

CYCLING WITHOUT AGE



**RESEARCH AND EVALUATION REPORT
2019/20**

CYCLING
WITHOUT AGE
SCOTLAND 



Being able to get outside is something that many of us take for granted, whether that's part of our daily commute, to do a bit of physical activity, or simply to enjoy the fresh air. For many people, however, mobility issues and other barriers can limit being able to get outdoors. People living in care homes can be particularly affected. Even in care homes with a full range of activities, getting outdoors regularly can prove challenging.

That is where

Cycling Without Age
can help.



Photographer: Lesley Martin

Cycling Without Age began in Denmark in 2012 with a simple idea: trained volunteers would take people on cycle rides in their local area on specially designed trishaws. Cycling Without Age's ethos is to give people "the right to wind in their hair, the right to experience the city and nature close up... and by giving them an opportunity to tell their story in the environment where they have lived their lives". Cycling Without Age came to Scotland with a first trial in Falkirk in 2017. Since then, a national roll-out of the activity has been supported by the Scottish Government, with chapters from the Borders to the Highlands and Islands.

After evaluating the trial, The Ageing Lab at Heriot-Watt University has continued to work with Cycling Without Age Scotland to explore the experiences of those taking part. Given Cycling Without Age's global success, there is still relatively little research on the potential benefits of participation. In conducting our research, we want to identify if there are benefits, and what those might be, using robust methodology, and also support further evaluation at sites within Scotland and further afield.

This report provides a summary of our most recent research and evaluation. Though developed in collaboration with Cycling Without Age Scotland, the studies were conducted independently by The Ageing Lab.

The report details short-term improvements in mood and wellbeing after taking part in a Cycling Without Age ride. The emotions experienced during a ride were also predominantly positive. The findings support the continued roll-out of Cycling Without Age across Scotland, as well as creating opportunities for further evaluation of the benefits.

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CYCLING WITHOUT AGE

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Introduction

Cycling Without Age started in Denmark in 2012 with the aim of helping older people with limited mobility to get back on their bicycles. The movement is global, with over 2,200 'Chapters' in 50 countries.



Photographer: Ronnie Anderson

Volunteer 'Pilots', working through local 'Chapters', take up to 2 people out for rides in specially designed trishaws. The movement's guiding principles are:

- **Generosity:** Cycling Without Age is based on generosity and kindness. It starts with the obvious generous act of taking one or two older or less-able people out on a bike ride. It's a simple act that most people can do.
- **Slowness:** Slowness allows you to sense the environment, be present in the moment and it allows people you meet along the way to be curious and gain knowledge about Cycling Without Age because you make time to stop and talk.
- **Storytelling:** Older people have so many stories that will be forgotten if we don't reach out and listen to them. We tell stories, we listen to stories on the bike and we also document the stories when we share them via word of mouth or on social media.
- **Relationships:** Cycling Without Age is about creating a multitude of new relationships: between generations, among older people, between pilots and passengers, nursing home employees and family members. Relationships build trust, happiness and quality of life.
- **Without Age:** Life unfolds at all ages, young and old, and can be thrilling, fun, sad, beautiful and meaningful. Cycling Without Age is about letting people age in a positive context – fully aware of the opportunities that lie ahead when interacting in their local community.¹

¹ <https://cyclingwithoutage.org/>

² <https://cyclingwithoutage.scot/>

³ **Gow, A. J., Bell, C. & Bigger, J.** (2019). *Cycling Without Age – Evaluation Report 2018*. Available at: <https://healthyageing.hw.ac.uk/publications.html>

CYCLING WITHOUT AGE IN SCOTLAND

Cycling Without Age came to Scotland as part of a trial in Falkirk led by the Communities Along the Carron Association. The success of the trial supported the establishment of Cycling Without Age Scotland with funding from the Scottish Government. Cycling Without Age Scotland supports the roll-out and continued development of the initiative across the country, with over 50 Chapters either active or in the process of setting up.²

The Ageing Lab at Heriot-Watt University completed an evaluation of the trial in Falkirk, involving interviewing care home residents, family members/carers, care home staff, and pilots. The experiences of those involved were positive, and suggested benefits for care home residents in terms of mood, alertness and general wellbeing.³

The Ageing Lab continued to work with Cycling Without Age Scotland as the country-wide roll-out developed to further explore the potential benefits for those participating.

