

# Ovary removal may increase lung cancer risk

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Women who have premature menopause because of medical interventions are at an increased risk of developing lung cancer, according to a new study published in the *International Journal of Cancer*. The startling link was made by epidemiologists from the Université de Montréal, the Research Centre of the Centre Hospitalier de l'Université de Montréal and the INRS—Institut Armand-Frappier.

"We found that women who experienced non-natural menopause are at almost twice the risk of developing [lung cancer](#) compared to women who experienced natural menopause," says Anita Koushik, a researcher at the Université de Montréal's Department of Social and Preventive Medicine and a scientist at the Research Centre of the Centre Hospitalier de l'Université de Montréal. "This increased risk of lung cancer was particularly observed among women who had non-natural menopause by having had both their ovaries surgically removed."

The scientists studied 422 women with lung cancer and 577 control subjects at 18 hospitals across Montreal, Quebec, Canada. They assessed socio-demographic characteristics, residential history, occupational exposures, medical and smoking history, and (among women) menstruation and pregnancy histories.

"A major strength of this study was the detailed smoking information which we obtained from all study participants; this is important because of the role of smoking in lung cancer and because smokers generally have lower estrogen levels than non-smokers," says Dr. Koushik. "Although smoking is the dominant cause of lung cancer, we know other

factors can play an important role in enhancing the impact of tobacco carcinogens; this research suggests that in women hormonal factors may play such a role."

Women were considered menopausal if their menstrual periods had stopped naturally, surgically (by hysterectomy with bilateral surgical ovary removal) or because of radiation or chemotherapy. [Women](#) who had at least one remaining ovary and who still had their menstrual periods at the time of diagnosis/interview were classified as premenopausal. Among participants with natural menopause, the median age for attaining menopause was 50 years old; among those with non-natural menopause, it was at 43 years.

"Non-natural menopause, particularly surgical menopause, may represent an increased risk with younger age at menopause given that surgery is usually done before natural [menopause](#) occurs. It's possible that vulnerability to lung cancer is caused by early and sudden decrease in estrogen levels or potentially long-term use of hormone replacement therapy and further research is needed to explore these hypotheses," says Jack Siemiatycki a professor at the Université de Montréal's Department of Social and Preventive Medicine and a scientist at the Research Centre of the Centre Hospitalier de l'Université de Montréal.

More information: [International Journal of Cancer: www3.interscience.wiley.com/cgi-bin/jco/2009/19/122380525/PDFSTART](#)

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