

Walking Proof Points

The Benefits of Everyday Walking in Aotearoa New Zealand

A summary of the key benefits of walking for transport and leisure in Aotearoa New Zealand. This review includes both local and international research, and highlights local research wherever possible.

Prepared for Waka Kotahi by Dr Kirsty Wild. Thanks to Prof Alistair Woodward and Prof Karen Witten. You are welcome to share this document. Copyright: Attribution CC BY. How To Cite This Document: Wild, K. 2023. *Walking Proof Points*. Ver 1. Auckland: Waka Kotahi.

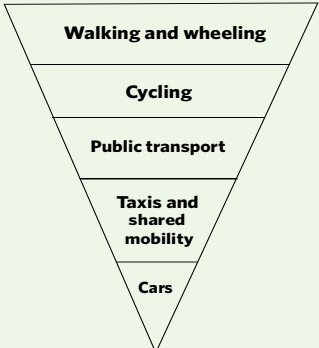
	Proof points	Study	Detail	Summary of findings
Walking is the most important form of transport: our 'lifeline' mobility	Walking is our basic or lifeline mobility. Walking (or moving using mobility aids) is our most inclusive and foundational form of movement.	<i>Littman, T. (2022) Economic Value of Walkability. Victoria Transport Policy Institute: Victoria, BC.</i>	<p>INTERNATIONAL Walking is our basic or 'lifeline' mobility. It is the lowest cost, most accessible means people have to move in order to meet their basic needs for food, medical care, social connection, employment, and voting. Walking is particularly critical as a form of lifeline mobility for marginalised groups, who generally have less access to cars; such as people living on a low-income, women, older people, younger people, and disabled people.</p> <p>Walking is also essential to resilience and security: providing critical opportunities for movement and escape during times of social unrest, war and natural disasters.</p>	Walking is our most important form of transport. It is our 'lifeline' mobility
		<i>Banister, D. (2008) The sustainable mobility paradigm. Transport Policy, 15(2): 73-80.</i>	<p>INTERNATIONAL As our most accessible and affordable form of transport, walking is positioned as the base or 'foundational' layer of the so-called 'healthy transport pyramid' (also sometimes called the 'sustainable transport pyramid'). There are a number of different versions of this planning tool: all prioritise walking (and wheeling) as the most critical component of our transport network. This pyramid is widely used in transport planning. The Scottish Transport Strategy, for instance, positions the healthy/sustainable transport pyramid as a key investment prioritisation tool.</p> <div style="text-align: center;">  </div>	

Fig. 1. The healthy transport pyramid

	Proof points	Study	Detail	Summary of findings
Walking is the most inclusive form of exercise for adults	Walking is the most inclusive form of exercise	<i>Morris JN, Hardman AE. Walking to Health. Sports Med. (1997) May; 23(5): 306-32</i>	INTERNATIONAL A review paper from leading epidemiologist Jerry Morris. Morris describes walking as the most accessible and thus most important opportunity for exercise within populations: it is the type of exercise undertaken by the most diverse group of people, including women, children and older people.	Walking is the most popular and inclusive form of exercise for adults in Aotearoa.
	Walking is the most popular form of physical activity amongst adults in Aotearoa.	<i>Sport New Zealand. (2020). Active NZ 2019 Participation Report. Wellington: Sport NZ.</i>	AOTEAROA This regular survey consistently finds that walking is the most popular form of physical activity for adults. In the last week, the survey found that 57% of adults reported walking for exercise. Walking is the most popular form of physical activity across all adult age groups, genders, and ethnic groups. Walking is twice as popular as any other type of physical activity (The next most popular form of physical activity for adults is gardening, on 23%).	
	Walking is particularly important for healthy ageing	<i>Morris JN, Hardman AE. (1997) Walking to Health. Sports Med. May; 23(5): 306-32</i>	INTERNATIONAL Walking is the most accessible form of exercise for older people. It keeps us healthy and helps to prevent falls as we age. Unlike most other forms of exercise, walking capacity doesn't really drop off noticeably in middle age. There is also good evidence that walking helps us maintain a combination of both leg muscle strength and bone density. This combination is important for preventing falls, which are a major cause of injury, hospitalisation and poor quality of life as we age.	

