Impact evaluation of adult cycle training through the AustCycle program 2010 - 2013

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1. Executive summary

There are many health and social benefits of cycling. However, the proportion of trips by bicycle in Australia is very low by international standards. As well as a historically low level of investment in cycling infrastructure in Australia, there has been no consistent or systematic approach to cycling skills development for children or adults. A review of bicycle education programs from 2004-2008 recommended that a national scheme for bicycle skills coaching be established.

AustCycle was established in 2008 as a joint venture of Cycling Australia and the Amy Gillett Foundation, with initial support by partner organisations, including the Bicycle Federation of Australia, Department of Environment, Water, Heritage and the Arts, the NSW Office of Environment and Heritage and the Thyne Reid Foundation. The fundamental premise for AustCycle was that the Australian community would benefit from a national cycling accreditation program that provided education and training to community members of all ages and abilities to encourage the community to cycle more and ride safely. The AustCycle program is a system of cycle training using accredited Teachers and coaches working for licensed training Providers, with AustCycle training local Providers and Teachers to deliver four levels of cycling skills programs (beginner, intermediate, advanced and specialised) in the community.

The evaluation collected national data for the period of June 2010 to June 2013 relating to adult participation in cycle training programs conducted by the AustCycle Provider network. These programs included user pay, workplace training and government funded programs nationally under the Australian Government’s National Partnership Agreement on Preventative Health’s Healthy Communities Initiative, a program targeting adults predominately not in the paid workforce and at risk of developing chronic disease. Additional state funding was provided through the NSW Office of Environment and Heritage to increase the participation in cycling and the number of people cycling safely. Participants provided demographic and cycling behaviour data when registering with the program, and provided feedback on the program immediately afterwards. Height and weight data was also recorded. A sample of participants were contacted at three and 12 month intervals after participating, and physical activity, cycling behaviour and weight data were collected.

Overall, through the evaluation period over 6,700 adults participated in an AustCycle program with data collected from 4,145 people at registration, and 2,250 immediately following the program. A 10% sample of participants who provided height and weight data at registration were contacted three months after the program (n=423), and then re-contacted at 12 months (n=125).

A pool of 40 highly trained Instructor/Assessors was established, who conducted 55 ‘train the trainer’ programs for implementing the AustCycle program. This led to 483 people being trained to deliver the AustCycle program, resulting in over 117 people actively delivering programs to adults within a 6 month period to June 2013, and a larger number supporting child based programs through 53 licensed Provider organisations. Feedback was extremely positive, with over 91% of participants highly rating their AustCycle experience.

Statistically significant improvements in cycling skills and confidence were evident following the program. Almost three quarters of participants that were beginner or infrequent bicycle riders when...
they registered indicated they had ridden a bicycle in the month prior to the three month survey, which was maintained at 12 months (76%), demonstrating an increase in the number of people cycling. Overall, participants increased or maintained their frequency of cycling.

There were also statistically significant reductions in weight and body mass index (BMI) at three and 12 months. Further, there was a statistically significant association between lower BMI and total minutes cycled in the past week at the three month follow-up, after adjustment for age and sex. About one in three participants reported improvements in their feelings of wellbeing and fitness, and one in five participants reported that they had lost weight.

Recommendations

Given that the AustCycle program was successful in improving cycling skills and confidence, encouraging non-riders to cycle and was associated with significant weight loss, funding should be continued to support the further development of AustCycle as a national coordinating organisation through the following recommendations;

1. Extend funding of targeted adult cycling training, to increase both accessibility, availability increase participation in cycling across Australia.
2. Implementation of a national funded and coordinated junior riding program for school aged children, enabling all Australian children to access nationally accredited cycle Teachers (instructors) and high quality cycle education.
3. Implementation of a nationally agreed bicycle training framework and standard of training and program delivery of bicycle education, including a supported coordinating organisation, funded to ensure consistency and high quality training across Australia.
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2. Background

There are many personal and public health benefits of cycling (Bauman et al., 2008). Cross-sectional studies have shown inverse associations between active commuting and body mass index, lipid levels, and blood pressure (Hu et al., 2002, Wen and Rissel, 2008, von Huth Smith et al., 2007). Japanese workers who commuted using active modes showed a better mental health profile than those using inactive travel modes (Ohta et al., 2007). A German cross-sectional study reported an association between general health and less chronic disease among regular cyclists aged fifty to seventy years (Huy et al., 2008). Further, ecological associations across countries, cities, and US states have noted that obesity rates are inversely related to walking and cycling rates (Pucher et al., 2010, Bassett et al., 2008).

Population-based studies, usually based on longitudinal cohort designs, have contributed to evidence for the health benefits of cycling. The Copenhagen cohort study identified that cycling to work reduced the risk of all cause mortality by 28 percent, independent of other types of physical activity (Andersen et al., 2000). Many studies have identified “active commuting” as protective against all-cause or cardiovascular deaths (Hu et al., 2007, Hamer and Chida, 2008) but most of these studies asked about “walking or cycling” to work, so the relative protective effects of each activity cannot be distinguished. In the Zutphen study of elderly Dutch men, physical activity reduced risk and improved metabolic health; in this sample, the most frequent physical activity was cycling, again providing more direct evidence of cycling-specific prevention benefits (Caspersen et al., 1991). Women in the United States who increased their cycling, even by a small amount, significantly reduced their likelihood of weight gain (Lusk et al., 2010). Finally, a meta-analysis of active commuting (walking and cycling) and coronary heart disease reported data from eight studies with an 11 percent average risk reduction for developing heart disease and slightly stronger protective relationships in women than men (Hamer and Chida, 2008).

Active commuting is inversely related to diabetes incidence (Pucher et al., 2010, Hu et al., 2003). With respect to cancer risk, bicycling alone was not protective for ovarian cancer (Biesma et al., 2006), and there have been inconsistent findings for breast cancer, with no association shown in a study of Chinese women (Matthews et al., 2007), but a German study reporting lower risk among women with high levels of cycling (Steindorf et al., 2003). For colon cancer, a case-control study in older adults reported a 40 percent decreased risk among active commuting men and women (Hou et al., 2004). In this Chinese sample, commuting was mostly cycling, hence conferring most of this observed benefit. Similar results were seen in the Shanghai women’s health cohort, in which cycling more than forty minutes a day significantly reduced all-cause and cancer mortality risk (Matthews et al., 2007).

