

BRIEFING NOTE FOR HEALTH PROMOTERS

**cycle
BOOM**
DESIGN FOR LIFELONG
HEALTH & WELLBEING

Promoting Age Friendly Cycling



*E-bikes can promote health and wellbeing
(Photo: Raleigh, 2014)*

Cycling for an Ageing Population

The population across Europe is ageing as people are living longer and the birth rate is falling. Policy makers are looking at systematic approaches to support and encourage people to stay active for longer in an effort to reduce end of life morbidity and the wider impact on national health and care services. Promoting and prolonging cycling among an ageing population is one way of achieving this. This briefing note reports on key findings from the cycle BOOM study and provides recommendations on how those involved in promoting health and wellbeing could respond.

The cycle BOOM Project

cycle BOOM was a three-year project (2013-2016) to develop a better understanding of how the design of the built environment and technology shapes engagement with, and experience of cycling as people get older, and how this affects their independent mobility, health and wellbeing. The research involved nearly 240 people aged 50 and over living in Oxford, Reading, Bristol and Cardiff. Three main methods were used:

Cycling Biographies that involved conducting semi-structured interviews with a variety of participants, to provide understanding of how engagement with cycling changes over the life-course and the reasons behind cycling cessation, continuity and re-engagement.

(Velo) Mobile Observations that involved accompanying and videoing older cyclists as they cycled and asking them questions about their ride in a follow-up Video Elicitation Interview. This produced insights into their practices and experiences of cycling. Galvanic Skin Response (GSR) sensors were also fitted to some participants to identify aspects of the built environment that add to or detract from moment-by-moment wellbeing while riding.

A Cycling and Wellbeing Trial that involved 77 people who had either not cycled, or seriously reduced their cycling in the past five years, in an experiment to see how cycling affects their cognition and wellbeing. After a cycling assessment and advice programme with an accredited trainer participants pledged to cycle outdoors for at least 30 minutes three times a week over an 8-week period using a pedal cycle (39 participants) or an e-bike (38 participants) loaned to them through the project. As well as pre-and-post-trial cognitive tests and measures of wellbeing they kept a diary of their experience of cycling during the 8-weeks. They were also asked complete an online survey several months after the trial to identify the impact on their personal wellbeing and whether they had continued cycling.

Key Issues in Planning for Current and Prospective Older Riders

'Resilient Riders' who already cycled were positive about cycling's contribution to staying active. Many incorporated cycling in personal or shared projects to be physically active and enhance health. Difficulties with joints and other ailments were common but cycling was seen as an aid to mobility, and in some cases, more comfortable than walking. There were many accounts of how cycling had helped in coping with physical and mental health problems. There was a feeling that cycling provided the opportunity for escape and reflection when riding alone or a chance to connect and enjoy social time when riding in the company of others. For some of the oldest participants, cycling enabled them to maintain a personal connection with the area in which they live and people who live there. Some participants took pride in encouraging others to cycle, whether this was children, grand-children or colleagues at work. Our observations revealed that many participants confined their riding to off-road cycle tracks and traffic-free routes, for example, along paths adjacent to waterways. These were valued because it allowed riders to let their concentration dip, take in their surroundings and focus on pedalling rather than on dealing with traffic. Retired participants were often more flexible with their time and typically scheduled cycling to avoid busy periods. While journeys for work

or volunteering were still often undertaken at peak times, those for leisure, exercise, shopping and socialising were overwhelmingly undertaken outside of this busy period.

'Re-engaged Riders' who took part in our cycling and wellbeing trial were overwhelmingly positive about their experience of cycling but were generally negative about their experience of UK cycling infrastructure and frustrated by the UK weather. The main use of pedal cycles and e-bikes was for recreation in green space away from traffic or on quiet roads, but some participants used, or started to use, their (e-)bike to perform errands and to travel along more challenging routes to work (often pre-planned and sometimes shadowed by a friend/partner). Some forfeited using the car and found cycling more versatile than public transport. One thing in particular that stood out was the sheer enjoyment and thrill of e-biking. Participants spoke about being able to cope with physical ailments that made ordinary pedal cycling challenging also about feeling safer because the e-bike allowed them to move away from junctions more quickly and avoid wobbling up hills and inclines. Pedal cyclists and e-bikers enjoyed the freedom to discover new routes in their local area and engage more intimately with the landscape and e-bikers valued the ability to cover more distance in less time and have certainty of being able to get home. The e-bike was seen as particularly beneficial in providing opportunities to ride with a more agile partner or friend. There was a sense among pedal cyclists and e-bikers and that they were getting healthy exercise outdoors and a feeling that this was contributing to personal health and wellbeing. Perceived benefits included weight loss, increase in fitness, improved leg strength and endurance, better sleep and improved self-esteem. We also found, to our surprise, that a proportion of e-bike participants opted to forgo power assistance (around 15 per cent of the total time) and this made overall physical exertion equivalent (or harder) compared to their pedal cycle counterparts. Overall there was a sense of achievement and satisfaction from completing the '8-week' Cycling and Wellbeing trial. Participants commented that the initial cycle assessment/training programme had helped them gain confidence and they also felt that the trial had motivated them to keep going.

Participants cycled for an average of 3 hours per week and made, on average, 30 separate journeys over the 8-week trial period.

Over sixty per cent reported that, since completing the trial, they had cycled and intended to increase or maintain their level of cycling. A further 30 per cent reported that they had stopped but were actively planning to start cycling.

