Tracking neighborhood eating habits to promote healthier diets

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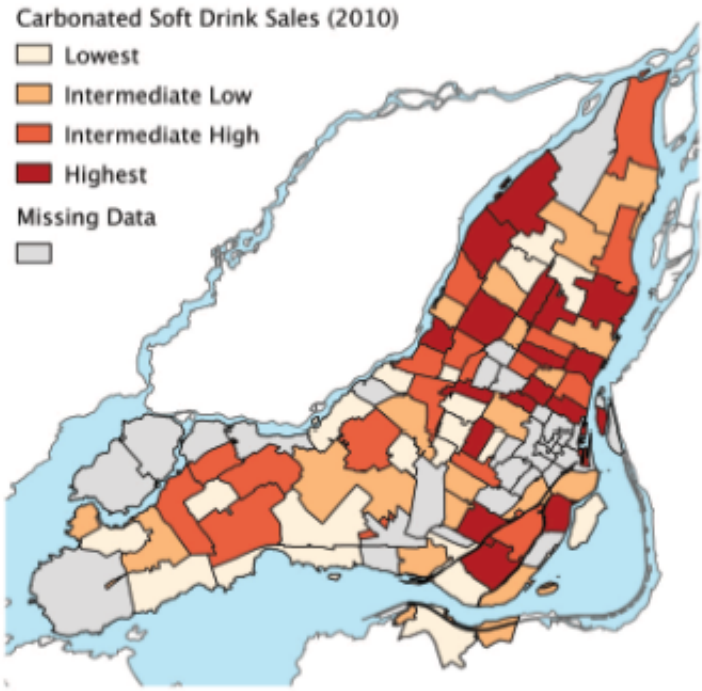


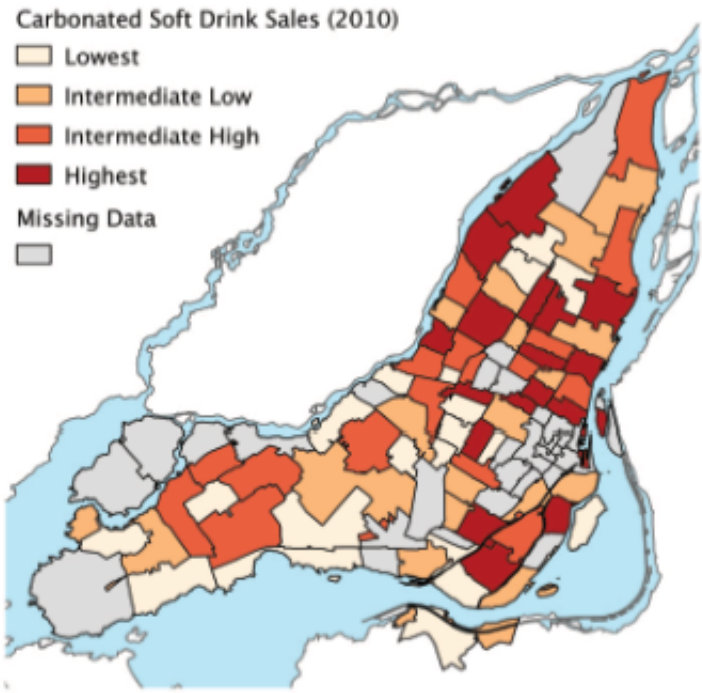
This is McGill Prof. David Buckeridge's map of the island of Montreal and his study tacking neighborhood eating habits using digital data. Credit: Prof. David Buckeridge

Poor food choices, such as overconsumption of carbonated soft drinks, are an important factor driving the global obesity epidemic and have been linked directly to diabetes and heart disease. While public health

agencies are working to help people to make healthier choices, monitoring the effectiveness of these efforts has been costly and difficult. But now, using the same digital data employed by marketers to promote food products, McGill University's David Buckeridge has developed a way for health agencies to track Montreal consumers' food choices, neighborhood by neighborhood. This novel approach could pave the way to better monitoring of consumers' behavior and more targeted efforts to encourage healthier diets.

"We've taken data which most grocery and convenience stores generate with digital scanners to identify items at checkout. Companies use these data and produce information for marketing and other purposes", says Buckeridge, a public health physician and associate professor in the Department of Epidemiology, Biostatistics and Occupational Health in the Faculty of Medicine. "We developed a way to use these data towards a positive public health initiative: routine monitoring of eating habits over time in particular pockets of a city to reveal which populations consume foods that can contribute to negative health outcomes."

Buckeridge, who is also a member of the McGill Centre for the Convergence of Health and Economics (MCCHE), and his team measured monthly neighborhood-level purchases of soft drinks using digital data captured by store scanners in Montreal, Canada, between 2008 and 2010, then compared those results with census data describing detailed neighborhood socioeconomic characteristics. With this method, Buckeridge can isolate and measure any food choice, such as processed foods, salt-laden food and food containing saturated fat.



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"We are working with public health agencies to determine how the methods we have developed can be used to monitor the food consumed within a neighborhood and develop strategies to encourage healthier diets. The evidence is clear that promoting healthy eating habits can prevent or reduce health problems, improve quality of life, and reduce health care costs," says Buckeridge, who is also a member of the Research Institute of the McGill University Health Centre (RI-MUHC), "We are aware that biological, geographical, environmental and economic factors as well as social influence impact what people eat. Monitoring and analysis of these factors is critical to inform efforts aimed at promoting healthy eating and preventing chronic diseases such

as diabetes, heart disease, and cancer."

"For each $10,000 decrease in median personal income, we observed a fivefold increase in estimated monthly sales of soft drinks," Buckeridge says. "This indicates that in neighborhoods where families have lower incomes people tend to buy many more soft drinks as compared to neighborhoods where families have higher incomes." Though the link between food consumption and socioeconomics may seem obvious, Buckeridge's metrics provide accurate measurements over time, essential building blocks towards improving global health.

The same approach could be used to monitor meals purchased from restaurants and to measure total neighborhood consumption of dietary components, such as salt and sugar – topics that Buckeridge's team is now addressing in ongoing research. "Using digital data in this application opens the door to monitor specific populations over time you could not previously," he says. "It creates boundless research applications directly related to improving population health."

The results of this research are published in the *Annals of the New York Academy of Sciences*.

Provided by McGill University

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