	Proof points	Study	Detail	Summary of findings
Walking protects our physical health	Walking protects our physical health	<i>Kelly, P., Kahlmeier, S., Götschi, T. et al. (2014) Systematic review and meta-analysis of reduction in all-cause mortality from walking and cycling and shape of dose response relationship. Int J Behav Nutr Phys Act 11, 132.</i>	INTERNATIONAL This study found that regular walking reduces your risk of dying prematurely by 11%. The biggest health gains occur in the first period of walking when we move from doing nothing to doing something.	Walking is a good way to look after your physical health
		<i>Saint-Maurice, P. F., Troiano, R. P., Bassett, D. R., Jr, Graubard, B. I., Carlson, S. A.,</i>	INTERNATIONAL In an American study that followed up almost 5000 participants for an average of 10 years, walking was strongly associated with subsequent health. Compared with taking 4000 steps a day, those taking 8000 steps a day experienced	

Walking is the most important opportunity to increase levels of exercise amongst sedentary New Zealanders

Shiroma, E. J., . . .
. Matthews, C. E. (2020).
Association of Daily Step Count and Step Intensity With Mortality Among US Adults. *JAMA*, 323(12), 1151-1160.

Shaw C, Randal E, Keall M, Woodward A. (2018) *Health consequences of transport patterns in New Zealand's largest cities.* *NZ Med J.* Mar 23;131,1472:64-72.

Morris JN, Hardman AE. *Walking to Health.* *Sports Med.* (1997) May; 23(5): 306-32

People who walk regularly rate their overall health more positively.

Avila-Palencia I, Int Panis L, Dons E, Gaupp-Berghausen M, Raser e, Gotschi T, et al. (2018) *the effects of transport mode use on self-perceived health, mental health, and social contact measures: a cross-sectional and longitudinal study.* *Environment international.* 120: 199-206.

half the rate of death from all causes, and mortality amongst those taking 12000 steps a day was reduced by almost two thirds. This analysis adjusted for a large number of possible confounding factors, including smoking status, body mass index and age.

AOTEAROA Wellington has particularly high rates of transport walking (27% of trips), as well as higher rates of public transport use. This paper explores the health impact for Auckland, Tauranga, Hamilton, Christchurch and Dunedin if they had similar rates of sustainable mode use (walking, PT, cycling) as Wellington. There would be considerable health benefits for all cities – primarily due to increased physical activity, but also due to reduced air pollution and road deaths. Under the 'Wellington scenario', Auckland would save 57 lives a year, Tauranga 49 lives, Hamilton 51 lives, Christchurch 31 lives, and Dunedin 13 lives annually.

INTERNATIONAL Walking is identified as the primary means of increasing physical activity amongst sedentary populations. Morris describes walking as the closest thing to 'perfect exercise': it is free, can be undertaken close to home, is low-impact and low-injury, requires no equipment or training, and is generally experienced as enjoyable. Commuter walking is considered to be a particularly important opportunity for sedentary people to start exercising because it is exercise that can fit within existing activity routines (commuting). Lack of time for additional exercise activities is reported as the number one barrier to exercise amongst both adults (57%) and young people (39%) in Aotearoa (Sport NZ, 2020).

INTERNATIONAL People who walk frequently have better self-perceived health: i.e. they rate their own health more positively. A large study across seven European cities.