RESEARCH AND EVALUATION IN 2019/20

This report presents the findings of the next phase of our research and evaluation. The aim was to:

- explore the mental health and wellbeing benefits for participants;
- inform the development of approaches to evaluation for the wider roll-out.

The research reported here comprises two studies. In one, participants completed questionnaire measures of mood and wellbeing before and after taking part in the activity. The intention was to explore whether there were measureable short-term benefits associated with the activity. In the second study, video recordings were made during rides to get a more detailed assessment of the emotional experience of the activity.

In the report, the two studies are briefly described alongside the general findings. More detailed write-ups are being prepared for the scientific literature; for information on those as they become available, you can refer to The Ageing Lab website or contact the team (details at the end of the report).



Photo by Eddie McElaney

Exploring the short-term benefits of a ride

Anecdotally, and from our earlier evaluation of participation in Cycling Without Age, benefits to general mood and wellbeing have been suggested. We were therefore interested in exploring whether these short-term changes in mood and wellbeing could be assessed. We designed this study to take measures of mood and wellbeing from a group of older people before and after their Cycling Without Age rides.

METHODOLOGY

Cycling Without Age Scotland sent details of the proposed study to locations across the country. Once care homes expressed an interest, The Ageing Lab researcher arranged to visit and provide more information.

During the researcher's first visit to each care home, they introduced the study in more detail to staff and residents, including what participation would involve. Potential participants were provided with an information sheet and consent form, the opportunity to ask any questions they might have, and time to consider taking part.

For people who provided consent, suitable dates were arranged to complete the mood and wellbeing questionnaires. Those taking part completed the same questionnaires on four occasions. They first completed the questionnaires on a day when no ride was scheduled; they would complete the questionnaires (baseline), return to their normal routine for about 30 to 40 minutes, before completing them again (follow-up).

On a different day, participants completed the questionnaires (baseline), took part in a ride for about 30 to 40 minutes, before completing them again immediately upon their return (follow-up). As far as possible questionnaires were completed at approximately the same time on ride and no ride days.



Photographer: Lesley Martin

Of the 49 people who provided consent, 47 completed the questionnaires on the no ride day and 35 on the ride day. The results are reported for the 35 people with complete information. This included 10 men and 25 women who were aged between 67 and 100 years old (the mean age was 85). On average, the participants had taken four previous rides, though this varied from one person taking part in their first ride to one person who had taken more than 50.

The UWIST Mood Adjective Checklist (UMACL) and the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) were used, and will generally be referred to as mood and wellbeing for simplicity.⁴

The mood scale provides three scores, measuring feelings of pleasure, feelings of stress/tension, and levels of energy. The wellbeing scale gives one overall score for wellbeing.

For each participant, it was therefore possible to look at changes in mood and wellbeing from baseline to follow-up on a no ride day, and compare those to changes from baseline to follow-up on a ride day. In the analysis, age and gender were also included.

FINDINGS

On no ride days, there were either no or only small changes in mood and wellbeing between baseline and follow-up. That is, on the days people were not going out on a ride, their mood and wellbeing scores remained generally stable over a period of about 30-40 minutes.

On ride days, there were differences in mood and wellbeing between baseline and follow-up. After taking part in a ride, there were improvements in all the mood and wellbeing scores.

You can see those changes in scores between baseline and follow-up on the different days as follows.

		No ride day	Ride day
Mood	Pleasure	-0.1	+3.9
	Tension/stress	+1.0	-4.4
	Energy	+0.2	+3.7
Wellbeing		-0.1	+4.1

For pleasure, energy and wellbeing, a positive change represents improved mood or wellbeing; for tension/stress, a negative change represents a reduction in tension/stress so a lower score is better.

Importantly, when we looked at the ride and no ride figures together, the analysis suggested that there were statistically meaningful differences. That is, the changes on the ride days were bigger than those on the no ride days, suggesting that participation in a ride had a positive effect on mood.

⁴ **Tennant, R., Hiller, L., Fishwick, R. et al.** (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes*, 5, 63. doi:10.1186/1477-7525-5-63.
Matthews, G., Jones, D. M., & Chamberlain, A. G. (1990). Refining the measurement of mood: The UWIST Mood Adjective Checklist. *British Journal of Psychology*, 81, 17-42.

