

Why No Support for an Association Between Active Commuting to School and Weight Status in the Literature?

Dear Editor,

Recently, the article "Systematic Review of Active Commuting to School and Children's Physical Activity and Weight," authored by Murray C. Lee, Marla R. Orenstein, and Maxwell J. Richardson, was published in volume 5 of the *Journal of Physical Activity and Health*.¹ The main findings regarding weight were: "Of the 18 studies, 9 found no significant association between active commuting and any measure of body composition. An additional 5 found significant results only for subgroups of the study population or for limited measures. Only 3 studies found a consistent association between active commuting and lower body weight, and the remaining 1 study found a significant association between active commuting and higher BMI." The authors then state: "From this information, there does not appear to be sufficient evidence to support an association between active commuting and BMI, overweight, or obesity in schoolchildren."

The inconsistency in the reviewed articles is clear, and no firm conclusion can be made from the studies. However, there are a few points, not discussed in the review article, that need attention.

The sample sizes of the reviewed studies were clearly associated with the results presented. Based on Table 2 in the review, the three studies reporting consistent negative associations had a mean sample size of 7892 (range: 6078 to 10,771), the one study reporting a positive association had a sample size of 2714, the five studies reporting inconsistent associations had a mean sample size of 2046 (range: 320 to 4448), and the nine studies reporting no association had a mean sample size of only 707 (range: 114 to 1596).¹ May low statistical power be an issue in some of the studies?

Cycling is usually more energy intensive per unit of time than walking; e.g. Shepard² has calculated that sedentary adults would have to walk for 22 min twice a day 5 days a week in order to spend an additional amount of energy enough for reducing all cause and cardiovascular mortality, while the same calculated figure for cycling was only 11 min per trip. Also, higher relative work intensity has been shown independently to be associated with improved health.^{3,4} The rather low intensity of walking to school might not benefit fitter and/or younger people regarding health outcomes.² Those who cycle to

school have been reported to be more physically fit than those who walk,^{5,6} and a change in travel mode from non-cycling to cycling to school was a significant predictor of fitness at follow-up 6 years later in a Danish longitudinal study.⁷ Walking was not associated with higher fitness levels compared to non-active commuting.⁵⁻⁷ Cycling might have a greater potential for preventing excess weight gain among children and adolescents than walking. Most reviewed studies were conducted in populations with low frequencies of cycling to school, and most studies did not separate cycling from walking to school in the analyses.

It is possible that the lack of consistency in the reviewed studies is due to the lack of separating cyclists from walkers, and it may be wrong to generalize observations to active travel instead of just concluding on walking. The low (sometimes very low) frequencies of cycling to school in the populations studied makes it difficult to conclude on the benefit of cycling in these studies.

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