	Proof points	Study	Detail	Summary of findings
<p>Walking builds social connection</p>	<p>Walking is good for building and maintaining social trust within communities.</p> <p>Walking through unfamiliar neighbourhoods tends to encourage more positive evaluations of people who live there, compared to driving through these neighbourhoods.</p>	<p><i>Gatersleben B, Murtagh N, (2013) White E. Hoody, goody or buddy? How travel mode affects social perceptions in urban neighbourhoods . Transportation Research Part F: Traffic Psychology and Behaviour. 21:219- 30.</i></p>	<p>INTERNATIONAL This experimental research showed that people make more generous and positive judgements about people in neighbourhoods when they are walking than when they are in a car. They hypothesise that the more detailed observation enabled by walking helps people make more accurate judgements about the safety of people and activities in their neighbourhood.</p>	<p>Walking builds friendly neighbourhoods</p>
	<p>Walking increases social connection within neighbourhoods</p>	<p><i>Wild K. (2020). Life in a low-traffic neighbourhood. Auckland: Women in Urbanism Aotearoa; 2020.</i></p>	<p>AOTEAROA Results from this national online qualitative survey during the first Covid-19 lockdown in Aotearoa showed that people were walking more; and that they liked that walking enabled them to see and connect (from a safe distance) with their neighbours more. It was common for participants to say that increased walking during lockdown was making their neighbourhood a friendlier and more enjoyable place to live.</p>	
	<p>Children particularly value the social encounters they have with both new and familiar people through neighbourhood walking.</p>	<p><i>Smith, M., Donnellan, N., Zhao, J., Egli, V., Ma, C. and Clark, T. (2022) Children's perceptions of neighbourhoods during Covid-19 lockdown in Aotearoa New Zealand. Children's Geographies, pp. 1-15</i></p> <p><i>Ergler, D. R.; Freeman, C.; and Guiney, T. (2021) Walking with pre-school-aged children to explore their local wellbeing affordances. Geographical Research. 59(1): 118-135.</i></p>	<p>AOTEAROA This study on the experiences of New Zealand children during the first Covid-19 lockdowns showed that less traffic and greater opportunities to walk and bike were highly valued by kids. Children particularly enjoyed walking with family; walking as a way to experience nature and hear birdsong; and walking as a way to meet and connect with neighbours (from a safe distance).</p> <p>DUNEDIN A study involving neighbourhood walk-along interviews with preschool children. This study found that encounters with both close and distant neighbours was one of the things children particularly valued about walking; and that these encounters help young children to develop a sense that they are welcome in and 'belong' to their community.</p>	

Walking supports child health	Proof points	Study	Detail	Summary of findings
	Children's walking plays an important role in helping communities to develop shared landmarks and stories about their neighbourhoods.	Horton, J., Christensen, P., Kraftl, P., & Hadfield-Hill, S. (2014). 'Walking ... just walking': how children and young people's everyday pedestrian practices matter. <i>Social & Cultural Geography</i> , 15(1), 94-115.	INTERNATIONAL In this research with 175 9-16 year olds in south-east England, the authors highlight the role that children's walking plays in helping communities in new developments to establish place names, shared landmarks (e.g. the 'haunted house' on the corner), and stories about neighbourhoods. They concluded that both children and adults rely on children's neighbourhood walking stories to develop a shared sense of community history and belonging.	
	Walking journeys provide important play opportunities for children	Horton, J., Christensen, P., Kraftl, P., & Hadfield-Hill, S. (2014). 'Walking ... just walking': how children and young people's everyday pedestrian practices matter. <i>Social & Cultural Geography</i> , 15(1), 94-115.	INTERNATIONAL This study with 9-16 year olds found that walking amongst children provides important opportunities for everyday play. Children often incorporate games into their walking, including social games, and walking represents an especially important play opportunity for children who do not have access to high quality play spaces.	Walking is important to kids
	Walking provides important opportunities for spatial and environmental learning	Ergler, D. R.; Freeman, C.; and Guiney, T. (2021) <i>Walking with pre-school-aged children to explore their local wellbeing affordances. Geographical Research</i> . 59(1): 118-135.	DUNEDIN This study with pre-schoolers showed that neighbourhood walking is a very multi-sensory experience for children; and they like the opportunities it provides to touch, observe and interact with their local environments. Walking provides important opportunities for learning about the world, conducting 'experiments', as well as learning to manage risk.	
	Walking journeys provide valued social opportunities for children	Mitchell, H., Kearns, R. A., & Collins, D. C. A. (2007). <i>Nuances of neighbourhood: Children's perceptions of the space between home and school in Auckland, New Zealand. Geoforum</i> , 38(4), 614-627.	AUCKLAND This research explored primary school children's experiences travelling between school and home in three Auckland neighbourhoods. Children who walked to school were the most positive about their school journeys. Kids who walked reported that they particularly valued the social benefits of walking. Walking with friends is one of children's favourite things about getting to school on foot.	
	Walking helps children learn how to manage risk	Witten, K., Kearns, R., Carroll, P., & Asiasiga, L. (2019). <i>Children's everyday encounters and affective relations with place: experiences of hyperdiversity in Auckland neighbourhoods. Social & Cultural Geography</i> , 20(9), 1233-1250.	AUCKLAND An exploration of the walking experiences of 253 9-12 year olds living in nine Auckland neighbourhoods (in both the inner city and suburban South Auckland.) The ethnic composition of the participants was very diverse, and a comprehensive mix of methods was used to explore their experiences of independent mobility (trip diaries, accelerometers, GPS, walkalong interviews and focus groups). While children had a mix of positive and negative experiences of independent walking; they valued the opportunities it provided to learn how to manage risks (learning neighbourhood routes, including 'escape routes'). They also liked independent walking as " a chance to hang out with friends, feel happy, make their own decisions and take responsibility for themselves." This study concluded that independent walking is an important part of children feeling confident that they can manage risk in our cities.	

