

Risk of cardiac arrest depends on where you live

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Your chances of having a sudden cardiac arrest can depend on where you live, warned Dr. Paul Dorian today at the Canadian Cardiovascular Congress 2012 in Toronto, co-hosted by the Heart and Stroke Foundation and the Canadian Cardiovascular Society.

His study of Greater Toronto Area (GTA) neighborhoods with high and low rates of cardiac arrests found that the factors causing increased risk are complex. "The reasons are more multifaceted than traditional explanations of income, social economic status and education levels," says Dr. Dorian, who is a researcher and cardiologist at Toronto's Kennan Research Centre, St. Michael's Hospital. "It's important to understand these differences to support better [health outcomes](#)."

He says his team is exploring heart-healthy behaviours, cultural and ethnic factors as possible other factors that may account for the large differences in cardiac arrest rates between neighbourhoods.

The research, led by Katherine Allan, PhD candidate, compared 20 GTA neighbourhoods with the highest and lowest incidences of cardiac arrests that take place in the home or public places.

The demographic, social and economic characteristics of the neighbourhoods were compared to identify similarities or differences, including age, sex, income levels, education and social inclusion. Rates of diabetes and [high blood pressure](#) were also compared.

"Cardio-toxic neighbourhoods," a term coined to describe communities with higher incidence of cardiac arrests, have three to five times higher rates of cardiac arrests. Cardiotoxic neighbourhoods tended to comprise older persons with slightly higher rates of diabetes and high blood pressure. No single factor explained the variability between the neighbourhoods.

The study looked at over 5,500 cardiac arrests in the GTA between 2006 and 2010. The residential address of each out-of-hospital cardiac arrest patient was spatially mapped to one of 140 Toronto neighbourhoods.

The 10 neighbourhoods with the highest cardiac arrest rates (cardiotoxic) and the 10 with the lowest rates (cardiosafe) were identified. Cardiotoxic neighbourhoods tended to comprise older people with slightly higher rates of diabetes and high blood pressure.

"The bottom line is that where you live does affect your risk of cardiac arrest. Our research suggests wealth, education and social inclusion are important factors but only explain part of the puzzle," says Dr. Dorian.

The link between our health and where we live is well established, says Heart and Stroke Foundation spokesperson Dr. Beth Abramson. "With Canada's high rates of physical inactivity and obesity, it is more important than ever to build communities that encourage active, healthy lifestyles."

She says healthy community design strategies – such as good public transit, well-maintained parks, and safe, efficient walking and cycling networks – make it easier to get the physical activity Canadians need to promote heart health and maintain a healthy lifestyle.

Abramson recommends that municipal governments, community planners and developers work together to create communities that

support active, healthy living in Canada.

Cardiac arrest is a medical emergency which occurs when the heart suddenly and unexpectedly stops beating. Every 12 minutes someone in Canada has a [sudden cardiac arrest](#). Up to 40,000 occur each year in Canada.

Up to 85 per cent happen in homes and public places such as malls, hockey arenas or workplaces – and half are witnessed by a bystander such as a family member, co-worker or friend. The survival rate (outside of a hospital) is approximately five per cent.

As we continue to advocate for heart-healthy communities, Dr. Abramson says we need to do everything we can to improve survival rates. "The Foundation is working in communities across Canada to advocate for the placement of automated external defibrillators (AEDs) in public places and to train Canadians how to use AEDs in combination with CPR."

She notes that every minute counts: A bystander who knows how to respond to a [cardiac arrest](#) can increase the odds of survival and recovery by 30 per cent or more.

Provided by Heart and Stroke Foundation of Canada

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