

To walk or not to walk? That is the question

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Canadians aren't the only people concerned with weather, eh? A new study from McGill and Concordia universities observed pedestrians in nine cities around the world and found people are less likely to walk when temperatures dip below zero, when there's too much rain or too much snow. Published in the journal *Environment and Behavior*, the study was conducted over 170 days from late fall to early summer.

"A 5 degree Celsius increase in temperature was associated with a 14 per cent increase in pedestrians," says first author Luc de Montigny, a Concordia alumnus (BA 1995) and currently a post-doctoral fellow in the Department of Epidemiology, Biostatistics and Occupational Health at McGill University. "A shift from snow to dry conditions was associated with an increase of 23 per cent in pedestrian traffic."

Nine cities, with populations ranging from 18,000 to 1.2 million inhabitants, were observed: Santa Cruz in the Canary Islands; Kilmarnock and Glasgow in Scotland; Rousse in Bulgaria; Gliwice in Poland Oulu and Jakobstad in Finland; Sion in Switzerland; and Ithaca in the United States. From November through May, pedestrian traffic was observed between 7 a.m. and 5 p.m.

"All cities observed in our study were part of the [northern hemisphere](#) and in temperate climate zones," says senior author John Zacharias, a professor in the Department of Geography, Planning and Environment at Concordia University. "Yet the cities also feature quite different local weather conditions, from snowy, wintery conditions in Oulu to quite balmy year-round conditions in the Canary Islands."

Temperatures in the [Canary Islands](#) rarely fell below 15 degrees Celsius, while Oulu was found to be the coldest location with an [average temperature](#) below zero. Days of precipitation varied considerably among locations, with Kilmarnock and Glasgow having about five times as many [rainy days](#) as Sion or Ithaca.

"Precipitation had by far the largest effect on [walking](#) levels. The largest decrease was seen in Rouse, where walkers decreased by 42 per cent," says Zacharias, noting the most cities experienced an average 32 per cent decrease in walking during rainy or snowy days. "Conversely, there is a substantial and significant rise in pedestrian flow when it's not raining or snowing. A 5 per cent increase in sunlight was associated with a 2 per cent increase in walkers."

"Low air temperature had a much smaller impact on walking rates than might be supposed for temperate and Nordic cities," adds de Montigny.

A walk with Big Brother?

Data was collected using fixed, close-circuit cameras zeroed onto public plazas, squares and parks. While pedestrians didn't necessarily know they were being recorded, de Montigny stresses all security cameras are public and can be accessed via Google: "Low camera resolution, as well as distance from pedestrians, means pedestrian anonymity was preserved."

The authors state more people would walk if urban planners would design neighbourhoods that temper climatic extremes and use surfaces that are conducive to walking. Prompt snow removal and efficient drainage would also encourage pedestrian traffic.

"Given how obesity is increasingly affecting populations around the world, our study provides insight that shows people do walk when

prepared for the weather," says de Montigny. "Walking really doesn't require big lifestyle changes and can be facilitated when walking conditions are optimal."

More information: The paper, "The Effects of Weather on Walking Rates in Nine Cities," published in the journal *Environment and Behavior*, was coauthored by Luc de Montigny of McGill University and Richard Ling and John Zacharias of Concordia University.

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