

ACTIVITY LEVELS AND EXERCISE

What is this?

Physical activity refers to all movement produced by skeletal muscles that increases energy expenditure, whether it is incidental, occupational or recreational. Exercise is physical activity which is usually regular and done with the intention of improving or maintaining physical fitness or health.¹



Why is it important?

Physical activity is protective against heart disease, type 2 diabetes and cancers of the colon, post-menopausal breast, and endometrium.^{2,3} Regular physical activity also can reduce the risk of, or improve outcomes for, high blood pressure, obesity, stroke, depression, osteoporosis, osteoarthritis, and some respiratory conditions.

The New Zealand Ministry of Health recommends that adults do at least 30 minutes of moderate-intensity physical activity (equivalent to brisk walking) on most, if not all, days of the week. It is also recommended that, where possible, vigorous exercise is added for extra fitness and health benefits.⁴

Data

There are two surveys that provide information on activity level that are outlined in this indicator. The 2006/7 New Zealand Health Survey⁵ found that 51.6 % of adults in the Canterbury DHB district achieved the national physical activity guideline compared with 52.1% of adults for New Zealand as a whole.

Active New Zealand Survey 2007/08⁶ showed that the sport, recreation and physical activity profile for the Canterbury West Coast region was similar to the national profile. Walking and gardening were the two most popular sport and recreation activities in the region.

Data from the Active New Zealand survey showed that in comparison with New Zealand adults overall, a similar percentage of adults in the Canterbury West Coast region:

- participated in at least one sport or recreation activity per week (New Zealand: 79%; Canterbury West Coast: 80%) and per year (New Zealand: 96%; Canterbury West Coast: 94%);
- participated in at least one organised competition or event per year (New Zealand: 37%; Canterbury West Coast: 37%);
- were members of clubs or centres in order to take part in sport and recreation activities (New Zealand: 35%; Canterbury West Coast: 35%);

¹ Definition from MESH database, US National Library of Medicine. <http://www.ncbi.nlm.nih.gov/mesh> Accessed 27.05.11.

² World Cancer Research Fund and American Institute for Cancer Research. 2007. Food, nutrition, physical activity, and the prevention of cancer: a global perspective. Washington, DC: American Institute for Cancer Research.

³ World Health Organization. 2003. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert consultation. Geneva: World Health Organization.

⁴ New Zealand Ministry of Health. 2010. Benefits of physical activity. <http://www.moh.govt.nz/moh.nsf/indexmh/activity-benefits> Accessed 27.05.11.

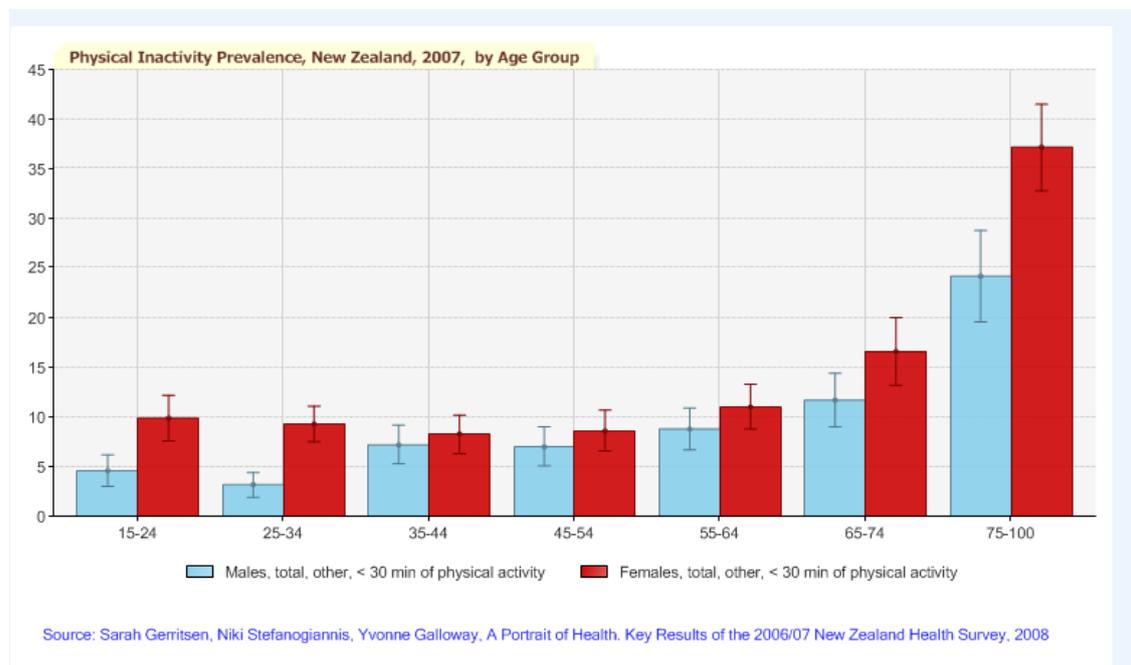
⁵ Ministry of Health. 2008. A portrait of health: key results from the New Zealand Health Survey. Wellington, Ministry of Health.

