

Risk factors for cardiovascular problems found to be inverse to disease and deaths

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Despite living with the highest risk factors for heart disease, people in high income countries suffer less from serious cardiovascular disease, says an international study by the global PURE (Prospective Urban Rural Epidemiology) collaboration and led by McMaster University researchers.

At the same time, the study found that people in low income countries, although living with fewer [risk factors for heart disease](#), have a higher incidence of serious cardiovascular disease including death.

"These findings were a total surprise," says Dr. Salim Yusuf, lead author of the study being presented to the European Society of Cardiology today. Yusuf is also a professor of medicine of McMaster's Michael G. DeGroot School of Medicine, vice president of research at the Hamilton Health Sciences and director of the Population Health Research Institute (PHRI).

The study followed 155,000 people from 628 urban and rural communities in 17 countries over four continents for nearly four years.

The international research team found risk factors for cardiovascular disease was lowest in low income countries, intermediate in middle income countries and highest in high income countries. However, the incidence of serious cardiovascular disease such as heart attacks, strokes, [heart failure](#) and deaths followed the opposite pattern: highest in the [low income countries](#), intermediate in [middle income countries](#) and lowest in high income countries. Hospitalizations for less severe cardiovascular diseases were highest in the high income countries.

"These results in the high income countries are likely due to earlier detection of disease, better hospital management of the disease and better prevention after an event," said Yusuf. "While

efforts to reduce the risk factors need to be pursued, there should be a major additional focus on strengthening health care systems."

Co-author Dr. Koon Teo, a professor of medicine of McMaster's Michael G. DeGroot School of Medicine and at the Population Health Research Institute, agreed: "PURE emphasizes how important access to good health care is likely to be, as the differences in mortality rates between the richest and poorest countries are three-fold."

"The study is important," said co-author Dr. Martin McKee, a professor of the London School of Hygiene and Tropical Medicine in the U.K.

"These findings have enormous implications for governments and international bodies worldwide, and demonstrate that sufficient investment in developing accessible and efficient healthcare systems is the key to controlling [cardiovascular disease](#) in all regions of the world," he said.

Provided by McMaster University

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