

# Women are less likely than men to be diagnosed with minor stroke

23 May 2019, by Kelly Johnston, Quentin Collier And Jennifer Palisoc



Amy Yu, a stroke neurologist at Sunnybrook Health Sciences Centre and assistant professor at the University of Toronto, is the lead author on a study done in collaboration with researchers at the Cumming School of Medicine. Credit: Kevin Van Paassen, Sunnybrook Health Sciences Centre

Women experiencing a minor stroke or transient ischemic attack (TIA) are less likely to be diagnosed with a stroke compared to men—even though they describe similar symptoms in emergency departments.

"In our study, men were more likely to be diagnosed with TIA or [minor stroke](#), and [women](#) were 10 per cent more likely to be given a non-stroke diagnosis, for example migraine or vertigo, even though men and women were equally likely to report atypical stroke symptoms," says study lead author Dr. Amy Yu, MD, a stroke neurologist at

Sunnybrook Health Sciences Centre and assistant professor at the University of Toronto.

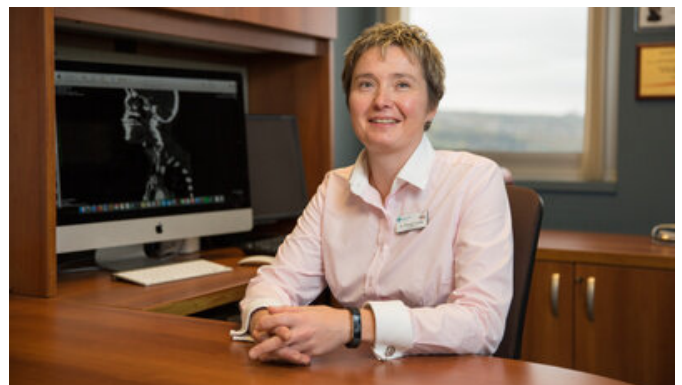
The findings of the study are published in *JAMA Neurology* and were presented May 22 at the European Stroke Organisation Conference in Milan, Italy.

The study found men and women equally described atypical stroke symptoms such as dizziness, tingling or confusion which are not commonly thought of as related to stroke. Typical symptoms of stroke are sudden weakness, face drooping, or speech difficulties.

A TIA occurs when there is temporary interruption of blood flow to the brain, and is often a warning sign of another stroke. TIAs can also be associated with permanent disability.

## Discrepancy in diagnoses

"Our study also found the chance of having another stroke or [heart attack](#) within 90 days of the diagnosis was the same for women and men," adds senior author Dr. Shelagh Coutts, MD, a stroke neurologist with Alberta Health Services at Foothills Medical Centre, associate professor at the University of Calgary's Cumming School of Medicine (CSM) and member of the Hotchkiss Brain Institute at the CSM.



University of Calgary researcher Shelagh Coutts says the findings of the study call attention to potential missed opportunities for prevention of stroke and other adverse vascular events such as heart attack or death in women. Photo by Adrian Shellard for the Hotchkiss Brain Institute

Researchers say while further research is needed, it is possible that patient reporting of symptoms, interpretation of symptoms by clinicians, or a combination of both, could explain the discrepancy in diagnosis among men and women.

"Our findings call attention to potential missed opportunities for prevention of stroke and other adverse vascular events such as heart attack or death in women," adds Coutts.

Previous studies on this topic have focused on patients diagnosed with stroke. Researchers in the current study included 1,648 patients with suspected TIA who were referred to a neurologist after receiving emergency care from 2013-2017, regardless of their final diagnosis.

### **Spotlight on atypical symptoms**

Researchers note it is an important opportunity for the public and clinicians to be aware of atypical symptoms of TIA.

"What's important to recognize in stroke is that the brain has so many different functions and when a stroke is happening, people can feel different things beyond the typical stroke symptoms," says Yu. "Accurately diagnosing TIA and stroke would change a patient's treatment plan and could help prevent another [stroke](#) from happening."

**More information:** Amy Y. X. Yu et al. Sex Differences in Presentation and Outcome After an Acute Transient or Minor Neurologic Event, *JAMA Neurology* (2019). [DOI: 10.1001/jamaneurol.2019.1305](#)

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