

Young, apparently healthy -- and at risk of heart disease

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Atherosclerosis – or buildup of fat in the walls of arteries – is thought of as a disorder of older people but it affects a large number of young men and women, according to a new Heart and Stroke Foundation study.

"The proportion of young, apparently healthy adults who are presumably 'the picture of health' who already have [atherosclerosis](#) is staggering," says Dr. Eric Larose, an interventional cardiologist at the Institut universitaire de cardiologie et de pneumologie de Québec and an assistant professor at Université Laval.

Atherosclerosis can eventually lead to serious problems including [heart disease](#), stroke, or even death.

The study enrolled 168 young adults (age 18 to 35) – half male and half female – who had no known cardiovascular disease or risk factors such as family history of premature heart disease, diabetes, smoking, high blood cholesterol, or high blood pressure.

The team took complete body measurements, including height, weight, body-mass index and waist circumference. They also measured, through magnetic resonance imaging (MRI), various body fat deposits including subcutaneous fat (fat under the skin that you can measure with calipers) as well as fat within and around the abdomen and chest including the amount of intra-abdominal or [visceral fat](#). Ultimately, they measured atherosclerosis volumes of the carotid arteries by MRI.

The researchers found that although a large proportion of subjects didn't have traditional risk factors for atherosclerosis, they did have discrete signs: greater waist circumference, and visceral fat covering the internal organs within the chest and abdomen. Visceral fat is difficult to detect because it surrounds the organs deep inside the body, unlike the fat under our skin that can be easily detected in the mirror or with a pinch of the fingers.

"We know obesity is a bad thing," says Dr. Larose "but we're dropping the ball on a large proportion of young adults who don't meet traditional measures of obesity such as weight and BMI."

He says their message is that beyond simple weight and BMI, measures of fat hidden within (visceral fat) are greater predictors of atherosclerosis. The people with greater visceral fat will have greater atherosclerosis, even if they are young and apparently healthy – and could benefit from preventive lifestyle measures.

Dr. Larose adds that despite having normal weight and BMI, young adults with greater visceral fat have greater atherosclerosis burden, therefore greater risk for clinical events including heart attack and stroke in the long run. "We were encouraged to find that in this young and apparently healthy population, an easy way to measure risk in the doctor's office is through waist circumference," he says.

At any given BMI, an enlarged waist circumference measured with a simple tailor's ribbon was predictive of increased visceral adiposity and of premature atherosclerosis. The prediction of visceral adiposity and of atherosclerosis was almost as precise as by MRI.

Dr. Larose's study verifies earlier research that found that as many as 80 percent of young Americans killed in war or in car accidents had premature and subclinical (hidden) atherosclerosis.

The strength of the present findings is in measuring atherosclerosis in live individuals instead of waiting for an autopsy, and in finding a simple office-based solution in waist circumference.

These results may improve our ability to identify early individuals in need of more robust preventive support to slow the progression of their atherosclerosis.

Heart disease and stroke are leading causes of death in Canada, says Heart and Stroke Foundation spokesperson Dr. Beth Abramson.

"Someone in this country dies from heart disease or stroke every seven minutes," she says. "The good news is that heart disease and stroke are largely preventable by undertaking heart healthy behavior."

She says that the results of this Canadian study form a critical piece of the puzzle. Many of us have risk factors for heart disease and stroke, even if they aren't immediately evident, and it is important to start early in preventing disease.

"You can think of it as a ticking time bomb inside your body that might explode later in life," says Dr. Abramson. "There is a lot you can do to defuse the explosion."

Dr. Abramson recommends that all Canadians follow a healthy diet, be physically active, know and control your blood pressure and cholesterol levels, maintain a healthy weight, be tobacco-free, reduce stress, manage diabetes and limit alcohol consumption. She says that Canadians can ask their healthcare providers to help them reach their goals.

"My message to young adults is that you are not superhuman, you're not immune to risk factors," says Dr. Abramson. "It's important to manage your [risk factors](#) at all ages. Lifestyle will eventually catch up with you. You are never too young to prevent heart disease."

The study was presented today at the Canadian Cardiovascular Congress 2011, co-hosted by the Heart and Stroke Foundation and the Canadian Cardiovascular Society.

Provided by Heart and Stroke Foundation of Canada

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