

Radiation before surgery more than doubles mesothelioma survival

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Results of clinical research that treated mesothelioma with radiation before surgery show the three-year survival rate more than doubled for study participants afflicted with this deadly disease, compared to treating with surgery first.

The findings, published online today ahead of print in the *Journal of Thoracic Oncology*, chart a viable route to treat patients more effectively and also improve their quality of life and potential survival, says principal investigator and lead author Dr. John Cho, [radiation oncologist](#) at Princess Margaret Cancer Centre, University Health Network (UHN). Dr. Cho is also an Assistant Professor, Department of Radiation Oncology at the University of Toronto.

"The patients in our study experienced shorter treatment, fewer complications and speedier recovery," says Dr. Cho. "The three-year survival rate more than doubled to 72% from 32%." Mesothelioma is an aggressive malignancy that starts in the lining of the lung and progressively restricts and invades the whole organ.

The study assessed a new approach dubbed SMART – Surgery for Mesothelioma After Radiation Therapy – and was completed over four years with 25 patients who had [radiation therapy](#) at Princess Margaret Cancer Centre and [surgery](#) at Toronto General Hospital, both part of UHN.

Participants were treated with an accelerated, five-day course of

intensity-modulated radiation therapy (IMRT), a specialized technique that conforms the radiation dose around the tumours in 3D while sparing the heart, spine and other healthy tissues. The patients underwent surgery to remove the affected lung the following week.

"It was imperative to do the surgery quickly because the lung is particularly sensitive to radiation toxicity," says thoracic surgeon Dr. Marc de Perrot, also an author of the study. He says the SMART approach significantly reduced the treatment cycle for patients to one month from five months. It also reduced the risk of recurrence because the radiation wiped out the cancer's ability to seed itself elsewhere in the chest or abdomen during surgery. Dr. de Perrot is an Associate Professor of Surgery at the University of Toronto and also leads the Toronto Mesothelioma Research Program.

"These research results offer real hope to [mesothelioma](#) patients who have too often been told in the past that they may have only six months to live," says Dr. de Perrot. Exposure to asbestos is the main cause of mesothelioma in the 500 new cases reported in Canada each year, a number that has essentially doubled in the past decade, he says.

"Individuals with known exposure to asbestos, who experience shortness of breath, weight loss and fatigue for more than three weeks, need to see a doctor. A basic chest X-Ray will show a pleural effusion (which appears as half the lung in white shadow), and that is the trigger to seek specialist care quickly. We need to shorten the diagnostic and treatment cycle in mesothelioma because we now have an approach that makes it possible to control the disease and improve quality of life for several years."

Since the study, Drs. Cho and de Perrot have used the SMART approach to successfully treat 20 more patients.

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