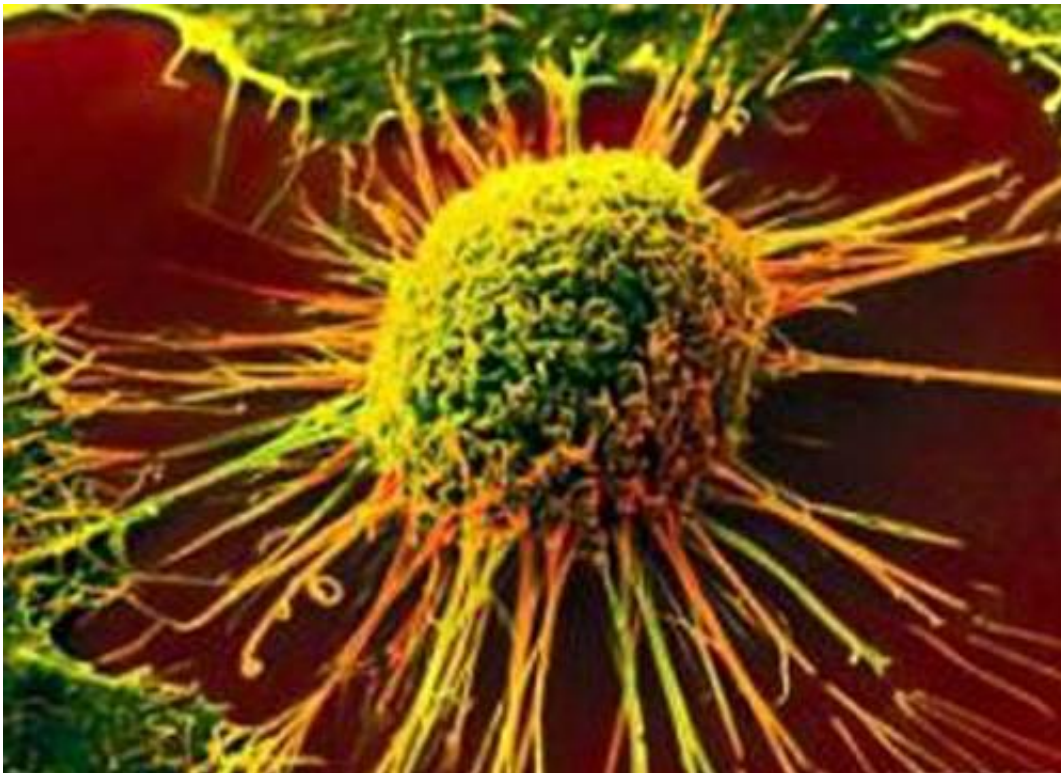


Study could reduce unnecessary cancer screening

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A large clinical trial led by researchers at The Ottawa Hospital and the University of Ottawa has found that contrary to expectations, a CT scan of the abdomen and pelvis does not improve cancer detection in people with unexplained blood clots in their legs and lungs. The results, published in the June 22 edition of the *New England Journal of*

Medicine, are expected to improve patient care and reduce screening costs around the world.

More than 500,000 Canadians and Americans are diagnosed with blood clots in the lungs and legs each year (called [venous thromboembolism](#)). In some cases, the clots are caused by trauma, surgery prolonged immobility or a known cancer, but in about half of cases, the cause of the blood clots is unknown.

'Unexplained blood clots have long been thought of as a possible early warning sign of cancer, with previous studies suggesting that up to 10 percent of patients with unexplained clots will be diagnosed with cancer within the year,' explained Dr. Marc Carrier, lead author of the study and a hematologist and senior scientist at The Ottawa Hospital. 'Some clinical guidelines recommend a CT scan of the abdomen and pelvis in these patients, in addition to other cancer screening, but there has been very little evidence to know if the added CT scan is helpful. We did this study to find out.'

The trial involved 854 patients in nine Canadian centres who had unexplained [blood clots](#) in the legs, lungs or both. Participants were randomized to receive basic cancer screening or basic cancer screening plus a CT scan of the abdomen and pelvis. Basic cancer screening included blood work and a chest X-ray, in addition to gender-specific screening (such as a breast exam, pap smear and prostate exam) if it had not been conducted in the last year.

The study showed that there was no difference in the number of new cancers detected in the two groups, with approximately four percent of patients from each group being diagnosed with cancer within the next year. There was also no difference in the number of cancer-associated deaths.

'Although it is tempting to believe that more cancer screening is always better, our study shows that this is not necessarily the case,' said Carrier, who is also an associate professor at the University of Ottawa. 'And in fact, unnecessary CT scanning has real risks. It can cause stress and anxiety in patients, as well as radiation exposure, and it can lead to over-investigation of false-positive findings. Our study means many patients will now be able to avoid this.'

The results could also lead to significant savings for the health-care system. Approximately 30,000 Canadians suffer an unexplained blood clot in the legs or lungs every year, and a CT scan costs approximately \$300, resulting in a potential saving of \$9M per year in Canada alone.

Jamie Dossett-Mercer participated in the clinical trial at the Ottawa Hospital after being diagnosed with an unexplained blood clot in the left leg in May 2013. Dossett-Mercer was in the group that received the CT scan. 'I'm glad that I could contribute to research that will help patients and save the health-care system money,' he said. 'I'm also glad to know that these tests are not required. When you are diagnosed with a serious illness you are already going through so many tests and worrying so much, so you really don't want to be doing extra tests if they aren't helpful.'

The study's senior author, Dr. Marc Rodger, noted that the four percent incidence of cancer observed in this study was lower than the 10 percent found in previous studies, possibly because of improvements in other kinds of [cancer screening](#) in the general population. 'It is very reassuring to know that the risk of cancer is less than we thought in these patients,' said Rodger, also a hematologist and senior scientist at The Ottawa Hospital and professor at the University of Ottawa. 'It means I can have a very different kind of conversation with my newly-diagnosed patients.'

The paper, titled 'Screening for occult cancer in unprovoked venous

thromboembolism' was published in the *New England Journal of Medicine* on June 22, 2015 and is authored by Carrier M, Lazo-Langner A, Shivakumar S, Tagalakis V, Zarychanski R, Solymoss S, Routhier N, Douketis J, Danovitch K, Lee AY, Le Gal G, Wells PS, Corsi DJ, Ramsay T, Coyle D, Chagnon I, Kassam Z, Tao H, and Rodger MA. The results were also presented on June 22 at the International Society of Thrombosis and Hemostasis meeting in Toronto, Canada.

This research was supported by the Heart and Stroke Foundation of Canada and The Ottawa Hospital Foundation.

'The Heart and Stroke Foundation is committed to funding research excellence with the power to create more survivors,' says Mary Lewis, VP Research and Knowledge Exchange for the Heart and Stroke Foundation. 'Thanks to the generosity of our donors, we can continue to fund leading research like this which will improve the health of Canadians, while saving our system valuable health dollars.'

Provided by Ottawa Hospital Research Institute

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