Despite the many benefits of cycling, uptake of cycling for transport or commuting in Australia is low. While there are consistent examples of increases in commuter cycling in inner city areas that have funded cycling infrastructure and promotion (City of Sydney, 2010), in New South Wales (and nationally), levels of cycling to work have not changed over the past 25 years (Rissel et al., (in press)).

Despite the many benefits of cycling, there are also many barriers. These include lack of cycling infrastructure, lack of mixed land use zoning and urban sprawl in Australian cities which means...
distances to destinations are too great for short bicycle trips, and poor driver attitudes towards cycling (Bauman, et al 2008). In addition lack of personal cycling skills adversely affects cycling confidence and can contribute to poor road safety. Australia has not systematically invested in cycling skills education for children, and as a consequence there is a risk that generations have grown up with minimal skills and experience cycling. Without at least moderate cycling skills and confidence it is unlikely that people who occasionally cycle for recreation will convert to transport cycling.

Cycling skills programs

Cycling proficiency (skills) training assists children and adults overcome skill, knowledge and confidence related barriers to cycling. For example, research suggests that children who receive cycle training are more likely to cycle, cycle on-road, have safer cycling behaviours and less likely to make errors and to be involved in a crash than their counterparts without cycle training (The Royal Society for the Prevention of Accidents, 2001a, Saville et al., 1996, The Royal Society for the Prevention of Accidents, 2001b).

Similarly, programs of cycling proficiency training for adults have been shown to significantly improve self-reported skills and confidence for cycling (Telfer et al., 2006). In an evaluation of a pilot program by Telfer et al, more than half of the cycling skills course participants (56%) said they cycled more two months after the course compared with before the program. There was a 40 per cent increase in participants having cycled in the previous week at follow-up among baseline non-cyclists, and there was also a significant increase in weekly participation in other forms of moderate intensity physical activity (Telfer et al., 2006).
While the program described by Telfer et al appears to have been successful, it was of a small scale only, and some increases in cycling were not statistically significant. The evaluation of a large comprehensive cycling proficiency training program for adults is necessary to demonstrate that such programs can increase the number of people cycling, increase the frequency of cycling and the use of bicycles for transport, and so increase physical activity levels and decrease cycling crashes.

Many European countries have national programs of cycling education in schools, including a competency-based skills component. These countries tend to have high rates of cycling. The UK has progressed further than other countries in developing a National Standard for adult cycling proficiency training, administered by the national cycling body ‘CTC’, and a consistent quality of training being delivered by accredited instructors at a regional level. The UK model is by far the most comprehensive scheme in the world. It is primarily funded via government, compared with Canada and the US where CPT is more often supported by limited grant funding and course fees.

In the UK, funding for cycling skills development and administration is mainly provided by government grant funding (usually as part of the National Cycling Strategy or the health portfolio), and through limited private company sponsorship, while course delivery by providers is mainly funded through course fees and local council grants.

A key outcome of CTC’s consultation document ‘A national framework for the training and education of cyclists, cycle users and providers of cycling activities’ (CTC, 2002) was that the future development of cycle training should be supported by a national structure.

Recently, the UK has invested significantly in cycling skills programs: (http://www.dft.gov.uk/bikeability/2012/04/11/multi-million-pound-boost-for-childrens-cycle-training/). As well as the £11m of grants in 2013, a further £24m will be allocated by the Department for Transport over the following two years. This includes an extra £2m to support expansion on top of money originally earmarked for Bikeability. Additional local contributions worth around £11.5m are expected over the next three years. This money is focused on bicycle skills training programs for children and parents.

In Australia, the Australian Bicycle Council in 2004, with funding from the Australian Greenhouse Office, commissioned the Bicycle Federation of Australia to review models for the delivery of bicycling skills programs in Australia (Bicycle Federation of Australia, 2006). This work described the alternative models for promoting best-practice in cycling proficiency training. It was decided that the model most likely to meet the desired objectives was the community-based franchise model. This document provided a vision for a system of cycling training and coaching. It outlined the benefits of achieving this vision and how it could be implemented, including the required partners, human and other resources, and financial and organisational arrangements.

The AustCycle program was conceived as a system of cycle training using accredited Teachers working for licensed training Providers, with AustCycle training local Providers and Teachers in delivering four levels of cycling skills programs (beginner, intermediate, advanced and specialised) in the community. In effect, this model of service delivery was identified as having significant potential, especially because it is flexible enough to incorporate many of the positive aspects of other service
models, and it is common in other service sectors, such as food and beverages. Variations of this model are also used for activities such as snow sports, swimming and other sports coaching.

To create a cycling coaching model it was considered necessary to set up a national coordinating organisation (NCO). The NCO was needed to develop and manage a curriculum, accredit and assist in the marketing of cycling schools and provide management assistance— it would essentially take on the coordinating role. Cycling Australia, the Amy Gillett Foundation and until 2010, the Bicycle Federation of Australia, undertook a joint venture to take on this role, and went on to develop the AustCycle program.

**Funding context**

Funding from the Commonwealth Department of Health and Ageing was provided to Cycling Australia (AustCycle) to implement cycling proficiency training as part of its Healthy Communities Initiative.

Through the National Partnership Agreement on Preventive Health, the Australian Government provided funds from 2009-10 to 2012-13 to support Local Government Areas (LGAs) in delivering effective community-based physical activity and healthy eating programs, as well as developing a range of local policies that support healthy lifestyle behaviours.

The purpose of the Healthy Communities Initiative (HCI) was to contribute to the reduction of the prevalence of obesity in Australia by maximising the number of at-risk individuals engaged in healthy lifestyle programs. The initiative targeted individuals not predominantly in the paid workforce and at risk of developing chronic disease.

Funding from the NSW Office of Environment and Heritage was provided to increase participation in cycling and increase the number of people cycling safely, by increasing opportunities for individuals to gain cycling proficiency training from accredited AustCycle Teachers. Additional cycle training was also funded by local governments, workplaces and through a user pay model through this period.
3. AustCycle Training Programs

AustCycle training programs are designed to introduce and progressively develop bike handling and traffic skills for people of all ages and ability levels, so that they can confidently and safely participate in recreational and utility cycling activities of their choice.

