Geography matters to your health, researchers say

June 2 2011

Believing geography matters significantly to the health of Canada's next generation, researchers at The University of Western Ontario are using innovative technology to measure and monitor the physical activities of 1200 children in 60 elementary schools across Southwestern Ontario.

The Spatial-Temporal Environmental Activity Monitoring (STEAM2) study follows an earlier sample of 80 children living in different London neighbourhoods, tracking the activities of identified Grade 6 students for one week this spring and revisiting the same children in Grade 7 in the fall.

By outfitting each student with a tiny device called an 'accelerometer' to measure physical activity levels, along with a small global positioning system (GPS) to monitor where activities take place, Jason Gilliland, Urban Development Program director in Western's Department of Geography, is analyzing various environmental influences on children's health associated with obesity and obesity-related behaviours.

Appreciating that one out of every three Canadian children is overweight or obese, Gilliland is using a geographic information system (GIS) to analyze how communities are designed in terms of potential barriers and enablers for physical activity and healthy food consumption.

The study's overall objective is to assess how built environments impact physical activity and eating behaviours, by determining differences among children from contrasting environments in urban areas, suburban

neighbourhoods and rural regions.

"Our work is based on the idea that where you live matters. We've all heard the saying 'You are what you eat', but it's also true that you are where you live," says Gilliland. "We know of no other study that focuses on the full range of environments: urban, suburban, small town, and rural. Most previous studies deal only with very large cities, so there is a general lack of Canadian studies, especially at the county level, making our study design the most innovative aspect of this project."

Measures include 'walkability' of neighbourhoods and how that impacts whether kids walk or are driven to school, the availability of amenities like parks/green space and how that impacts the amount of physical activity done by the children, as well as exposure to fast food retailers and how that impacts dietary behaviours. STEAM2 also includes an element of 'natural experiment', whereby some children within the study will move schools between the two measurements (spring and fall) due to a prescribed change in schools after Grade 6.

As part of the project, Gilliland and his team are developing a new software program that can be used by planners, developers, and policy makers. The software will be distributed for free, with a goal to provide key information needed to make health-promoting changes to built environment that support physically active outdoor play, healthy eating, and safe and active walking routes to school.

The STEAM2 project is one of three national projects jointly funded by the Heart and Stroke Foundation of Canada (HSFC) and the Canadian Institutes of Health Research (CIHR) with total funding of $545,000. Partners include several area public health units and municipal departments.

Provided by University of Western Ontario