INTERPRETATION

The results provide support for the positive effect that participation in Cycling Without Age can have on older adults' mood and wellbeing. It is important to note that the improvements we report here were immediately after having taken part in a ride.

Using the observation of these short-term improvements in mood and wellbeing as a foundation, future research should measure if those are sustained over a longer period, and if so, for how long. Recommendations for those studies are given in the overall conclusions to this report.

Although the improvements can only be described as short-term, and in a relatively small sample given the nature of the activity being studied, it is important to note those benefits may still be valued by those participating in the activity. That may be particularly the case for those with more limited mobility for whom Cycling Without Age provides an opportunity for getting outdoors and socialising. The short-term changes observed are consistent with the qualitative evaluation we conducted on the initial Cycling Without Age trial in Falkirk,³ and support further research and evaluation to explore those benefits in greater detail.



Photographer: Ronnie Anderson

Experiences during a ride

In addition to exploring short-term changes in mood and wellbeing, we were interested in the emotional reactions people had while they were on a ride. To do this we employed an innovative data collection technique known as Participatory Action Research. This allows

researchers to observe participants' expressions without being in a position to affect them. The method is a more inclusive approach than the study described above, as it gives those who are less able to complete detailed questionnaires the opportunity to take part.



METHODOLOGY

For those who consented to participate, we used an action (video) camera to record them during their ride. The camera was attached to the side panel of the trishaw using a flexible clamp, angled to get the best possible view of both passengers. As the researcher was not present once the camera was fitted, the method provides an opportunity to collect naturally occurring data. Recordings were taken during a trip on one of their usual routes that generally lasted between 30 to 40 minutes.

This study included six men and six women who were aged between 67 and 92 years old (the mean age was 82). On average, the participants had taken eight previous rides, though this varied from one person taking part in their first ride to one person who had taken more than 50.

The recordings were analysed using a coding method known as the Facial Expression Coding System (FACES)⁵. Using the system, researchers note every emotional expression made by a participant during their ride, including the duration of the expression.

The researchers also note the valence of the emotional expression (that is, whether it is positive or negative), and the intensity. Two researchers independently rated each recording before comparing their results.

For each participant, we were therefore able to report the mean intensity of the emotions they experienced during the ride, the total number of positive emotions, the total number of negative emotions, the complete duration of emotional expressions, and the word that best described their experience (for example, interest, sadness, anger, surprise, fear/disgust, neutral/indifferent, or happiness). We also considered the number of times the participant looked at the camera, the number of times they pointed at something of interest, and the number of times that they waved at or greeted others.

⁵ Kring, A. & Sloan, D. (2007). The Facial Expression Coding System (FACES): Development, validation, and utility. *Psychological Assessment*, 19, 210-224. doi: 10.1037/1040-3590.19.2.210.



Photo by Eddie McElaney

FINDINGS

Before the main findings were analysed, the level of agreement between the two researchers was calculated. Across the different measures, the level of agreement in their ratings was high. The results are therefore based on combining the two researchers.

Some of the key results included:

- Women were a bit more emotionally expressive during the rides, rated on the overall scoring system as 3.7 out of 5, while men scored 2.8. This difference between men and women was not statistically meaningful, but highlights an interesting area to explore further.
- On average, 24 positive emotional expressions were observed per ride. That was statistically higher than the number of negative emotional responses; on average, less than one negative emotional expression was observed per ride.
- Adding up the durations, the positive emotional expressions lasted 140 seconds on average, versus just over one second for the negative emotional expressions.
- As well as there being more positive emotions, these were rated as more intense. On average, the intensity of the positive emotions was 1.9 out of 5, while the intensity of the negative emotions was 0.3.
- Participants pointed to something of interest an average of 10 times per ride, and waved at or greeted others an average of 5 times.
- None of the participants were rated as expressing sadness, anger or disgust during the rides. The only negative emotion expressed was fear, though this was observed a limited number of times (if at all).
- In terms of the positive emotional expressions, happiness was observed most frequently, followed by interest and amusement.
- When selecting a single emotion that was predominantly expressed throughout the rides, the researchers most frequently selected happiness and interest.



Photo by Shauna Brown

INTERPRETATION

The small study was intended to add additional information to the questionnaire-based design used in the earlier study. Overall, the observations highlight the positive experiences that older adults had while participating in a Cycling Without Age ride. Benefits of the design include the absence of the researcher during data collection, meaning the experiences observed were as true to the real experience as possible.