Participants enter the program at the relevant level to their current competence. Teachers are provided with guidelines regarding the core skills to be developed at each level of competence, however sessions can be adapted to appeal and to cater for the needs of specific demographics or population groups. The ultimate aim is to ensure that the required skills are developed; that sessions are fun, engaging and challenging for everyone involved; and further, that participation is maximised and everyone is included.

AustCycle Level 1 (Beginner) – covers bike safety principles and bike handling skills. It is appropriate for complete beginners. It includes a variety of skills and activities to progress participants cycling skill and confidence. Level 1 does not specially teach traffic awareness and safety instead focusing on the participants’ bike control.

AustCycle Level 2 (intermediate) – develops traffic safety skills and traffic awareness. Riders participate in a range of cycling skill sessions and specific traffic safety sessions. Level 2 teaches skills in a traffic-free environment, to enable participants to ride in low traffic conditions.

AustCycle Level 3 (Advanced) – is focused on teaching advanced bike handling and traffic skills. It can include basic mechanics such as repairing a flat tyre. Level 3 training takes place on real roads in realistic conditions, starting on quiet roads and progressing to busier roads as participants develop skills.

AustCycle Level 4 (Specialised) – involves specific coaching sessions and techniques for outdoor recreation purposes, advanced mechanical competencies and specialised techniques for using bicycles for utility. These specialised programs focus on ongoing recreational activities including off-road recreation (mountain biking and BMX) and on-road fitness and health programs.

AustCycle Provider components and key features

A key role for AustCycle as a National Coordinating Organisation (NCO) was to develop a number of elements for its brand to be attractive to potential franchisees and for strong customer and sponsor interest. These elements included:

- Marketing systems
- Sponsorship strategies
- Partnerships e.g. government, industry and other cycling organisations
- Management systems including accounting, legal, human resources
- Curricula
- Train-the-trainer and accreditation systems
- Insurance
At the time of development there were a number of Australian deliverers of cycling training, who became the initial Providers and were involved in the development of the licensed Provider network. These included bicycle retailers, cycling clubs and groups, youth and fitness service providers and school Bike-Ed providers. Marketing of AustCycle was critical, and a critical factor in choosing the name and describing the course generally was that “training” almost certainly was considered not appealing as a marketing concept - having connotations of compulsion unless it can be linked with the more glamorous “personal trainer” industry. “Teachers” and “Coaches” was considered likely to have greater market acceptance and appeal more to participant’s aspirations and values for the cycling community.

Recruitment to AustCycle programs was done by the Providers, or by organisations with an interest in encouraging cycling skills courses, such as local Councils or health services.
**4. Evaluation Method**

The purpose of the AustCycle evaluation was to:

- assess the impact of comprehensive cycling proficiency training and its effect on increasing the number of people cycling, increase the frequency of cycling and use of bicycles for transport
- assess the impact of participation in the AustCycle program on physical activity and weight.

To document the processes and delivery of the AustCycle program, records were kept of the number of train the trainer courses, and the number of organisations that became accredited and licensed to run cycling training courses. Accredited Providers were expected to provide details of the number and type of courses they conducted, and contact details of the participants that enrolled. In addition to this, at participant registration, information was collected about demographic characteristics of participations including age, sex, and employment status, plus when they last rode a bicycle, their confidence cycling generally and in traffic, and their height and weight in order to calculate body mass index (BMI). Baseline height was used for calculation of BMI at three and 12 month follow-up.

To assess the impact of the AustCycle program on cycling proficiency and behaviour, immediately following the program, participant feedback (open ended) was sought, plus perceived changes in cycling skills and confidence, as well as intention to continue cycling. Course Providers were asked to send these completed forms back to AustCycle.

At three months following the program a 10% random sample of participants that provided baseline information about their height and weight were telephoned by an administrative assistant and asked about when they last rode a bicycle, their confidence cycling generally and in traffic, sessions and minutes cycled in the past week, total physical activity in the past week, and their height and weight. In practice, only 60% of registered participants completed follow-up evaluation forms, and approximately 90% of these participants consented to being contacted at three months. Further, it was difficult to reach participants at follow-up and of those that were able to be reached, only about 50% agreed to participate (no records were kept about response rates). Participants that were interviewed were also asked about self-reported changes in health, including changes in well-being, fitness, weight, blood pressure, cholesterol or blood sugar.

Efforts were also made to follow up with participants from the three month survey at 12 months, to collect longer term follow-up behavioural information. Interviews were conducted on an on-going basis and data entered every two to three months, with each person having consented to be followed-up having equal probability of selection to participate in the follow-up surveys.

Participation in AustCycle courses was an important outcome of the program, and a descriptive profile of participants is presented. The exact p value for McNemar’s test for dependent paired samples was used to assess changes in the dichotomous variables. A t-test for dependent, paired samples, was used to compare continuous variables that were collected at repeated time points, such as BMI, weight loss, and total minutes of physical activity data. Measures of minutes of physical activity, walking, moderate intensity physical activity and cycling were truncated at a maximum of...
960 minutes in the past week to exclude outliers. Regression models were used to look at the association of cycling minutes with BMI.

5. Results

Overall, AustCycle reports that 6,700 people participated in AustCycle programs, although because of a delay in agreements with Providers about record keeping, hard copy registration forms were only received from 4,145 participants who registered to take part in AustCycle programs across Australia. Of these people, 2,250 provided written feedback immediately after the program. Three months after the program, a sample of 423 participants provided information on their cycling and health, and 12 months after the program further information on their cycling and health was collected from a sample of 145 participants.

National expansion of AustCycle

A significant investment of the AustCycle program was to build the capacity to deliver cycling skills courses across Australia. At June 2013 there were 40 people who were qualified Presenters/Assessors capable of training others to deliver the program. From July 2010, 55 ‘train the trainer’ courses (AustCycle Teacher Accreditation Programs) were conducted. This resulted in 483 people trained to deliver the AustCycle program, resulting in 117 people actively delivering programs to adults within the 6 month period to June 2013, and a larger number supporting child based programs. In the same period AustCycle licensed 53 Providers to deliver cycle training including establishing at least one Provider in every State and Territory.

Overall 1,216 AustCycle programs were conducted between July 2010 and June 2103, including an estimated 6,700 participants. However, written registration forms were not always completed, or forwarded by the licensed Providers to AustCycle, particularly at the early stages of program development and implementation, and only forms from 4,145 participants were received. An estimated 58 programs have no data on level of course (see Table 1).