<p>Kids want to be able walk to school</p>	<p><i>Tranter, P., Pawson, E. (2001) Children's access to local environments: A case-study of Christchurch, New Zealand. Local Environment, 6:1, 27-48.</i></p> <p><i>Mitchell, H., Kearns, R. A., & Collins, D. C. A. (2007). Nuances of neighbourhood: Children's perceptions of the space between home and school in Auckland, New Zealand. Geoforum, 38(4), 614-627.</i></p> <p><i>Hinckson, E., (2016) Perceived challenges and facilitators of active travel following implementation of the School Travel-Plan programme in New Zealand children and adolescents. Journal of Transport and Health. 3(3): p. 321-325.</i></p>	<p>AOTEAROA Children who walk to school say they particularly value that walking provides 1) social interaction with friends; and 2) the ability to stop and explore their local environment. Children who are driven to school commonly report that they dislike the way that going in a car restricts your ability to stop and look at things.</p> <p>AOTEAROA This study found that nearly half (45%) of children who were driven to school said they would rather use an active mode. Key reasons for a desire to switch to walking included: being able to see more stuff, spending more time with friends, and a desire to be healthy.</p> <p>AUCKLAND A 2016 AUT University study revealed 96 per cent of children preferred active modes of travel, despite the majority of kids travelling by car to school.</p>	
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	Proof points	Study	Detail	Summary of findings
<p>Walking makes the commute more enjoyable</p>	<p>People who walk to work rate their commute more positively, and are the most likely to describe their commute as 'relaxing'.</p> <p>People who walk to work have high transport satisfaction.</p>	<p><i>Gatersleben B, Uzzell D. (2007) Affective Appraisals of the Daily Commute: Comparing Perceptions of Drivers, Cyclists, Walkers, and Users of Public Transport. Environment and Behavior, 39(3):416-31.</i></p> <p><i>Chatterjee, K., Chng, S., Clark, B., Davis, A., De Vos, J., Ettema, D., . . . Reardon, L. (2019). Commuting and wellbeing: a critical overview of the literature with implications for policy and future research. Transport Reviews, 40(1), 5-34.</i></p> <p><i>Rissel, C Crane M, Wen LM, Greaves S, Standen C. (2016) Satisfaction with</i></p>	<p>INTERNATIONAL This UK study found that people who walk are the most likely to described their commute as 'relaxing'. In comparison, people who cycle were most likely to describe their commute as exciting; those who drive as 'stressful'; and those who use public transport as 'boring'. Seeing scenery and enjoying the overall experience of walking are identified as the best things about getting to work on foot.</p> <p>INTERNATIONAL This review of studies on wellbeing and transport found that people who walk (and bike) to work are consistently shown to have higher commute satisfaction than those who use a car or public transport.</p> <p>INTERNATIONAL This Sydney study found that people who walk to work enjoy their commute more than those who drive or take</p>	<p>Walking is one of the most enjoyable ways to get to work</p>

People who walk regularly report feeling more 'energetic' and less 'tired' than those who drive or use public transport.

People who walk regularly get more contact with friends and family.

Switching from driving or using public transport to walking, improves mental health.

Switching to an active commute reduces the risk and severity of depression

Walking is an important way for people with mental health challenges to look after their health

For older and mobility impaired New Zealanders walking is important for reducing isolation and looking after their physical and mental health

Transport and Enjoyment of the Commute by Commuting Mode in Inner Sydney. Health Promot J. Austr. 27(1):80-83.