Cycling for Health & Wellbeing

“The second week I’ve gone for a short ride before getting Sunday dinner ready. Definitely makes me feel better.” Aurelia, 50s, Reading

“It was good exercise [riding the e-bike] and I felt that I’d really accomplished something. If you’d suggested this to me a year ago I’d have dismissed the possibility of cycling this distance out of hand.” Harvey, 60s, Oxford

“Really enjoying the time on the e-bike. Beginning to wonder if I will find my own cycle hard work. Feel fitter and sleeping extremely well.” Amanda, 60s, Reading

“I feel that the electric bike has enabled us to make journeys that we might not otherwise have done and get out enjoying the countryside.” Alysia (and husband), 50s, Oxford

Cognitive Tests and Impact on Wellbeing

The results of the cognitive tests indicated that cycling may improve spatial reasoning, executive function and mental health and wellbeing.

Spatial Reasoning: E-bike and pedal cycle groups made fewer errors and demonstrated faster reaction times compared to before the trial. This suggests that both physical exercise and engaging with outdoor environments can improve spatial reasoning.

Executive Function: E-bike and pedal cycle groups showed improved performance compared to pre-trial. When holding the amount of time spent cycling each week constant, both e-bike and pedal cycle groups demonstrated an increase in their verbal fluency score (the ability to update information in working memory) compared to a control group who did not cycle.

Wellbeing: The questionnaire measuring psychological wellbeing (Ryff & Keyes, 1995) detected a slight increase in overall wellbeing

for cyclists after the trial compared to before the trial. The questionnaire measuring mental health (SF36; Ware & Sherborne, 1992) showed a marked improvement and was stronger for e-bike participants (**Figure 1**). There was also a slight improvement in positive affect (PANAS; Watson et al., 1988) for cyclists after the trial. For the e-bike group, in particular, there was a decrease in negative affect suggesting that e-biking may improve emotional wellbeing. There was also perceived improvement to physical health particularly for the e-bike group (SF36; Ware & Sherborne, 1992).

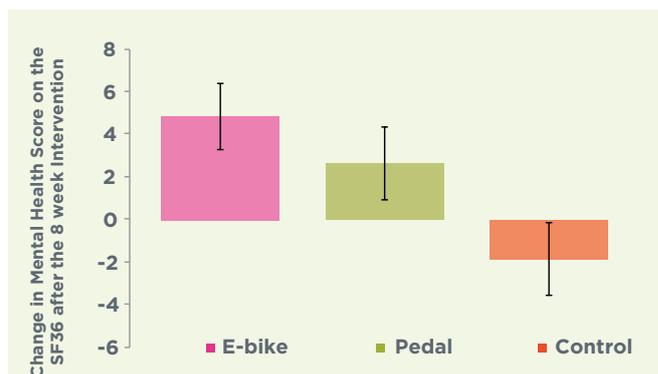


Figure 1. Change in mental health (SF36) score after the cycling intervention for all participant groups - A positive score indicates better performance (Source: Ware & Sherbourne, 1992)

This aspect of the cycle BOOM study has demonstrated that there is the potential to engage a significant market of older and retired people contemplating cycling as part of a personal project for healthy ageing and that this can have a positive impact on health and wellbeing.

Following the trial, fourteen participants purchased new e-bikes and a further five purchased one of the e-bikes used for the project all at a discounted price.



Scan to view videos of participants talking about their experiences, or visit: www.cycleboom.org/key-findings-videos

Key Recommendations

1. Develop and promote national and local programmes and events to engage older people with cycling.
2. Promote places in the local area and beyond where older people can cycle in safety and comfort and improve their confidence and skills.
3. Promote cycle training for older people through Bikeability¹ and work with partners to develop a specific e-bike training module as part of the national training scheme.
4. Provide cycle maintenance services specifically aimed at older people to ensure cycles are kept reliable and efficient.
5. Include information about cycling in literature preparing people emotionally for retirement and as part of planned driving cessation programmes. This should highlight the potential for cycling to improve wellbeing and information on organisations able to provide support and advice. For example, see Retirement Reinvented².
6. Include more images of older (and female) cyclists as well as intergenerational activity (e.g. cycling with grandchildren) in campaigns to promote cycling.
7. Promote the positive benefits of cycling including fun, freedom, sense of achievement and social participation - the ability to access the outdoors with other people - and the contribution this can make in promoting health and wellbeing.
8. Tackle the general misperception that e-biking is 'cheating' and promote its potential benefits to health and wellbeing.
9. Provide information on cycling (benefits, programmes and events) for older people through the National Health Service and in partnership with the cycle industry and national cycling organisations.
10. Conduct further research to factor the cost-benefit of planned schemes for cycling (and walking) for those age 65 and over into Health Economic Impact (HEI) assessment (e.g. WHO HEAT tool³).
11. Broaden the narrative on the benefits of cycling to include, not only physical activity, but also 'therapeutic mobility' through the opportunity it gives for social contact, stress reduction, time alone, sense of achievement, independence and control.
12. Promote cycling on prescription and programmes that help people with different conditions and needs to get out cycling.
13. Provide local programmes to help older people maintain and improve flexibility and balance required for cycling.
14. Support cycling as a mobility aid and part of care and wellbeing needs in Personal Health Plans and budgets⁴.
15. Learn from the Marmot Cities in tackling health inequalities and encourage cycling as something other than exercise - getting older people more active 'without knowing it'. See Coventry Marmot City programme⁵.

¹ <https://bikeability.org.uk/>

² http://www.retirementreinvented.com/Articles/63563/Retirement_Reinvented/Health/Cycling.aspx

³ <http://www.heatwalkingcycling.org/>

⁴ <http://www.nhs.uk/choiceintheNHS/Yourchoices/personal-health-budgets/Pages/about-personal-health-budgets.aspx>

⁵ <https://www.youtube.com/watch?v=Bsul-ayjElw>

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Further Briefing Notes, a Summary Report of Key Findings and Recommendations and a series of short videos from the cycle BOOM study is available at www.cycleboom.org



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