Analysis of the programs delivered shows that a high proportion of participants (61%) registered for programs focused on entry (beginner) level skills and learn to ride programs. This generally lowered participant rates and ratios of teachers and participants to about 1:3 or 1:4 with novice and low proficiency riders requiring more attention, observation and personalised learning environments. A further 25% of participants were in intermediate level programs. Feedback forms from new riders consistently highlighted the patience of AustCycle Teachers and the support provided in assisting participants to progress to riding their bike independently.
Table 1. Number of AustCycle programs conducted by skill level and participant number

<table>
<thead>
<tr>
<th>Level of AustCycle programs</th>
<th>Programs</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of AustCycle Level 1 (Beginner) Courses</td>
<td>703</td>
<td>2,512</td>
</tr>
<tr>
<td>Number of AustCycle Level 2 (Intermediate) Courses</td>
<td>252</td>
<td>1,056</td>
</tr>
<tr>
<td>Number of AustCycle Level 3 (Advanced) Courses</td>
<td>74</td>
<td>304</td>
</tr>
<tr>
<td>Number of AustCycle Level 4 (Specialised) Courses</td>
<td>129</td>
<td>273</td>
</tr>
<tr>
<td>Not recorded</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,216</td>
<td>4,145</td>
</tr>
</tbody>
</table>

Participation figures showed programs delivered nationally averaged 3.5 participants per course. This was found to be lower 3.3 participants for programs delivered in areas targeting adults not predominately in the paid workforce. The figures support that the majority of beginner level programs were learn to ride programs involving people new to cycling and with low proficiency. It also indicates the importance of providing a small supportive and structured environment to novice and low proficiency participants, to enable the learning of skills and confidence without fear of embarrassment.

**Recruitment**

One in three (30%) found out about AustCycle through a friend or work colleague, and a further 22% from a community group. Men (58%) were more likely than women (48%) to find out through social networks, with women and older participants more likely to find out about the program from reading a newspaper or flyer or poster.

**Awareness of AustCycle**

![Awareness of AustCycle chart]

Figure 1. Sources of awareness about AustCycle programs

Registration forms show participants commonly selected a number of reasons for attending a cycling skills course. The main, and most commonly selected, reason was to improve cycle proficiency, confidence and the health of participants.

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Figure 2. Reasons for participating in AustCycle programs

The most common reasons for wanting to enroll in an AustCycle program was to increase cycling skills (34%), followed by improving health (33%) and then improving cycling confidence (14%). When examined by gender, men and women equally wanted to improve their cycling skills (34%), and with women more likely to want to improve their cycling confidence (16% vs 9%). Part-time and unemployed participants were most likely to enroll to improve their health (79%), with employed people most frequently wanting to improve their cycling skills (41%).

Table 2. Profile of participants at each stage of data collection

<table>
<thead>
<tr>
<th></th>
<th>Registration</th>
<th>Feedback</th>
<th>3 month</th>
<th>12 month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>4,145</td>
<td>2,250</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,240</td>
<td>30.2</td>
<td>695</td>
<td>31.2</td>
</tr>
<tr>
<td>Female</td>
<td>2,860</td>
<td>69.7</td>
<td>1,532</td>
<td>68.8</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>668</td>
<td>16.6</td>
<td>313</td>
<td>14.1</td>
</tr>
<tr>
<td>20-44</td>
<td>1,111</td>
<td>27.6</td>
<td>634</td>
<td>28.6</td>
</tr>
<tr>
<td>45-59</td>
<td>1,343</td>
<td>33.3</td>
<td>743</td>
<td>33.5</td>
</tr>
<tr>
<td>60+ years</td>
<td>909</td>
<td>22.6</td>
<td>527</td>
<td>23.8</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>1341</td>
<td>35.0</td>
<td>769</td>
<td>35.9</td>
</tr>
<tr>
<td>Full-time</td>
<td>1341</td>
<td>35.0</td>
<td>769</td>
<td>35.9</td>
</tr>
<tr>
<td>Part-time</td>
<td>2492</td>
<td>65.0</td>
<td>1375</td>
<td>64.1</td>
</tr>
</tbody>
</table>

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At registration, most participants were female (70%) and almost two thirds (65%) were not in the full-time paid workforce. Table 2 shows the breakdown of participation at the different stages of data collection. There were relatively few younger participants, with 83% of participants aged 30 or older and more than half (56%) 45 or older. The profile of participants completing each stage of the data collection is shown in Table 2. The baseline profile had not meaningfully changed at the three month follow-up. There were fewer younger participants, and fewer partially or unemployed participants at the 12 month follow-up.

One in three participants (37.9%) did not have a bicycle they could use during the AustCycle program, and needed to be loaned a bicycle.

Analysis of the last time participants had ridden a bicycle showed that 9.1% had never ridden and 24.3% had not ridden a bicycle for more than one year. Some participants were riding for the first time in 50 years or riding for the first time at age 69. A further 12.4% had ridden within the last year, leaving 54.2% who had ridden a bicycle in the past month. The low frequency of recent cycling and lack of cycling confidence contributes to the higher proportion of beginner cycling courses offered.

Data collected nationally shows 48.9% of participants enrolled in AustCycle programs were at risk of chronic disease with a body mass index (BMI) greater than 25, and 22.8% worked part-time and 42.2% were not in the paid workforce. Participation in all aspects of the program was voluntary and analysis shows that 69.5% of participants completed the BMI information when completing the registration forms. Provider/Teacher feedback suggests that data were less likely to be provided when the participant appeared to be overweight, therefore this estimate of the population at risk of chronic disease is likely to be conservative.
Feedback about AustCycle

Challenging aspects to training

One in every two participants who provided post training feedback list one or a combination of bike handling skills as the most challenging aspect of training. Other aspects have remained similar, however, it should be noted that 67% of programs currently focus on these skills, assisting someone to either learn to ride or reacquire skills.

NOTE: The Challenging Aspects of Training chart above identifies what aspects of training were challenging, providing an indication of what capacity and context participants can or see they can ride in the future (e.g. Someone unable to ride one handed is less likely to cycle in traffic safely, without the ability to ride in a straight line and signal or be predictable to other road users. The likelihood or intention of someone to place themselves in that environment where they feel unsafe is low).

Table 3 (below) lists direct examples of comments written on feedback forms that indicate participant’s impressions to most challenging aspects of training.