Avila-Palencia I, Int Panis L, Dons E, Gaupp-Berghausen M, Raser E, Götschi T, et al. (2018) The effects of transport mode use on self-perceived health, mental health, and social contact measures: A cross-sectional and longitudinal study. Environment International. Nov;120: 199-206.

Martin A, Goryakin Y, Suhrcke M. (2014) Does active commuting improve psychological wellbeing? Longitudinal evidence from eighteen waves of the British Household Panel Survey. Prev Med. 69: 296-303.

Knott, C., Panter, J., Foley, L., & Ogilvie, D (2018). Changes in the mode of travel to work and the severity of depressive symptoms: a longitudinal analysis of UK Biobank. Prev. Med., 112, pp. 61-69

Wild K, Woodward A, Herbert S, Tiatia-Seath J, Collings S, Shaw C, et al. (2020) The relationship between transport and mental health in Aotearoa New Zealand. Auckland: Waka Kotahi, NZ Transport Agency.

Meher, M., Spray, J., Wiles, J., Anderson, A., Willing, E., Witten, K., . . . Ameratunga, S. (2021). Locating transport sector responsibilities for the wellbeing of mobility-challenged people in Aotearoa New Zealand. Wellbeing, Space

public transport. Walkers (49%) and Cyclists (52%) Reported far higher levels of enjoyment from their commute than car drivers (14%) or public transport users (10%).

INTERNATIONAL A large study, across seven European cities. People who walk frequently reported better self-perceived health; higher vitality (they feel more energetic and less tired); and greater contact with friends and family.

INTERNATIONAL A large longitudinal study that showed that psychological wellbeing improved when commuters switched from driving to walking for their commute. This study also showed that wellbeing increased with travel time for walkers, but decreased for drivers; and that people who used car travel were 13% more likely to report being 'constantly' under strain or unable to concentrate' compared to those using active travel modes.

INTERNATIONAL The first study to explore longitudinal associations between changes in travel mode and the severity of depressive symptoms in commuters. Shifting from an inactive to an active commute can reduce symptoms of depression in working adults. Commuters with existing symptoms of depression, and who travel further to work, shifting from active to inactive modes of travel to work may worsen symptoms of depression.

AOTEAROA Interviews with key informants, identified walking as a key activity that helps tāngata whaiora, or people with mental health challenges to maintain good health and recover from periods of unwellness. Walking is central to recovery because it is inexpensive, offers more control over travel conditions than public transport, and provides access to the mood-boosting benefits of physical activity.

AOTEAROA A large qualitative study with ethnically diverse older and mobility impaired Aucklanders. Conducted in nine different languages, 'walk-along' interviews were conducted with 62 participants, including: Pākehā, Māori, Chinese, and Pacific (Cook Island, Samoan, Niuean, Tongan, Tuvaluan, Tokelau, Kiribati) Aucklanders. Walking was identified as an important regular activity for participants. The main benefits were: getting to exercise; mental health benefits from being in nature; social connection; and helping you

