

Passage to India



We all know that obesity is a risk factor for diabetes, heart disease and stroke. Eating red meat doesn't help either.

Why then does a South Asian woman on a vegetarian diet who is not obese have a three times higher risk of dying early from heart disease and stroke than a white Caucasian?

The answer may be found in her genes, says Sonia Anand, a McMaster professor of medicine and director of CE&B's Population Genomics Program.

It seems that South Asians are genetically programmed to store fat differently. "They have less space to store fat below the skin," she explains. "The excess overflows into other parts of the abdomen, including the

liver, where it can cause elevated glucose and abnormal lipids, risk factors that can ultimately lead to coronary artery disease."

As leader of the START (South Asian birth cohort) study, Anand is studying two birth cohorts of South Asians in Southern Ontario and another in urban and rural India to find out why Type 2 diabetes and excess adiposity (body fat) are so prevalent among people from the Indian subcontinent.

She is co-leading another study that is collecting health information risk factors from more than 10,000 individuals in 1,000 communities across Canada, including 2,000 Reserve-based Aboriginal people, another high-risk group. They provide blood and DNA samples and submit to MRI scans of their brains, hearts and abdomens in the hope of identifying

biomarkers that could be early predictors of vascular disease.

Marshalling expertise and resources in epidemiology, biostatistics and computational biology, Anand and her team are revealing the complex relationships that surround the prevalence of everything from autism and allergies

to respiratory and infectious diseases.

Anand, who holds the Canada Research Chair in Ethnic Diversity and Cardiovascular Disease, argues that focusing on high-risk groups allows us to learn more about the risk factors that affect us all.

"It can lead us to pinpoint where changes need to be made. An important driver for me is that the results we produce end up making a difference."

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– Sonia Anand