Figure 3. Components of AustCycle programs that participants found challenging
Table 3. Areas of cycling skills that participants found challenging

<table>
<thead>
<tr>
<th>Confidence</th>
<th>Bike Handling Skills</th>
<th>Fitness</th>
<th>Riding in Traffic</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try not to fall off</td>
<td>Adjusting gears</td>
<td>My fitness</td>
<td>Dealing with traffic</td>
<td>Bike maintenance</td>
</tr>
<tr>
<td>Gaining the confidence to push myself to the next level</td>
<td>Braking and emergency braking</td>
<td>Riding up hills</td>
<td>Learning to signal</td>
<td>Changing a tyre</td>
</tr>
<tr>
<td>Getting back on the bike after so many years</td>
<td>Balancing and straight line riding</td>
<td>Pedalling constantly</td>
<td>Cars going past</td>
<td>Adjusting my helmet</td>
</tr>
<tr>
<td>Gaining the confidence to take feet of the ground</td>
<td>Slow riding</td>
<td>Getting the heart and lungs to pump oxygen</td>
<td>Riding in groups</td>
<td>Know how to change a puncture</td>
</tr>
<tr>
<td>Going from never having ridden before</td>
<td>Turning in small spaces</td>
<td>Keeping up the pace</td>
<td>Riding in traffic</td>
<td>The weather</td>
</tr>
</tbody>
</table>

Despite the challenges of learning new cycling skills, participants have gained new knowledge and confidence to the extent that three months after the program, the majority (96%) of respondents have either increased (55.6%) or maintained (39.7%) their current level of cycling. A similar pattern was evident at 12 months, with most (91%) respondents having either increased (46.9%) or maintained (43.5%) their current level of cycling.

Participation and completion of adults in cycle training was high, with 97% of participants completing the program once participants had attended the first session. Consistent with this high participation rate, there was over 98% satisfaction rating recorded on feedback forms nationally.

Feedback collected post training supports the high level of satisfaction and completion from course attendees. Table 4 reports the percentage of participants who agreed or strongly agreed with the statements below.

Table 4. Percentage of participants who agreed or strongly agreed with statements about the AustCycle program

<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree/Strongly agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I really enjoyed the AustCycle program</td>
<td>99.0</td>
</tr>
<tr>
<td>I found it hard to keep coming to the AustCycle training</td>
<td>9.1</td>
</tr>
<tr>
<td>The information was easy to understand</td>
<td>98.2</td>
</tr>
<tr>
<td>The Teacher(s) were clear</td>
<td>99.3</td>
</tr>
<tr>
<td>I learnt new skills doing the program</td>
<td>95.9</td>
</tr>
<tr>
<td>I improved my bike skills doing the program</td>
<td>95.4</td>
</tr>
<tr>
<td>I felt safe doing the bike skills program</td>
<td>97.6</td>
</tr>
</tbody>
</table>
The positive experience of participation favourably affected the intention to continue cycling, with 96.8% of participants intending to continue to cycle. Recreation activities dominated the intention to cycle with 9 out of 10 people looking to ride for health and physical activity. Of the few participants that do not intend to continue cycling, they were more likely to report being the least confident cycling (46 were not confident cycling at baseline out of 62 people (74%) not intending to continue). This suggests that this small proportion of participants with very low confidence levels may require a high degree of intensive support. There was no difference by age or gender among those participants not wanting to continue cycling.

Of the options provided, most participants (85.4%) reported that ‘fun and exercise’ was their main reason for continuing to cycle, with 20.1% reporting ‘fun’ and 26% reporting ‘To get from A to B (transport)’.

![Figure 4. Post-program reasons for wanting to continue cycling](image)

**Cycling skills and behavior**

Following delivery of a range of AustCycle programs, there was a 99% satisfaction rating from participants completing feedback forms over the collection of data since January 2011. The comments associated with the benefits of training indicated that the improvement of current skills, introduction of new skills, confidence gained through training, knowledge learned in riding in traffic and the service provided by the Teacher, are all benefits from the programs.

Feedback attained from participants post course overwhelming showed an improvement in the skill level (proficiency) and confidence of respondents in their riding ability through cycle training. At registration 44.1% reported that they were confident or very confident cycling, and 28.3% reported that they were confident or very confident cycling in traffic. This went up to 74.1% and 50.8% respectively, which are both statistically significant improvements (P<0.001).
At baseline, 38% had ridden in the last week, and a further 22% had ridden in the past month. At three months follow-up this had increased to 54% and 28%, respectively. This means that three months after the AustCycle program 82% of participants had ridden a bicycle in the past month. Participants who worked part-time or were unemployed were significantly more likely to be cycling at three months (49%) compared to full-time workers (38%) (p=0.022).

For those participants at registration who had never ridden before or were infrequent riders (not in the past month n= 1,624) 71.1% reported that they had ridden in the past month 3 months following the program, and this was maintained at 12 months (76.9%)- see Figure 6. There were no differences in age, sex or employment status among those riding within the past month three months or 12 months after the program. This suggests that the AustCycle program was effective in encouraging non-riders to start cycling and to continue cycling.

Figure 5. Changes in confidence from registration to the 3 month follow-up
The 3 month follow-up telephone survey of a sample of participants found a relatively high level of physical activity undertaken in the week before the interview. There were 315 participants out of 423 (74.5%) that had undertaken physical activity for at least 150 minutes or more over a week and reported engaging in physical activity on 5 or more days of the week. The total average number of minutes per week engaged in physical activity (all activities) was 398.9 minutes. Of this time, 114.5 minutes per week was spent cycling for fitness, recreation, sport or transport. However, some participants were very active and a substantial proportion (54%) had not done any cycling at all in the past week before the survey.

The average number of minutes respondents participated in other physical activity for the purpose of fitness, recreation or sport per week was 241.7 minutes. The average number of minutes respondents undertook physical activity that made them breathe harder or puff and pant (moderate intensity) per week was 42.7 minutes.

At the 12 month follow-up telephone survey, total average time spent in physical activity was even higher, with the average number of minutes engaged in physical activity per week (all activities) being 431.5 minutes. Of 143 respondents for who there were data, 112 were achieving adequate levels of physical activity (90.7%). It is likely that there has been some selection bias among the respondents who participated in this follow-up survey.