⁶ Sport and Recreation New Zealand. 2009. Sport, recreation, and physical activity profile: Canterbury West Coast Region 2007/08. Wellington, SPARC.

- received instruction from a coach, instructor, teacher or trainer to help improve their performance (New Zealand: 40%; Canterbury West Coast: 41%);
- were volunteers for a sport or recreation activity (New Zealand: 25%; Canterbury West Coast: 28%); and
- achieved the national physical activity guideline by undertaking 30 minutes or more of moderate intensity physical activity on at least five days out of seven (New Zealand: 48%; Canterbury West Coast: 53%).

Figure 1 below from the New Zealand Health Survey⁷ shows the number of people in each age group for all New Zealand who were not getting at least 30 minutes of physical activity daily.

Figure 1 Percentage of adults getting less than 30 minutes per day of physical activity, by age group.



This graph identifies that for all age-groups women are less likely to get 30 minutes of physical activity per day than men of the same age, though in many cases the confidence intervals overlap. The difference appears to be most marked under 34 years of age and over 75 years.

Impact on inequalities

Barriers to physical activity for children include changing ideas about parental control, perceptions of traffic and “stranger danger”, and time spent with electronic media.⁸ Distance (and therefore time) to schools and workplaces, dispersed development, a culture of car use, shift work, isolated workplaces, and work that involves travelling while working are barriers encountered by adults. Perceptions that walkways and public transport are unsafe because of traffic conditions or fears of harassment or attack by other users are an important barrier to physical activity, particularly for elderly people.⁹ A small study in

⁷ Ministry of Health. 2008. A portrait of health: key results from the New Zealand Health Survey. Wellington, Ministry of Health.

⁸ Burke, M., Hatfield, E., Pascoe, J. 2008. Urban planning for physical activity and nutrition: a review of evidence and interventions. Urban Research Program Paper 22. Brisbane: Griffith University.

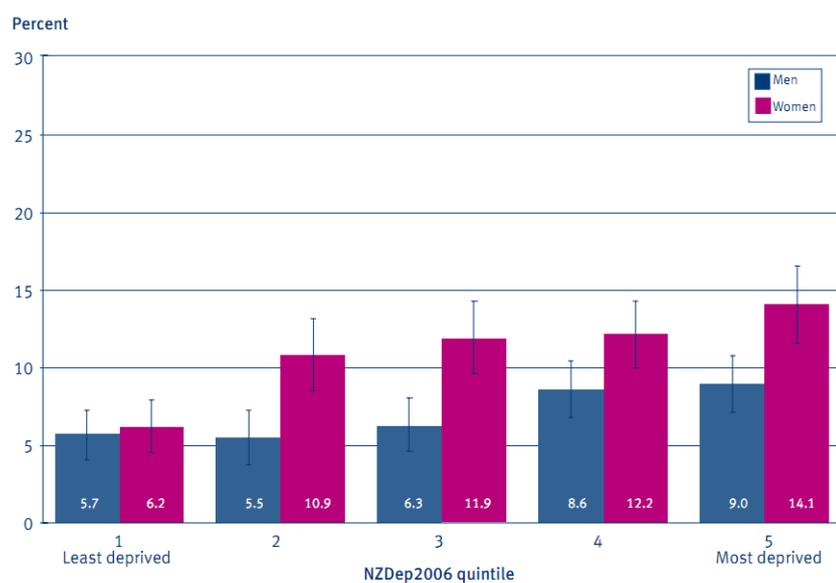
http://www.griffith.edu.au/_data/assets/pdf_file/0006/110769/urp-rp22-burke-et-al-2008.pdf Accessed 31.08.10.

⁹ Browning, C., Sims, J., Kendig, H., Teshuva, K. 2009. Predictors of physical activity behaviour in older community-dwelling adults. *Journal of Allied Health* 38, 8-17.

Christchurch¹⁰ found that there were significant disparities between high and low deprivation neighbourhoods with older adults from lower deprivation areas more likely to engage in physical activities.

The active NZ Survey found fairly similar percentage of adults across all ethnicities met the 30 minutes a day five days a week guideline with the highest rates for Maori (53.5%) followed by Pacific people (52.6%) and NZ European (48.9%). Rates for Asian populations were lowest at 37.8%.¹¹ A similar trend was found in the NZ Health Survey except NZ European rates were higher than those for Pacific people. Differences by deprivation index are shown in Figure 2 below.

Figure 2 Percentage of adults getting less than 30 minutes per day of physical activity, by gender and deprivation index.



Source: 2006/07 New Zealand Health Survey

Figure 2 identifies the same differences by gender shown above but also shows an increase in inactivity from populations in the least to most deprived areas. The increase for women is most marked at from quintiles 1 to 2 after which there is no significant difference. For men the change appears to occur from quintile 3 to 4 but the difference is not significant.

