

This Month in *Preventive Medicine*

## Come on, Come on, Do the Loco-Motion

This themed issue of *Preventive Medicine* comprises articles following our call for papers on Self-Transportation, Public Transportation, and Health. Prevention-wise, the logic is that using self- or public transportation is likely to increase physical activity and counter the overall trend toward obesity that most populations of the world are now experiencing. The problem is that in countries for which data are available, both the cycling fraction of road traffic and the number of miles walked are declining ([Dora, 1999](#); [Haines et al., 2000](#)).

The harvest of papers has been rewarding. They show how far we currently are in the process of assembling evidence in support of the self/public transportation and health connection, but they also reflect the deficits in the experimental evidence needed to demonstrate that improving access to public transportation and modifying the built environment to stimulate walking and biking are going to make a meaningful difference in terms of public health.

The barrage of recent media coverage on global warming has probably persuaded most of us to at least think about our own personal ecological footprint (EF), especially in terms of our heavy dependence on the automobile. The EF can also be calculated for whole environments like countries and cities, as well as for relevant subgroups such as commuters utilizing different transportation modes to get to work. [Zheng \(2008\)](#) points out that even though using public transport is two to four times more efficient land use-wise than driving our own cars, the relative contribution of the latter to the U.S. EF might be as low as 3%.

In theory, however, walking associated with public transit can plausibly have a substantial impact on obesity, costs, and well-being as shown by [Edwards \(2008\)](#) on the basis of a re-analysis of a nationally representative U.S. transportation survey. A corresponding protective effect on cardiovascular diseases can also be expected as shown by [Hamer and Chida \(2008\)](#), who computed an overall 11% reduction in risk for commuters who walk or bike to work in their review of eight randomized trials.

Moreover, active transportation to work by men was associated with less overweight and/or obesity in Sweden ([Lindström, 2008](#)) and southeastern Australia ([Wen and Rissel, 2008](#)). Both studies were cross-sectional so it cannot be ruled out that slim people preferentially opt for active commuting as opposed to the more appealing conclusion that active commuting prevents people from gaining weight. Interestingly, in both populations only around one of every six commutes involved public transportation.

Improving transportation-related physical activity can only be achieved when appropriate adaptations are made to the built environment. Three papers originating from Australia and a separate commentary address various aspects of this issue for walking. [McCormack et al. \(2008\)](#) report that proximity to bus stops or transit stations is associated with more transport-related, but not recreational, walking, and [Sallis \(2008\)](#) elaborates on three specific reasons why the latter study is innovative. [Chin et al. \(2008\)](#) utilize a pilot study to point out a potential methodological pitfall: many existing databases employed for investigating neighborhood accessibility and connectivity exclude non-motorist travel routes, which can lead to biased results in assessing pedestrian walkability. In another methodologically oriented paper on the baseline results of the RESIDE project, [Giles-Corti et al. \(2008\)](#) offer specific recommendations for improving the design of neighborhood walkability monitoring studies.

Another paper and two letters to the editor focus exclusively on biking. In a study of gender differences in bicycling preferences assessed by directly observing over 6,500 cyclists likely to have been traveling to and from the Melbourne, Australia, central business district in the morning and afternoon, [Garrard et al. \(2008\)](#) found that more female (just 20% of all) cyclists preferred to use bike routes separated from motorized traffic. Thus, convincing more females to cycle to work may involve constructing off-road bike lanes, which are more costly to build than bike lanes alongside roads. In a similar vein, [Cohen et al. \(2008\)](#) report that males but not females increased their usage of a new bike path in Los Angeles in a cross-sectional, before and after completion, direct observational study. As part of their description and evaluation of a new pilot program to increase cycling among New Zealand children, [Darling and Richards \(2008\)](#) report that although all the program attendees were required to have safety helmets, a quarter of them were unsafe because they were either damaged or the wrong size. Thus, they called for better monitoring of bicycle safety helmets.

Actively commuting to and from school or university are potentially important sources of physical activity for children and young adults, and the many existing infrastructures of school bus routes would seem to obviate the need for developing new public transport systems in that arena. Five more papers and a commentary address various aspects of these issues. Unfortunately, if the long-term trends between 1971 and 2003 toward much more driving/being driven and much less walking to and from school reported by [Van der Ploeg et al. \(2008\)](#) for 5–14 year olds in Sydney, Australia, are applicable to other parts of the world, it appears that we may be squandering our opportunity to “teach our children well.” Likewise, the findings of [Pabayo and Gauvin \(2008\)](#) among 9, 13, and 16 year olds in Quebec in 1999 that girls in particular and children in general from higher income, immigrant, and/or rural dwelling families were less likely to walk to and from school, with much more pronounced differences for the teenagers, are not good news. [Bringolf-Isler et al. \(2008\)](#) identified personal and environmental factors that may impact active commuting to school by German, French, and bilingual speaking Swiss 1st, 4th, and 8th graders. [Kayser \(2008\)](#) comments further that while active commuting to school is still by far the norm in Switzerland, childhood obesity is nonetheless increasing and active school commuting may be decreasing.

One specific finding of [Bringolf-Isler et al. \(2008\)](#) was that safety was a major correlate of commuting to school by car. But how dangerous is it to walk or bike to school? Indeed, all 28 systematic reviews and meta-analyses on transport and health identified by [Morrison et al. \(2003\)](#) were concerned with injury prevention and all but four were concerned with preventing motorcar injuries. [Schofield et al. \(2008\)](#) show that, at least in Australia, while the risk of having an accident is seven times higher for bike than for car travel, it is still small in absolute terms (46 per million trips). Thus, encouraging children to walk or bike to school will require more sidewalks and marked bike lanes, safer crosswalks, lower traffic speeds, and other traffic calming measures. Most of these interventions work ([Morrison et al., 2003](#)). One place where implementing the latter measures seems to have been taken seriously is the university setting. Perhaps not surprisingly, [Sisson and Tudor-Locke \(2008\)](#) used accelerometry and GIS data in a small preliminary study to determine that among university students living within five miles of campus, those who regularly cycled to school accumulated more minutes of physical activity and spent more time actively commuting than students who regularly used motorized means to get to school, and derived almost half of their daily physical activity expenditure from transportation cycling.

The main messages that emerge from these observational studies, reviews, and commentaries on transportation and health are that active commuting, including using public transportation, is much more common for going to and from school than it is for going to and from work, that more experimental data are needed to show the health impact of one mode of commuting versus another, and that active commuting needs to be actively promoted. It's like the loco-motion: you'll get to like it if you give it a chance now.

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