The average number of minutes respondents reported they cycled for fitness, recreation, sport or transport per week was 146.9 minutes. However, again a substantial proportion of respondents (56%) had not cycled at all in the past week before the survey. The average number of minutes participants/respondents participated in other physical activity for the purpose of fitness recreation or sport per week was 204.8 minutes. The average number of minutes participants/respondents undertook physical activity that made them breathe harder or puff and pant (moderate intensity) per week was 69.8 minutes.

*Figure 6. Percentage of AustCycle participants who had never cycled or were infrequent riders at registration who indicated they had cycled in the month prior to the three and twelve month survey*

The average number of minutes respondents participated in other physical activity for the purpose of fitness, recreation or sport per week was 241.7 minutes. The average number of minutes respondents undertook physical activity that made them breathe harder or puff and pant (moderate intensity) per week was 42.7 minutes.

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*Rissel and Watkins - Impact evaluation of adult cycle training through the AustCycle Program 2010 - 2013*
The data collected shows a high number (74%) of sampled participants report undertaking physical activity for at least 150 minutes or more a week at the three month time point. Feedback attained also shows participants averaged almost 2 hours of cycling per week, with this increasing in a small number of 12 month surveys sampled to 2 hours and 36 minutes per week. The feedback obtained from the three month surveys also showed 55.9% of respondents self-reported an increase in cycle activity with an additional 39.9% not changing their activity levels. Respondents indicating their activity level had remained unchanged consistently reported that a combination of their skills, confidence, road rule knowledge (traffic) and personal safety was increased through training. Comments collected include:

*I feel comfortable to ride on the road now*

*I feel more confident now when riding*

*I feel more confident and safe riding*

*My skills improved when I ride*

*After completing the course I felt comfortable on a bike*

The 12 month follow-up interviews show a similar pattern with maintained or increased cycle activity representing about 90% of respondents.

**Impact on Body Mass Index (BMI)**

Registration data showed that the average participant BMI in 65 (56%) of the 115 local Government Areas LGAs recording baseline BMI was over 25. The highest BMI recorded was 68.42 and the lowest being 14.84. It should be noted that these figures are provided by participants and are not validated as part of participating in cycle training.

As a baseline, the overall mean body mass index (BMI) was 26.15, with 48.9% of participants overweight or obese having a BMI greater than 25 or 30 respectively. For participants with both baseline and 3 month follow-up weight data (n=338), there was a mean reduction in BMI weight of .24 which is a statistically significant reduction (p=0.006) and representing an average .72kg weight loss. For participants with both baseline and 12 month follow-up weight data (n=102), there was a mean reduction in BMI of .52, also statistically significant (p=0.025), representing an average 1.58kg weight loss.

While changes in BMI are a function of both changes in diet/nutrition and increases in energy expenditure, at three months after the AustCycle program there was a statistically significant negative association between BMI and total minutes cycled in the past week, after controlling for the possible effects of age and sex. This means that as cycle minutes increased, BMI decreased (p=0.014).

Self-reported changes to health suggest that participants felt some improvement to well-being, fitness and weight as a result of AustCycle participation, which was maintained at the 12 month follow-up (See Table 5).

*Rissel and Watkins - Impact evaluation of adult cycle training through the AustCycle Program 2010 - 2013*
Table 5. Participant self-reported changes to health

<table>
<thead>
<tr>
<th></th>
<th>3 month (n=423)</th>
<th>12 months (n=145)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Increased/improved (%)</td>
<td>Decreased (%)</td>
</tr>
<tr>
<td>Wellbeing</td>
<td>30.0</td>
<td>0</td>
</tr>
<tr>
<td>Fitness</td>
<td>37.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Weight</td>
<td>0.7</td>
<td>15.8</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>2.8</td>
<td>0</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>2.4</td>
<td>0</td>
</tr>
<tr>
<td>Blood sugar</td>
<td>1.9</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>1.0</td>
<td>0</td>
</tr>
</tbody>
</table>
6. Discussion

The AustCycle program has successfully established a high quality national cycling skills training program in Australia. It has developed training materials and implemented high level training programs so that there is now the capacity to continue to train cycling skills trainers.

The Provider structure was successful in attracting a range of parties interested in delivering cycle training programs from individuals, councils, bike shops, Bike User Groups (BUGs) and small business. However, there was some initial expectation that the number of Providers recruited in the project period would be higher. Factors effecting this growth included the costs of becoming a Provider, the number of existing groups conducting local cycle training programs, and the inability to source further funding to expand programs further either at a state or national level.

The recruitment of Teachers was successful in attracting a wider segment of the community to undertake training with more than 50% of the 483 Teacher trained coming from outside the cycling club context. The Accreditation of Teachers is annual, which has built in ongoing quality control mechanisms. While cycling coach training previously has been available through cycling clubs and in the context of competitive sport, there is now a systematic delivery of cycling skills training programs available that is both readily accessible to the public without requiring membership of sporting clubs and focused on community outcomes. This has been highly appealing and relevant in assisting people to cycle in the community context.

Participation in the AustCycle programs has been high, particularly at the beginner and intermediate levels. This demonstrates both the latent demand for opportunities to cycle in Australia, and that there are generally low levels of cycling skills among the Australian public. With such a widespread...
lack of cycling skills, it is perhaps not surprising that many people who cycle recreationally do not convert to transport cycling.

The experience of participating in AustCycle programs has been extremely positive. Feedback from nearly all participants consistently rated the programs highly, with very few negative comments. The patience and effort the trainers took to support participants appears to have been appreciated. There was a large effort on the part of AustCycle, its Providers and Teachers to engage and implement programs locally. The flexibility of how the programs were delivered and the specific area of cycle training covered allowed training to be tailored to the LGA and participant needs.

There were demonstrable (and statistically significant) improvements in participants’ confidence in general cycling and cycling in traffic. While this is a fundamental outcome to be expected from a training program, it has been achieved in the AustCycle context. These improved skills and confidence contributed to increased levels of cycling, particularly for those participants who were beginners or infrequent cyclists when they registered for the program. Three quarters of these non-regular riders had ridden a bicycle in the past month at the three month follow-up, and also twelve months after the program.

Further, there was a significant reduction in BMI among participants for whom height and weight data were available. This is an important public health outcome, particularly given the many different factors that impact upon weight and the relative brevity of the cycling training. There was a statistically significant association between total average minutes cycled in the past week and BMI at the three month follow-up, strengthening the view that it was the increased cycling that contributed to the weight loss.