Solutions

Building incidental exercise into daily travel to destinations such as work and school has been shown to boost physical activity levels for people who have insufficient exercise. Urban design and land use policies that create safe, walkable communities characterised by mixed land use, well connected streets, and higher density housing that makes walking and cycling safer, more convenient, and attractive increase the number of people that walk, cycle, or use public transport.¹²

¹⁰ Annear, M.J. 2008. "They're not including us": neighbourhood deprivation and older adults' leisure time physical activity participation. Lincoln: Thesis for Master of Applied Science, Lincoln University.

¹¹ Active New Zealand Survey 2007/2008, National Report, SPARC. Wellington

¹² Saelens, B.E., Handy, S.L. 2008. Built environment correlates of walking: a review. *Medicine and Science in Sports and Exercise* 40, S550-566.

Cycling infrastructure, particularly off-road pathways, increases cycling uptake by reducing safety concerns.¹³ A number of New Zealand studies have shown that good footpaths, safe crossings and traffic calming measures, speed limits, and parental supervision of the younger children in walking school buses or cycle trains can encourage children to walk or cycle to school.¹⁴ Promoting active travel to school can encourage independent mobility at a younger age as well as encouraging other family members to be more active.¹⁵ Evidence about health benefits is accumulating. A five-year longitudinal study in the United States¹⁶ found that people who lived in well designed, walkable neighbourhoods had a lower incidence of type-2 diabetes. The URBAN (Understanding the Relationship Between Activity and Neighbourhoods) study is an example of research in New Zealand that is designed to provide scientifically robust information about the relationship between the built environment and health outcomes.¹⁷

Data limitations

Surveys of physical activity rely on self-reported behaviour, which tends to be an inexact measure of how much exercise an individual is achieving. The 2006/7 New Zealand Health Survey and the Active New Zealand Survey 2007/08, however, agree that about half of the population is managing the 30 minutes a day target (50.5% and 48% respectively).

Connections with other issues

Recreational Water Quality, Open and Green Spaces, Age-Friendly City, Obesity, Cardiovascular Disease, Diabetes, Active Transport.

Impact of earthquakes

As time passes and these papers are updated the initial sections on the impact of the earthquake are going to be kept as an archive. Updates are provided where possible.

As at November 2011

The Ministry of Health has reported that the stress caused by the aftermath of the earthquake has affected people's motivation to exercise.¹⁸ Many facilities designed for the express purpose of doing physical activity such as gymnasiums, athletics tracks and swimming pools have been temporarily or permanently closed due to the earthquake. Gymnasium staff have responded by offering (often free) circuit training sessions in whatever green spaces were available. There have also been free dance lessons, yoga and Tai Chi sessions around the city. Outdoor pools have remained open longer than they usually would.

¹³ Bauman, A., Rissel, C., Garrard, J., Ker, I., Speidel, R., Fishman, E. 2008. Cycling: getting Australia moving. Barriers, facilitators and interventions to get more Australians physically active through cycling. Melbourne: Cycling Promotion Fund. <http://www.cyclingpromotion.com.au/images/stories/downloads/CPFHlthRpr08V3prf1.pdf> Accessed 27.05.11.

¹⁴ Collins, D., Kearns, R.A. 2010. Walking school buses in the Auckland region: a longitudinal assessment. *Transport Policy* 17, 1-8.

Mackie, H. 2009. "I want to ride my bike": overcoming barriers to cycling to intermediate schools. Wellington: New Zealand Land Transport Agency. <http://www.nzta.govt.nz/resources/research/reports/380/docs/380.pdf> Accessed 27.05.11.

¹⁵ Kingham, S., Ussher, S. 2008. Walking school buses in Christchurch: do they encourage or discourage independent mobility? *World Transport Policy and Practice* 14, 27-38.

¹⁶ Auchincloss, A.H., Diez Roux, A.V., Mujahid, M.S., Shen, M., Bertoni, A.G., Carnethon, M.R. 2009. Neighbourhood resources for physical activity and healthy foods and incidence of type-2 diabetes mellitus. *Archives of Internal Medicine* 169, 1698-1704.

¹⁷ Badland, H.M., Schofield, G.M., Witten, K., Schluter, P.J., Mavoa, S., Kearns, R.A., Hinckson, E.A. 2009. Understanding the relationship between activity and neighbourhoods (URBAN) study: research design and methodology. *BMC Public Health*, 9, 224.

¹⁸ <http://www.moh.govt.nz/moh.nsf/indexmh/coping-with-stress-factsheet2> Accessed 27.05.11.

A number of green spaces such as football fields have been damaged causing disruption to winter team sports but many have continued to occur. An example is many tennis facilities were damaged but clubs and the Canterbury Association have worked together to ensure access continues.

Waterways have been contaminated, affecting people's access to water sports such as kayaking. Sporting events such as cycling, running and multisport races have been disrupted in some cases with cancellations, rescheduling or moving all options that have been identified.

The poor state of the roads will have deterred some people from walking and cycling. However, others have increased travel by foot and cycle as they are the most convenient ways to get around because of traffic congestion, lack of parking facilities, closed roads, and detours.