

Predicting COVID-19 outbreaks with cell phone mobility data

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Mobility tracking using cell phone data showing greater movement of people is a strong predictor of increased rates of COVID-19, according to new data in *CMAJ* (*Canadian Medical Association Journal*).

"This study shows that mobility strongly predicts [severe acute respiratory syndrome [coronavirus](#) 2] SARS-CoV-2 growth rate up to 3

weeks in the future, and that stringent measures will continue to be necessary through spring 2021 in Canada," writes Dr. Kevin Brown, Public Health Ontario, with coauthors.

Until Canadians are widely vaccinated against SARS-CoV-2, nonpharmaceutical public [health](#) interventions such as physical distancing and limiting [social contact](#) will be the main population-based means of controlling the spread of the virus.

"Mobility measures capturing [human activity](#) through anonymized tracking of smartphones are believed to be reasonable proxies of contact rates outside of one's own home; these measures can provide more timely and reliable sources of information on contact rates compared with time-use surveys or contact tracing," write the authors.

Researchers looked at anonymized smartphone mobility data from March 15, 2020, to March 6, 2021, both nationally and provincially, controlling for date and temperature. They found that a 10% increase in the mobility of Canadians outside their homes correlated with a 25% increase in subsequent SARS-CoV-2 weekly growth rates. They looked at the mobility threshold (the level needed to control the virus) and the mobility gap (the difference between the threshold and actual movement).

"The mobility threshold and mobility gap can be used by public health officials and governments to estimate the level of restrictions needed to control the spread of SARS-CoV-2 and guide, in [real-time](#), the implementation and intensity of nonpharmaceutical public health interventions to control the COVID-19 pandemic," the authors write.

More information: *Canadian Medical Association Journal* (2021).
www.cmaj.ca/content/early/2021/04/07/cmaj.210132

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