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London's bicycle sharing scheme has had positive overall health effect

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London's bicycle sharing scheme has had a positive overall health effect, but the benefits of cycling in the cycle hire zone are clearer for men than for women and for older users than for younger users, finds a study published in The *BMJ* today.

The authors say the potential benefits of cycling "may not currently apply to all groups in all settings."

Over 600 cities around the world have implemented bicycle sharing schemes, but there is very little published evidence on the health effects of such schemes.

So researchers at the University of Cambridge, University College London and the London School of Hygiene and Tropical Medicine set out to estimate the health impacts of London's cycle hire scheme on its users.

Using registration and usage data collected from April 2011 to March 2012, they modelled the medium term health impacts of the scheme on male and female users of different ages, by estimating changes in physical activity, road traffic injury rates, and exposure to air pollution.

The authors used a composite term to describe the impact of ill health and death, known as DALYs, or disability adjusted life years.

From April 2011 to March 2012, 578,607 unique cycle hire users made

a total of 7.4 million cycle hire trips and thereby generated 2.1 million hours of use.

This equates to 12% of the estimated 61.2 million cycle trips made by adults each year that started or ended in the cycle hire zone, and 10% of the estimated 20.8 million hours of cycling duration.

Results suggest that the scheme appears to have had a positive overall health effect, with these benefits reflecting reductions in diseases affected by physical inactivity.

There was no evidence that cycling on a bicycle sharing scheme was more dangerous than own bicycle cycling; indeed, if anything there was a trend in the opposite direction, further boosting the benefits of the scheme to date. However because the London Cycle Hire scheme hasn't been operating long enough to get a very precise estimate of the true injury rates on the scheme, the researchers also repeated their analyses using background injury rates for cycling in the hire zone (i.e. injury rates for all cycling, not specifically for cycle hire cycling).

When using these background injury rates, the researchers found that the ratio of benefits to harms of cycling in central London vary markedly by age and sex.

At older ages (45-59 years), the benefits of cycling were much larger than the harms. But in the youngest age group (15-29 years), the medium term benefits and harms of cycling in central London were both comparatively small and potentially negative.

When the researchers analysed the results by sex, they found smaller benefits among women, largely reflecting higher background fatal injury rates for female cyclists in central London. The authors stress that these results by age and sex relate to cycling in general in central London, not

specifically to cycling on the hire bikes.

"Our findings indicate that benefits of cycling in central London could be substantially increased both by increasing the share of trips made by older users and by reducing the risks of injury," say the authors.

They point to the Netherlands, where a comprehensive and well maintained system of cycle tracks, physically protected from fast motor traffic, "have helped to make cycling widespread at all ages and reduce the risks of injury."

Providing similar quality infrastructure in London "might help realise the substantial potential health benefits that cycling could offer at population level," they conclude.

More information: www.bmj.com/cgi/doi/10.1136/bmj.g425

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