To:	Transport & Health Policy Makers, & Practitioners
From:	Prof Adrian Davis, TRI, Edinburgh Napier University
Date:	19th December 2018
Subject:	Essential Evidence 4 Scotland No. 3. Do just the physically active do more active travel when environments improve or are changes shared across the population?

Top line: Environmental improvement encourage the less active to take up walking for transport, as well as encouraging those who are already active to walk more.

Robust evidence on the impact of environmental changes on activity levels is beginning to emerge, but many existing studies have significant limitations in conceptualising and defining exposed populations and constructing controlled comparisons, or are limited by short follow-up periods or imprecise measures of activity. For example, some studies report a relatively small mean change in activity, which may mask substantial changes in some individuals. These observations beg the question whether these interventions have encouraged those who were already active to do more, or have encouraged the less active to take up new activity. Understanding how different population groups respond to interventions is essential for assessing their overall impacts on health and health inequalities, and for the design and targeting of future interventions.

Connect2 was a programme of engineering projects that aimed to make local walking and cycling journeys easier by constructing or improving routes at sites around the UK. The before-and-after evaluation of the Connect2 projects in Southampton, Kenilworth and Cardiff found that living closer to the new infrastructure was associated with increases in walking, cycling and overall physical activity at 2-year follow-up. Previous analysis concluded that the new routes were mostly used for walking.[1]

Researchers described changes in walking in 1304 participants, and identified groups of participants whose walking behaviour changed in similar ways and investigated the extent to which walking group membership differed by sociodemographic or health characteristics or exposure to the intervention.[2] They employing descriptive and Latent Class Analysis[3] approaches to identify groups whose walking behaviour changed in similar ways over 2 years using data from a study of new transport infrastructure. Five distinct trajectories were identified: 1) consistently low; 2) consistently high; 3) sustained decreases 4) short-lived increases; 5) and sustained increases in walking. There were socioeconomic differences between the groups identified with these trajectories. Compared to those who reported consistently low levels of walking for transport, participants who reported short-lived or sustained increases were more likely to have lower household incomes, lower levels of education and no access to a car. However, the findings for uptake of walking were that those with lower levels of education were less likely to take up walking for recreation or transport, and those with lower incomes were less likely to take up walking for recreation. Lastly, the fact that exposure to the intervention was associated with sustained increases in walking over 2 years supports the findings of other studies which suggest that the effect of environmental interventions on physical activity patterns may take some time to emerge.

[1] Goodman., A, Sahlqvist., S, Ogilvie D. *2013.* Who uses new walking and cycling infrastructure and how? Longitudinal results from the UK iConnect study. *Preventive Medicine,* 57:518–24.

[2] Panter, J., Oglivie, D. on behalf of the iConnect consortium, 2017. Can environmental improvement change the population distribution of walking? *Journal of Epidemiology and Community Health*, 71: 528-535.

[3] Latent Class Analysis is a statistical method for identifying unmeasured class membership among subjects using categorical and/or continuous observed variables. For example, you may wish to categorize people based on their drinking behaviours (observations) into different types of drinkers (latent classes).