<p>For people in low-income households in Aotearoa, walking can be an important way to manage stress, and connect with others and your community.</p>	<p><i>and Society, 2, 100034.</i></p> <p><i>Thorne, R., Faneli, E., Wild, K., Hirsch, L., Raja, A., Witten, K., Mackie, H., and Woodward, A. (2022). Walking and cycling cultures in South Auckland. Auckland: Mackie Research, National Science Challenges.</i></p>	<p>to feel part of your community. Walking (or wheeling) was identified as important for preventing loneliness. For some of the older Māori women, walking was also important for gathering plants for food and crafts (pūhā and harakeke).</p> <p>AOTEAROA This research is based on observation and interview research with people who walk and bike, as well as people who promote walking and biking in two South Auckland communities: Māngere and Ōtara. The research identified a number of key perceived benefits of walking amongst local people: particularly the opportunity to look after your physical health (and manage conditions like diabetes); as well as mental health benefits, including stress relief, getting a break from care responsibilities, social connection, and getting a chance to see what is going on in and 'take care' of your neighbourhood.</p>	
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Walking helps to keep our air and water clean	Proof points	Study	Detail	Summary of findings
	<p>Switching from driving to walking improves air quality.</p>	<p><i>Patel, H., Talbot, N., Salmond, J., Dirks, K., Xie, S., & Davy, P. (2020). Implications for air quality management of changes in air quality during lockdown in Auckland (New Zealand) in response to the 2020 SARS-CoV-2 epidemic. The Science of the total environment, 746</i></p>	<p>AUCKLAND During the first Covid-19 lockdown of 2020, there was a 60-80% reduction in traffic flows across Auckland. This resulted in a 34-57% percent reduction in Nitrogen Dioxide and a 55-75% reduction in Black Carbon, two harmful air pollutants, primarily created through combustion of fossil fuels by motor vehicles.</p> <p>As driving reduced, neighbourhood travel surveys showed a significant increase in walking (from 10% to 42% mode share – according to Bike Auckland’s Big Backyard Bike Count). This ‘natural experiment’ in mode shift shows that harmful air pollution will reduce if New Zealanders walk more and drive less.</p> <p>Air pollution (mostly from vehicle emissions) contributes to 1 in 10 deaths in New Zealand; results in 6,500 hospitalisations for respiratory conditions; 13,200 cases of childhood asthma; and approximately 1.745 million restricted activity days (days on which people could not do normal things due to air pollution). The total social cost of air pollution is currently estimated at \$15.6 billion.</p>	<p>Switching from driving to walking helps to create cleaner air and improve health</p>

Walking brings back the birdsong	Proof points	Study	Detail	Summary of findings
	<p>Traffic noise pollution damages health; and is the major source of noise ‘annoyance’ for urban New Zealanders.</p>	<p><i>Humpheson D, Wareing R. (2019). Evidential basis for community response to land transport noise. Wellington: NZ Transport Agency; 2019.</i></p>	<p>AUCKLAND This research showed that traffic noise was the most significant source of noise pollution for Aucklanders. A third of urban residents reported that they were ‘very’ or ‘extremely’ annoyed by road traffic noise. Chronic traffic noise pollution has been shown to affect sleep; psychological health; and child development and learning; and is a cause of cardiovascular disease. Other New Zealand research has estimated that 59 deaths a year</p>	<p>Reducing driving and increasing neighbourhood walking helps us hear birdsong again</p>

	<p>Reducing driving and increasing walking in neighbourhoods will reduce harmful noise pollution.</p>		<p>can be attributed to traffic noise pollution (Briggs et al. 2015); and that approximately 600,000 New Zealanders experience road traffic noise at levels that damage health, according to noise guidelines set by the WHO (Allan & Humpheson, 2019).</p>	
	<p>Reducing traffic noise pollution in neighbourhoods allows New Zealanders to hear natural sounds like birdsong and human conversation: things they value most about spending time walking in their neighbourhoods.</p>	<p><i>Journée sans voiture à Paris</i>, by Noiseineu. in ARUP Group(2016) <i>Cities Alive: Towards a Walking World</i>. London: ARUP.</p> <p>Wild, K. (2020). <i>Life in a low-traffic neighbourhood</i>. Auckland: Women in Urbanism Aotearoa; 2020.</p>	<p>INTERNATIONAL During the first Paris car-free day, Bruitparif measured an average drop of 3 dB(A) on main roads. On average, car traffic produces 79 decibels of sound, whereas human conversation is 65 (an increase of 10 decibels results in a noise level that is twice as loud).</p> <p>AOTEAROA This qualitative survey during the first Covid-19 lockdown showed that a reduction in traffic noise was one of the most valued aspects of reduced traffic volumes during this time. Participants reported that they felt less stressed, and were more able to hear sounds that they enjoy: particularly birdsong and human sounds, as traffic noise levels dropped.</p>	
	<p>Proof points</p>	<p>Study</p>	<p>Detail</p>	<p>Summary of findings</p>
<p>Walking is climate action</p>	<p>Investing in walking is a cost-effective way to reduce travel emissions</p> <p>Switching from a car to walking helps us to reduce our transport emissions.</p>	<p>Chapman, R., Keall, M., Howden-Chapman, P., Grams, M., Witten, K., and Randal, E. (2018) <i>A cost-benefit analysis of an active travel intervention with health and carbon emission benefits</i>. <i>Int J Environ Res Public Health</i>, 15(5)</p> <p>Brand C, Götschi T, Dons E, Gerike R, Anaya-Boig E, Avila- Palencia I, et al. (2021) <i>The climate change mitigation impacts of active travel: Evidence from a longitudinal panel study in seven European cities</i>. <i>Global Environmental Change</i>. Mar 1;67:102224.</p>	<p>AOTEAROA Health and carbon emission benefits fully justify the investment in active travel (cycling and walking) with a high benefit/cost ratio (over 10:1) (even with conservative valuing of benefits). Reductions in transport- related carbon emissions were estimated and using a discount rate of 3.5%, the estimated benefit/cost ratio was 11:1.</p> <p>INTERNATIONAL Changes in active travel have significant lifecycle carbon emissions benefits. Mobility-related emissions are reduced by 0.4 kg CO2 for each additional walking trip per day, but increased by 2.1 kg CO2 for each additional car trip per day.</p>	<p>Switching from driving to walking helps to reduce transport emissions</p>

