

Not all cardiovascular risk calculators are created equal, research shows

June 21 2013, by Raquel Maurier

(Medical Xpress)—Online calculators that predict a patient's risk of cardiovascular disease vary greatly in accuracy, according to new medical research from the University of Alberta.

The scientists who made this discovery want doctors to exercise caution when using online [calculators](#) and deciding whether a patient should be prescribed medication based on the results of such [online tools](#).

"If you enter a patient's [risk factors](#) and get an answer, the number is by no means 100 per cent accurate. Physicians shouldn't interpret the results as hard and fast," said Mike Allan, a researcher with the Faculty of Medicine & Dentistry who works in the Department of Family Medicine and is also a physician.

"The level of accuracy is quite variable among different calculators. There is a margin of error that is not reported with any of these risk calculators. Patients could be more at risk or less at risk than what the calculator is actually showing. However, these calculators can be a helpful guide and are better than just basing treatment decisions on cholesterol numbers alone."

Allan and his colleagues at the U of A and the University of British Columbia recently published their findings in the peer-reviewed journal, *Circulation*. They found that between 22 and 48 per cent of doctors use online calculators to help determine whether their patients should receive medication to prevent heart disease. Some calculators consistently err

too high, suggesting patients are at risk; others consistently underestimate the risk.

"So some patients could be on medicine unnecessarily, while others who should be on medication aren't," said Allan.

Allan and his team showed that one-third of the time, patients assigned to one category of risk by one calculator will be assigned a different category by a different calculator. They also found that the absolute risk numbers assigned by different calculators can vary greatly. So a patient could be told the risk of heart disease or stroke was five per cent over the next 10 years based on one calculator, but another may show the risk as high as 25 per cent.

This large difference could have a profound impact on decisions by patients and clinicians, says Allan.

He says online calculators that are representative of populations are the best ones to use. So it would be best for Canadian doctors to use a tool created specifically for Canadian [patients](#).

The U of A and UBC researchers worked on this study for about one year. The research was funded by the Edmonton North [Primary Care Network](#).

"Dr. Allan is one of our member [physicians](#) in the Edmonton North Primary Care Network, and we were delighted to support the important and respected work that he does, including his research into cardiovascular risk calculators," said Mary Turner, president of the board of directors for the Edmonton North Primary Care Network.

Provided by University of Alberta

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