Food deserts or food swamps? Exploring access to healthy and unhealthy food retail by level of neighbourhood material deprivation in southern Ontario

Background:
While U.S. research consistently documents worse access to healthy food retail (FR) and better access to less healthy FR in more deprived urban neighbourhoods, patterns from other developed counties, including Canada, are less consistent.

Objectives:
We investigated the existence of systematic differences in access to healthy and unhealthy FR across neighbourhoods of varying socioeconomic composition in three southern Ontario settings (Toronto, Brampton/Mississauga and Hamilton), and whether urban form factors helped to explain such differences.

Methods:
Using geographic methods, we assessed the median number of healthy (supermarkets, grocery stores and fruit/vegetable shops) and unhealthy FR (fast-food outlets and convenience stores) in 2008, as well as proportion of all establishments that were unhealthy, within a 10-min walk of where most people live. Neighbourhoods (urban census tracts) were grouped into quintiles of material deprivation according to the 2006 Ontario Marginalization Index. Multivariate regression models assessed the association between neighbourhood deprivation and FR access, adjusting for population density, proportion of detached residential housing and public transit use.

Results:
The most materially deprived neighbourhoods had access to at least twice as many healthy FR outlets relative to the least deprived areas. While more deprived areas in Hamilton and Brampton/Mississauga had similarly better access to unhealthy FR, the reverse was true in Toronto. Urban form features almost entirely explained these associations in some settings. The proportion of all FR that was unhealthy was unrelated to material deprivation or urban form, except in Toronto, where the most deprived neighbourhoods were exposed to a slightly smaller share of unhealthy FR.

Conclusions:
We find no evidence of systematically worse access to healthy FR in more disadvantaged areas (i.e. food deserts). However, access to unhealthy FR was generally better in more disadvantaged neighbourhoods (i.e. food swamps), but this pattern varied by city.

What are the implications of your research on practice or policy?
Municipality-specific policy options to improve FR environment in disadvantaged areas need to look beyond merely improving access to healthy FR but also toward limiting exposure to unhealthy FR and/or promoting healthier food options within highly accessible convenience stores and fast-food outlets.