	Proof points	Study	Detail	Summary of findings
<p>Walking is good for the economy</p>	<p>The amount of walking, and quality of walking environments has an important impact on the potential for economic development in cities</p>	<p><i>Littman, T. (2022) Economic Value of Walkability. Victoria Transport Policy Institute: Victoria, BC.</i></p>	<p>AOTEAROA This report summarises the research on the economic benefits of walking and walkable environments. Pedestrian environments are identified as a key part of the economic fabric of cities. Key economic benefits of safe, high quality pedestrian environments include: improved employment accessibility for non-drivers (who are more likely to experience economic disadvantage); consumer cost savings (reduced transport costs); improved retail and hospitality spend; and public cost savings (through increased land-use efficiency, and health cost savings associated with increased physical activity).</p>	<p>Walking is good for economic development</p>
	<p>High quality walking environments are important for the success of retail and hospitality businesses.</p>	<p><i>Auckland Council (ND) Share the Wealth: Shared Spaces Make Great Business Places. Auckland: Auckland Council.</i></p>	<p>AUCKLAND This report explores the impacts of the transformation of Fort Street into a 'Shared Space' designed to make it easier and safer to walk in the area. The changes have reduce vehicle volumes by 25%, with a 2-8km/ hour reduction in speed. The number of pedestrians who visit the area has increased by up to 47% during peak hours. 80% of those surveyed felt safer in the area, especially at night. There was a 429% increase in hospitality spending and 47% increase in retail spending.</p>	
	<p>Walking is a quick and efficient way for people to access their local shops, supporting local economic development</p>	<p><i>Fleming T, Turner S, Tarjomi L. (2013) Reallocation of road space. Wellington, NZ: NZ Transport Agency.</i></p>	<p>AOTEAROA Consistent with overseas research, this study showed that safe and attractive walking environments (attractive landscaping, and being able to cross roads easily) were valued and were considered more important than being able to park close by. Sustainable transport users (walk, cycle, skateboard) accounted for 40% of the total spend in the shopping areas (and were 37% of visitors). They visited the areas more frequently, and spent more time there, compared to car drivers.</p>	
	<p>High levels of walking, and walkable environments reduce public spending, by lowering health care costs.</p>	<p><i>Bozovic, T.; Hinckson, E., Stewart, T. and Smith, M. (2021) How street quality influences the walking experiences: an inquiry into the perceptions of adults with diverse ages and disabilities. Journal of Urbanism: International Research on Placemaking and Urban Sustainability.</i></p>	<p>AOTEAROA This study on walking experience amongst adults in Auckland found that convenience was a major reason why people choose walking over other transport modes. Walking was understood to be quicker than taking the bus and a good way to avoid parking stress: especially for short local trips</p>	
		<p><i>Wohlrab, M., Klenk, J., Delgado-Ortiz, L., Chambers, M., Rochester, L., Zuchowski, M., . . . Jaeger, S. U. (2022). The value of walking: a systematic review on mobility and healthcare costs. European Review of Aging and Physical Activity, 19(1), 31.</i></p>	<p>INTERNATIONAL A systematic review of the association between levels of walking and health care costs. The study finds that "the costs of impaired walking ability is a major burden for national health systems"; and that available studies show that regular walking, and especially walking for more than 60 minutes is associated with a decrease in hospital stays and emergency room visits.</p>	

