

# Respiratory symptoms vary according to stage of menstrual cycle

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Respiratory symptoms vary significantly during different stages of the menstrual cycle, with higher frequencies during the mid-luteal to mid-follicular stages, according to a new study.

"The effects of the [menstrual cycle](#) on respiratory symptoms in the general population have not been well studied," said lead author Ferenc Macsali, MD, of the Haukeland University Hospital in Bergen, Norway. "In a cohort of nearly 4,000 women, we found large and consistent changes in respiratory symptoms according to menstrual cycle phase, and, in addition, these patterns varied according to [body mass index](#) (BMI), asthma, and smoking status."

The findings were published online ahead of print publication in the [American Thoracic Society's American Journal of Respiratory and Critical Care Medicine](#).

A total of 3,926 women with regular cycles who were not taking exogenous [sex hormones](#) were enrolled in the study. Menstrual cycles, respiratory symptoms, BMI, asthma, and smoking status were determined by postal questionnaire.

Significant variations over the menstrual cycle were found for each symptom assessed in all subjects and subgroups. Reported wheezing was higher on cycle days 10-22, with a mid-cycle dip near the putative time of ovulation (~days 14-16) in most subgroups. Shortness of breath was highest on days 7-21, with a dip just prior to mid-cycle in a number of

subgroups. The incidence of cough was higher just after putative ovulation for asthmatics, subjects with BMI  $\geq 23\text{kg/m}^2$ , and smokers, or just prior to ovulation and the onset of menses in subgroups with a low incidence of symptoms.

"Our finding that respiratory symptoms vary according to the stage of the menstrual cycle is novel, as is our finding that these patterns vary according to BMI and smoking status," said Dr. Mascali. "These relationships indicate a link between [respiratory symptoms](#) and hormonal changes through the menstrual cycle."

The study had a few limitations, including the use of questionnaires to gather data and variation in the length of menstrual cycles in the study population, which may affect the accuracy of determining menstrual cycle stage.

"Our results point to the potential for individualizing therapy for respiratory diseases according to individual symptom patterns," concluded Dr. Mascali. "Adjusting asthma medication, for example, according to a woman's menstrual cycle might improve its efficacy and help reduce disability and the costs of care."

Provided by American Thoracic Society

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