While these evaluation results are very positive, there are some important limitations of the evaluation that need to be highlighted. Firstly, the data collection was conducted as part of the administrative functions of a program delivery focused agency that did not have a research focus. This meant that the details of procedures for random sampling and recording response rates were not always adhered to under the day-to-day pressures of delivering a national program. When the program was initially being established, procedures for data collection and inconsistent provision of data by Providers meant that programs were run in the community but no records were available for inclusion in the evaluation. This was particularly the case in the early months.

Longitudinal follow-up of program participants is a time and labour intensive process, which is why surveying a sample of participants was considered a cost-effective approach. However, anecdotally there was a relatively high refusal rate, and so it is likely that there has been some selection bias among the respondents who participated in this follow-up surveys, particularly the 12 month survey. Those most likely to continue to cycle or who had lost weight may have been more likely to participate.

Not all participants provided responses to all the questions they were asked. There was a relatively high non-response to the questions on height and weight (about 40%) but there is little the AustCycle Providers can do about this as ‘completing the paperwork’ was only a small part of the overall program and from their perspective not the most important part.

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The funding from the Healthy Communities Initiative was targeted towards disadvantaged communities, and in particular those people not in paid employment and disadvantaged sub-groups such as migrant groups. These groups can often be the most difficult to demonstrate positive changes with, sometimes because of low literacy or non-compliance to completion of forms and provision of personal details. In many cases support provided by local government areas to subsidise participation and affordability for disadvantaged communities was essential for sustained participation programs and implementation of the program.

A strength of the evaluation was the longitudinal nature of the design. Being able to follow-up participants meant that individual changes can be reported with statistical confidence. Further, the evaluation has been conducted in the context of the delivery of a substantial national program, representing an example of translational research (Rychetnik et al., 2012) where a program shown to be effective on a small scale is ‘scaled up’ and delivered at a population level (Milat et al., 2011).

In addition to the outcomes measured in the evaluation, the implementation of the AustCycle program contributed to other positive outcomes. They supported local council staff in their efforts to develop cycling infrastructure, and deliver road safety and education programs. They also contributed to enhanced social interaction within the community.

Compared to many countries, the AustCycle program is an excellent example of the systematic implementation of a national adult cycling program. It represents an important, albeit modest, investment in cycling promotion. It is worth noting that the AustCycle program was implemented in an environment where little state or federal funding has been allocated to building new cycling infrastructure and there has been no funding allocated for the implementation of the national bike plan. By comparison, England recently announced new funding of £20 million to support cycling.
Now that the AustCycle program has been established and has demonstrated that it has achieved its objectives, it should continue to be supported financially.

Australia, like many countries, wants to increase walking and cycling (Australian Bicycle Council, 2010, Australian Government, 2010). The longer term strategy for cycling skills development in Australia will need to address cycling skills among children, to ensure that adults have the basic abilities and skills to ride a bicycle with confidence. As cycling infrastructure is slowly developed, children and adults will then have a healthy option to cycle.

In the United States, the Institute of Medicine’s new report “Educating the Student Body: Taking Physical Activity and Physical Education to School” encourages the U.S. Department of Education to designate physical education as a core subject, just like history and math (Kohl and Cook, 2013).

Additionally, the report states that physical activity levels of students have dropped because of increased reliance on non-active transportation to and from school. Recommendations include additional opportunities for physical activity before and after school hours, including but not limited to active transport, before and after-school programming, and intramural and extramural sports.

The foundation of adult cycling is having the skills to cycle confidently. These skills are predominately developed during childhood. In previous generations these skills were practiced through recreational cycling and cycling to places, such as school. Therefore systematic skills development during the school years is an important generational basis for adult cycling.

Behind the participation and implementation of programs either successfully or unsuccessfully, has been the people involved at a community level in championing the program, whether this is the Provider, Teacher, council staff, community leader or a combination working together. The ability for these people to develop and maintain relationships, mitigate barriers and deliver fun, engaging, challenging and rewarding programs that teach the necessary skills and confidence to increase riding was the key predictor of an effective program. Because of the considerable enthusiasm for cycling in the community, consistently the most successful approach to the delivery of programs was a coordinated and cooperative effort by stakeholders.

AustCycle has been able to successfully lead a collaborative approach of one united brand promoting community cycle training through a range of stakeholders from a national through to community level. This extends the reach, awareness and availability of cycle training in the community. This is evident when considering media exposure achieved nationally over the last two years has accessed 6.3 million people through print and radio media via 171 published pieces. In addition to these figures is the social media impact of approx 1.3 million from website, facebook, twitter and linkedin platforms and distribution of newsletters via Cycling Australia, Amy Gillett Foundation and AustCycle.

Government funding has enabled AustCycle to establish a national program for cycle training that is accessible and focused on community outcomes. The three year period has provided valuable time and resources to nationally expand the program, establishing a national presence, and grow the network of Providers and Teachers to make cycle education more accessible for the community. The limitation of the evaluation period and support from government funding over a 3 year period while allowing for expansion provides limited opportunity to consolidate new and growing programs

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within the community. Underpinning this is a community perception in Australia that does not yet fully value bicycle training as an important strategy to promote physical activity and road safety. This view in Australia is best contrasted with the financial input that the UK government has and is continuing to make to ensure bicycle training remains accessible and available through funding support.

Recommendations

Given that the AustCycle program was successful in improving cycling skills and confidence, encouraging non-riders to cycle and was associated with significant weight loss, funding should be continued to support the further development of AustCycle as a national coordinating organisation through the following recommendations;

1. Extend funding of targeted adult cycling training, to increase both accessibility, availability increase participation in cycling across Australia.
2. Implementation of a national funded and coordinated junior riding program for school aged children, enabling all Australian children to access nationally accredited cycle Teachers (instructors) and high quality cycle education.
3. Implementation of a nationally agreed bicycle training framework and standard of training and program delivery of bicycle education, including a supported coordinating organisation, funded to ensure consistency and high quality training across Australia.
7. References


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8. Appendices
Continued:

Emergency Contact Name:

Will you have your own bike to use? Yes No

How did you find out about AustCycle?
- Poster or leaflet
- Friends/work colleague
- Email list
- Radio or TV or newspaper
- Magazines, brochures/newsletters
- Community group
- Other

