



## Lay summary

### Gender and the e-bike: exploring the role of electric bikes in increasing women's access to cycling and physical activity

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#### OVERVIEW

- We explored whether e-bikes can improve women's transport options, and make it easier for them to get enough exercise.
- We found that e-bikes can make it easier for women to cycle, by providing them with higher quality bikes, and enabling them to carry kids and keep up with traffic, while sweating less in public. We also found that e-biking may make bike shops more welcoming places for women.
- We concluded that e-biking may help women fit into fast biking environments, rather than adapting biking infrastructure to fit a style of slower cycling that may suit many women. Finally, we found that there is a need for financial support to enable low-income women to access e-bikes.

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In almost all societies women have less access to transport than men, and fewer opportunities to move and to exercise. This has negative impacts on women's health and social and economic opportunities. In this research project, we explored whether e-bikes might make it easier for women to get enough exercise, and improve women's transport options. Our study was set in Tāmaki Makaurau Auckland, Aotearoa New Zealand: a high-income country setting, where cycling is now rare. Cycling has multiple benefits: helping people to move around cities while meeting exercise needs at the same time. But, in cities that are mainly set up to encourage driving, like Tāmaki Makaurau, cycling feels dangerous, and has become less popular. And, in these types of cities, women often find it particularly difficult to cycle. In this research we asked what difference e-bikes could make to this situation: Can they make it easier and more attractive for women to access the benefits of cycling? What impact do e-bikes have on the ability of women to exercise and to participate in society? Do e-bikes challenge or reinforce traditional gender ideas around who can exercise and who has access to transport and movement? We interviewed women who use e-bikes, bike shop owners, and people who design cycling policies and infrastructure to find answers to these questions.

Tāmaki Makaurau is Aotearoa's largest city, and it is built on a series of old volcanoes. It is hilly and spread out, and it has very high rates of driving, and low rates of cycling (0.9% of daily trips are made by bike). Like most cities where cycling is rare, about three quarters of cyclists are men. But our study suggested that e-bikes might help to shift

that. We counted cyclists on a popular biking route into the city, and found that, compared to regular cycling, e-biking was nearly evenly split between men and women. And our interviews pointed to some likely reasons for this.

Lots of previous research has highlighted the reasons why cycling is particularly difficult for women in cities where rates of cycling are low. Cities with poor quality cycling infrastructure tend to require faster cycling, greater mixing with car traffic, and a higher tolerance for risk and injury. With greater care responsibilities, women in general tend to have a lower tolerance for cycling risk. Gender stereotypes also discourage strength, physical exertion, and sweating amongst women: this reduces the attractiveness and practicality of the fast cycling required to keep up with traffic in car-dominated environments. In our research, we found that e-bikes could help to reduce some of these barriers to cycling. E-bikes can help women bike faster, keeping up with cars, and reducing the requirement for high levels of strength and stamina to cycle. They can also reduce sweating, enabling women to meet social requirements to look 'feminine' while they ride, and when they arrive at work. Because they make it easier to carry stuff, including kids, e-bikes can also make it easier for women to meet their care responsibilities on a bike.

Our study suggests that e-cycling can provide women with valuable new opportunities for exercise, or the ability to keep exercising after becoming a mother. Transport cycling is a particularly efficient way to fit exercise into your day, so, if e-bikes make cycling possible, they may be particularly beneficial for women, who have

less time available for exercise. We found that women in larger bodies, who experience more discrimination in exercise environments like gyms, particularly appreciated the exercise opportunities provided by e-cycling. Finally, the interviews with both e-cyclists and bike shop owners suggested that e-cycling may be increasing the quality of bikes available to women and reducing sexism within bike shop environments. Women's standard bikes in general have tended to be lower quality and less functional than men's bikes; and e-bikes give women an opportunity to try bikes which are well set up and designed for successful daily use (with integrated chain guards, lights, panniers etc). Many e-bikes are more 'unisex' in design (e.g. with low step-through frames), increasing the perception that biking is for 'everyone'. The greater proportion of women amongst e-bikers may also be making bike shops more interested in and responsive to women's biking needs, making bike shops more inclusive and welcoming places for women.

Are there any downsides to e-cycling for women? Our study suggested that in some ways e-cycling helps women adapt to fast, higher risk cycling environments, rather than forcing cities to adapt cycling environments to make them safer and more attractive for women, and those they are caring for. Women may be able to bike faster, keep up with cars, and carry kids on a bike; but the pleasures and safety associated with slower cycling, including dependants being able to cycle on their own, are lost in the efforts to just speed everyone up to fit in with car traffic. Making it easier for women to fit in their longer 'double day', and maintain feminine standards of presentation on a bike, also in many ways reinforces gender expectations that make

it harder for women to get enough exercise in the first place. Finally, because e-bikes are more expensive than most regular bikes, they are largely not affordable for low-income women and we recommend subsidies in some form to increase access. Overall, our study showed that e-bikes open up important new opportunities for women to take advantage of the benefits of cycling, including getting enough exercise to maintain good health.

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