While positive emotions were more common, it is important to note there were some instances of negative emotions or discomfort. The advantage of the recordings allows these to be placed in context. The limited observations of discomfort were usually associated with a specific element in the environment, for example tackling an uneven surface or kerb. Similarly, though fear was observed this was very limited (both in occurrence and intensity), and generally seen in those during the earliest stage of a first ride. While it is important to note potential negative experiences so that these can be addressed, these reactions should not be overstated; the positive expressions (happiness, amusement and interest, for example) were the more frequent reactions observed.

Those taking part in the rides tended to be very engaged in their surroundings, pointing at things of interest and greeting others (often these greetings resulted in lengthy conversations), as well as talking with the other passenger and pilot. These observations highlight the shared experience of all involved and the social aspect of the initiative.

CONCLUSIONS

Taking the results of the two studies reported here, in addition to the qualitative evaluation conducted on the initial trial, the findings provide evidence for the generally positive benefits of participation in Cycling Without Age. Short-term improvements in mood and wellbeing were observed as a result of taking a ride, and during those rides, the emotions experienced were predominantly positive ones of happiness and interest.

While we cannot attribute specific causes to those benefits, the qualitative evaluation and video recordings suggest that aspects of being outdoors, a renewed sense of independence and socialising were particularly valued. Participants appear to benefit from the opportunity for shared experiences with others while engaging with the local community, aspects that are core to the Cycling Without Age ethos.

We must, of course, highlight that the samples used in these studies remain relatively small. That is partly a constraint of working with activities that exist in real settings, and also the age and general health of the participants. The samples are, however, comparable to studies of similar initiatives. We would welcome opportunities to repeat these studies in other locations (led by independent teams) to provide replication of the findings. The recording of rides, with permission of those included, could also be managed across a wide number of sites by pilots and care homes, with the analysis conducted by a central research team. This would allow a larger sample on which broader conclusions might be possible.

With the trial evaluation and the current two studies completed, we suggest the next stage of research with Cycling Without Age should include a larger scope, and might be best situated in a location before the activity is embedded. For example, a full series of assessments would be offered before any rides are completed, including psychological health and wellbeing measures, in addition to basic physical health tests.

Once residents have participated in the scheme for about 3 months, the measures would be repeated to explore changes over the period of activity in these important health and quality of life outcomes.

In summary, the benefits observed in the current research (which remains a small snapshot of the overall activity) support the continued development of Cycling Without Age across Scotland.





Photo by Lisa Evans

WHO CONDUCTED THE RESEARCH?

The studies were carried out by Ryan Gray, Research Assistant in The Ageing Lab, based in the School of Social Sciences at Heriot-Watt University. Rating of the videos was supported by Shana Faraghat, Volunteer Research Assistant and Undergraduate Student in Psychology at Heriot-Watt. The research and evaluation was conceived and designed by Professor Alan Gow, Director of The Ageing Lab, with input from Christine Bell, Executive Officer for Cycling Without Age Scotland.

WHERE CAN I FIND OUT MORE ABOUT CYCLING WITHOUT AGE SCOTLAND?

Cycling Without Age Scotland has chapters across the country. Details can be found on the CWA Scotland website (<https://cyclingwithoutage.scot/>), Facebook (<https://www.facebook.com/CWAScotland/>), or by calling 01324 467272.

WHERE CAN I FIND MORE INFORMATION ABOUT THE RESEARCH?

The Ageing Lab team would be happy to provide further details about this report or their ongoing research. More information can be found at www.healthyageing.hw.ac.uk, and you can contact the research team at HealthyAgeing@hw.ac.uk.

Research with **Cycling Without Age Scotland** is continuing and you can find updates on the website as they become available, www.healthyageing.hw.ac.uk.

WHO FUNDS THE INITIATIVE?

Cycling Without Age Falkirk was established in 2017 with funding from the Scottish Innovation Fund to the Communities Along the Carron Association. Cycling Without Age Scotland was launched in 2018 with funding from the Scottish Government.

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We would also like to thank the many individuals and groups who have contributed to the development of **Cycling Without Age Scotland**. Thank you for helping to give people the “right to wind in their hair”.

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