healthy food stores within the mix of destinations in a centre is important to provide access to fresh and healthy food and encourage its consumption^{10-12, 15, 17}. This could be through large supermarkets, grocery stores, smaller fruit and vegetable retailers and farmers markets.

Design elements

- Developments should create activity centres with a mix of land uses and destinations that meet daily living needs within walking distance of most residential dwellings^{3, 11-14} and near public transport.
- Centres should be surrounded by walking, cycling and public transport routes that are put in place early to enable access to key services and destinations from the outset¹⁸.
- Centres should provide a high quality, attractive and safe public realm, and be structured in main street formats that are not dominated by car parking.
- Centres should provide a variety of fresh and nutritious food outlets (supermarkets, grocery stores, farmers markets)^{10-12, 15, 17}.

Movement Network

Active transport is well recognised as a means of improving health and wellbeing, whilst also contributing to a reduction in traffic congestion and parking problems and improved environmental and social outcomes^{19, 20}.

Car-centric infrastructure and urban planning has seen an increasing reliance on the car, associated traffic congestion, less walking and cycling for short trips and increased sedentary behaviour. Creating environments that support replacing short car trips with walking, cycling or public transport (which usually involves a walking or cycling trip to the stops and between destinations) and recreational walking and cycling can reduce overweight and obesity and improve overall health¹⁹.

Local access to a variety of good quality, affordable fresh and healthy food is reliant on the food transport system. As well as costing more, the range and quality of foods available decrease with increasing distance from Perth. A movement network that provides an effective food transport system locally and across the state can help to overcome this.

Design elements

- Developments should provide an accessible, connected movement network integrating walking, cycling and public transport in which neighbourhoods, centres and destinations are connected to each other¹¹⁻¹⁵. Walking and cycling routes should be continuous, connected²¹⁻²⁸, convenient, direct and legible with paths located on at least one, but ideally both sides of the street^{3, 11-13, 21-23, 29-31}.
- Development should provide a safe, functional and attractive environment to support walking, cycling and public transport and maximise pedestrian safety by heightening visibility³², providing safe places to cross streets^{22, 33}, minimising the potential for conflicts with motorists and providing amenities that enhance functionality and comfort^{34, 35}.
- Public transport should be available and accessible and be a viable and attractive alternative transport option. Transit stops should be located within walkable catchments of all residents, workplaces and key destinations along well connected streets and in safe locations^{2, 36, 37}.
- The movement network should integrate appropriate infrastructure for the efficient and timely transport of fresh and healthy food around the state to ensure access by all.

Public Open Space

The provision of high quality attractive parks and public open spaces helps to create an enjoyable and attractive neighbourhood environment in which to walk or cycle^{28, 38}. Parks provide opportunities to be active within them and those living closer to a park or having more parks are more likely to be active^{24, 39-44} and have a healthier weight⁴⁴. Having more parks and a greater public open space area⁴⁵ can also increase physical activity. The inclusion of footpaths, trails, natural play spaces, sport facilities/courts, equipment and playgrounds has been shown to encourage park use and physical activity within parks⁴⁵⁻⁴⁸. This is becoming increasingly important for those living in higher density housing without a private backyard⁴⁹.

Parks can provide opportunities to grow and provide local access to fresh and healthy foods. Community gardens can positively influence a healthy diet, provide greater access to fruit and vegetables^{50, 51}, enable residents to consume more fruit and vegetables⁵² and provide opportunities to be active^{51, 52}. Parks and community gardens also improve social activity and social connections with neighbours^{50, 53} and offer improved mental health outcomes^{51, 52}.

Design elements

- Developments should provide a range of quality public open spaces to contribute towards the recreation, physical activity, health and social needs of the community.
- Parks and open spaces should be located within walking distance of most residents^{3, 11-13}, along connected routes^{3, 12, 13} and be co-located with other community facilities to encourage access by walking or cycling.
- The design of parks and open space and the infrastructure provided within them should cater for a variety of users to undertake a mix of activities that increase physical activity, provide access to healthy nutritious foods (through community gardens) and prevent injury.

Housing Diversity

A combination of higher residential density and mixed land use can increase walking among adults, particularly walking for transport^{24, 41, 49, 54-57}. Higher densities and smaller lot sizes generally result in the creation of more compact uses of land decreasing the distances between destinations. This increases the likelihood that people will walk and cycle for transport,⁵⁸⁻⁶¹ and also provides increased patronage to support local businesses, services and facilities^{3, 62}.

Design elements

- Developments should provide a range of residential lot sizes and choice of housing types within walking distance of key destinations¹⁴.
- Residential densities should be increased in areas within close proximity to mixed use centres, local employment, community facilities and public transport^{3, 14, 29}.
- Lot layouts could be oriented to maximise opportunities for residents to grow fruit and vegetables, especially in areas with limited access to fresh and healthy food.
- *Crime Prevention Through Environmental Design* features should be incorporated to lessen the opportunity for crime and enhance personal safety, traffic safety, property safety and security. This will contribute to streetscape amenity which in turn encourages walking, cycling and use of public spaces^{32, 36}.

Schools

Environments that support children and their parents to walk, cycle or use public transport to get to school increases their physical activity and reduces traffic in the local community⁶³. Living in close proximity to school is one of the most consistent predictors of walking or cycling to school^{33, 64-68}. Infrastructure that maximises connectivity and safety is also critical so the environment surrounding the school must also incorporate connected pathways, traffic management and safe crossings⁶⁹.

Schools grounds are an ideal location for students to achieve part of their daily physical activity needs. The provision of playspaces, sports facilities, line markings for games and grassed areas increases the likelihood that students will be active during recess and lunch⁷⁰⁻⁷³. Enabling community use of these facilities outside of school hours has also been shown to increase the community's physical activity^{74, 75}.

Growing fresh and healthy food through school kitchen gardens can increase children's exposure to fruit and vegetables⁷⁶ and can encourage healthier diets and fruit and vegetable consumption⁷⁶. Extending the school garden to be accessible to the wider community outside of school hours can facilitate shared maintenance and shared benefits.

The food environment and presence of food stores around schools also plays an important role in children's daily exposure of healthy or unhealthy foods, which can influence healthy eating behaviours. Emerging evidence is showing that the closer someone is to fresh and healthy food outlets the more likely they are to consume healthy products⁷⁷.

Design elements

- Developments should locate schools within 800m walkable catchments of most residents that are integrated with connected walking and cycling networks and serviced by public transport routes (where appropriate) to enable students to conveniently and safely access the school via means other than the car³.
- School grounds and facilities should be designed to encourage active and unstructured play during school hours. Site design should enable shared use by the general public outside of school hours.
- End of trip facilities should be provided within schools to encourage walking and cycling to school (e.g. bike racks).
- School grounds could be utilised to grow fresh and healthy food³.
- School car parks and ovals could be designed to host farmers markets to enable fresh and healthy food to be sold locally, particularly in areas underserved by fresh and healthy food stores.
- Consider limiting the location of fast food outlets in close proximity of schools⁷⁸.

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