Essential Evidence on a page - No 4
Cycling and all-cause mortality

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As noted in Essential Evidence No.3, there are many types of research evidence. When assessing the health efforts of cycling there is, as of 2008, a significant body of literature to back up the assertion that cycling has a positive impact on health. This includes long-term epidemiological studies[1] to experimental designs. Studies which follow cohorts of subjects over time and compare the relationships between different variables provide strong evidence for associations between a behaviour, such as cycling, and health.

The most substantive epidemiological study to date was carried out in Copenhagen involving 13,375 women and 17,265 men aged 20-93 who were randomly selected from a population of 90,000 living in central Copenhagen.[2] Of this cohort, 14,976 cycled regularly to work, for about three hours per week on average. The study found that cycling has a strong protective function.

Using self-reported assessments of health, blood pressure, cholesterol, Body Mass Index, and risk factors such as smoking, the researchers concluded that:

> "Even after adjustments for other risk factors, including leisure time activity, those who did not cycle to work experienced a 39% higher mortality rate than those who did."

This is a very important finding. It provides direct evidence from a large scale study that regular cyclists are likely to have a lower risk of death compared to non-cyclists, irrespective of other physical activity they do. Additionally, later analysis has shown higher death rates among those who reduced their level of cycling compared to those who continue to cycle.[3]

The likely explanation for the substantially greater protection from all cause mortality (death fro all diseases) for cyclists is that cycling is practised at a higher relative intensity than many other activities and so over time reduces cardiovascular strain in daily tasks due to higher fitness, and both increases the use of fats as energy source and results in favourable changes in blood HDL cholesterol.[4] This has been reported in an earlier study of cycle commuting.[5]

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1 Epidemiology is the study of factors affecting the halth and illness of populations, and serves as the foundation and logic of interventions made in the interest of public health and preventive medicine.

2 Andersen, L, B., Schnohr, P., Schroll, M., Hein, H. 2000 All-cause mortality associated with physical activity during leisure time, work, sports, and cycling to work, Archive of Internal Medicine, 160: 1621-1628. Freely available from http://archinte.ama-assn.org/cgi/search?fulltext=cycling+to+work

3 Anderson, L.B. 2000 Personal communication, cited in Cavill, N. and Davis, A. 2007 Cycling and health. What's the evidence? London: Cycling England

4 When measuring cholesterol, any contained in HDL particles is considered protection to the body's cardiovascular health.

5 Oja, P., Vuori, I., Paronen, O. 1998 Daily walking and cycling to work: their utility as health-enhancing physical activity, Patient Education and Counselling, 33: S87-94.