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# LETTERS

## OBESITY AND CHOICE OF TRANSPORT

### Authors' reply to McGregor and Foley

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McGregor and Foley draw attention to the design of our study on mode of commuting and body composition.<sup>1-3</sup> We concur with their comments that cross sectional data do not allow causal inference, but previous studies using quasi-experimental study designs have provided indirect evidence that active and public transport uptake is associated with improvements in body mass index.<sup>4</sup> Further research is, however, required to unpick causal processes and mechanisms.

Longitudinal datasets that offer a combination of relevant exposure variables (mode, frequency, duration of commute), objectively measured health outcomes, and the necessary range of socioeconomic and behavioural covariates are unfortunately rare. Currently, the understanding society study does not have repeated objective health outcome measures. In the future, when the same people have been revisited for the second wave of health assessment data, it will be possible to investigate whether a change in mode of commuting—for example, a switch from private transport to public or active transport—between the two time points independently predicts a change in body mass index or percentage body fat. In addition to utilising panel studies, opportunities to exploit natural experiments—for example, the introduction of new public transport schemes—should be taken, as these also provide exciting avenues for disentangling cause and effect.

Regarding the point about differences in percentage body fat being within the bounds of normal variability of measurements in bioelectrical impedance analysis, we think that distinguishing between effects at the individual and population level is important. For an individual person, a body fat change of 2-4% may be within the margin of technical and biological variability. Across a large sample of people, however, we would expect some body fat measurements to be higher than the “true” value and some to be lower. This variability is expected to be cancelled out when looking at mean effects across groups containing large numbers of people.

Competing interests: None declared.

- 1 McGregor RA. Differences observed in study of associations between active commuting, body fat, and body mass index are unlikely to be clinically significant. *BMJ* 2014;349:g5915.
- 2 Foley P. Objective of study of associations between active commuting, body fat, and body mass index seems not to have been directly addressed. *BMJ* 2014;349:g5919.
- 3 Flint E, Cummins S, Sacker A. Associations between active commuting, body fat, and body mass index: population based, cross sectional study in the United Kingdom. *BMJ* 2014;349:g4887. (19 August.)
- 4 Webb E, Netuveli G, Millet C. Free bus passes, use of public transport and obesity among older people in England. *J Epidemiol Community Health* 2011;66:176-80.

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