

Gene machine

Guillaume Paré would be the first to admit that he wears many hats.

A leading genomics scientist and epidemiologist – his genetic and molecular epidemiology lab is one of the largest on the east coast – he is

also a clinician who is using cutting-edge genomic techniques in the war against stroke.

“Stroke used to be a disease of the elderly,” says the McMaster assistant professor of pathology and molecular medicine, who holds a joint appointment in CE&B. “Today we’re seeing a growing number of Canadians having strokes in their 30s and 40s.”

Armed with a Canada Research Chair in Genetic and Molecular Epidemiology, Paré is working to decipher the genetic architecture of strokes and better identify people who are at risk.

“Our early findings show that 23 per cent of young stroke victims – or about 60,000 Canadians – have a genetic mutation that is related to cardiovascular disease. If we

can identify those who have the mutation, we can start targeting them with drug therapies that reduce their cholesterol and blood pressure to minimize the risk.”

It’s a new and evolving area of

research called pharmacogenetics, and Paré is one of the few physician-scientists in Canada with the expertise to tackle it.

He’s already made significant progress, discovering new genetic markers for an anticoagulant that can decrease bleeds by 30 per cent, and another genetic variant that boosts the effects of aspirin in decreasing the risk of stroke.

But the most exciting progress is yet to come, says Paré.

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cholesterol in the blood has led to the development of new drugs that could prevent heart disease within 10 years. If we can repeat this feat through the discovery of yet unknown genes, we might well make cardiovascular disease a thing of the past.”