Your main reason(s) for attending this training program?
- Improve health
- Improve cycling confidence
- Increase time spent cycling
- Other

Meet people

When was the last time you rode a bike?
- last week
- last month
- last year
- longer than a year
- never

How would you describe your current level of confidence about riding (please tick)? 1=Low 6=High

1 2 3 4 5 6

How would you describe your current level of confidence about riding in traffic (please tick)? 1=Low 6=High

1 2 3 4 5 6

(1) Any injury, loss or damage sustained by me.
(2) Any injury, loss or damage suffered by any other person as a result of any act, omission, neglect or default on my part, in connection with participation in the AustCycle Cycling Training course or at any time when me at or near the AustCycle Cycling Training course. I acknowledge that AustCycle's insurance policy covers me for public liability and personal indemnity whilst participating in the AustCycle Cycling Training course and agrees to wear an Australian Standards approved cycling helmet whilst riding a bike at all times during the period I agree to be responsible for my personal accident insurance, ambulance coverage and any medical costs not covered by AustCycle's insurance.

I hereby agree to allow the Participant's name, photograph, video, and to recordings, multimedia or film likeness to be used in the media and by AustCycle, the sponsors, or assigns for the purpose of promoting AustCycle, the AustCycle Cycling Training course and the sport of cycling.

This program was funded by the Australian Government

AustCycle Pty Ltd C/- PO Box 6310 Alexandria 2015 NSW Australia Phone 02 9339 5842 Fax 02 9339 5888 Web www.austcycle.com.au

Rissel and Watkins - Impact evaluation of adult cycle training through the AustCycle Program 2010 - 2013
**PARTICIPANT FEEDBACK FORM**

Participant’s details:
Name

1. What was the most satisfying part of AustCycle training?

2. What do you think was the most challenging part of the AustCycle training?

Please answer the following questions by indicating with a tick in the matching column to reflect your level of agreement or disagreement with the question asked:

<table>
<thead>
<tr>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
</tr>
</tbody>
</table>

3. I really enjoyed the AustCycle program

4. I found it hard to keep coming to the AustCycle training

5. The information was easy to understand

6. The Teacher(s) were clear

7. I learnt new skills doing the program

8. I improved my bike skills doing the program

9. I felt safe doing the bike skills program
10. Now that the AustCycle program is finished, do you intend to continue riding? (please tick)
   Yes  No

11. If yes, for what reason (you can tick more than one)
   Fun  Fun/exercise  To get from A to B (transport)

12. How would you describe your current level of confidence about riding (please tick)?
   1 = Low  6 = High
   1  2  3  4  5  6

13. How would you describe your current level of confidence about riding in traffic (please tick)?
   1 = Low  6 = High
   1  2  3  4  5  6

14. Other comments?

15. May we contact you in 2-3 months and in 12 months to ask how your riding is going? (please tick)
   Yes  No

Thank you for your feedback!

This program was funded by the Australian Government.
Three/twelve month follow-up (by telephone)

When was the last time you rode a bicycle for any reason? Was it:

1 [ ] Today
2 [ ] Within the last seven days
3 [ ] Within the last month
4 [ ] Within the last year
5 [ ] Longer than a year

Where were you going when you last rode a bicycle?
[Tick the main one only]

1 [ ] Work
2 [ ] Shops
3 [ ] Friends / social activity
4 [ ] Recreation
5 [ ] Fitness /training
6 [ ] Other

The following four questions ask specifically about the amount of time you have spent cycling...

In the last week how many times have you ridden your bike, for at least ten minutes, for recreation or exercise?

_________ times

[Don’t read out]
[ ] Don’t know
[ ] Refused

What do you estimate was the total time you spent riding your bike continuously in the last week for recreation or exercise? In hours and/or minutes.

__________ minutes ____________ hours

[Don’t read out]
[ ] Don’t know
[ ] Refused

In the last week how many times have you ridden your bike to get to or from places (work, shopping, friends)?

__________ times

Rissel and Watkins - Impact evaluation of adult cycle training through the AustCycle Program 2010 - 2013
What do you estimate was the total time you spent riding your bike in the last week to get to or from places?

*In hours and/or minutes*

__________ minutes ______________ hours

[Don’t read out]
[ ] Don’t know
[ ] Refused

The following questions are about any physical activities that you may have done in the last week:

In the last week, how many times have you walked continuously, for at least 10 minutes, for recreation, exercise or to get to or from places?

__________ times

[Don’t read out]
[ ] Don’t know
[ ] Refused

What do you estimate was the total time that you spent walking in this way in the last week?

*In hours and/or minutes*

__________ minutes ______________ hours

[Don’t read out]
[ ] Don’t know
[ ] Refused

The next four questions EXCLUDE household chores, gardening or yardwork:

In the last week, how many times did you do any vigorous physical activity which made you breathe harder or puff and pant? (e.g. jogging, cycling, aerobics, competitive tennis)

__________ times

[ ] Don’t know
[ ] Refused
What do you estimate was the total time that you spent doing this vigorous physical activity in the last week?

*In hours and/or minutes*

_________ minutes ____________ hours

[ ] Don’t know
[ ] Refused

In the last week, how many times did you do any other more moderate physical activities that you have not already mentioned? (e.g. gentle swimming, social tennis, golf)

_________ times

[ ] Don’t know
[ ] Refused

What do you estimate was the total time that you spent doing these activities in the last week?

*In hours and/or minutes*

_________ minutes ____________ hours

[ ] Don’t know
[ ] Refused

Participants perceptions of the changes in their health status (such as sense of wellbeing, fitness level, weight, chronic disease risk factors i.e. blood pressure, cholesterol) as a result of their participation in the AustCycle program.

Have you notices any changes to your health as a result of participating in the AustCycle Program? (tick any that are mentioned)

<table>
<thead>
<tr>
<th>Improvements</th>
<th>Decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wellbeing</td>
<td>Wellbeing</td>
</tr>
<tr>
<td>Fitness level</td>
<td>Fitness level</td>
</tr>
<tr>
<td>Weight</td>
<td>Weight</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Blood pressure</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Cholesterol</td>
</tr>
<tr>
<td>Blood sugar</td>
<td>Blood sugar</td>
</tr>
<tr>
<td>Other</td>
<td>Other</td>
</tr>
</tbody>
</table>

What is your height _______ (cms)

What is your weight _______ (kgs)