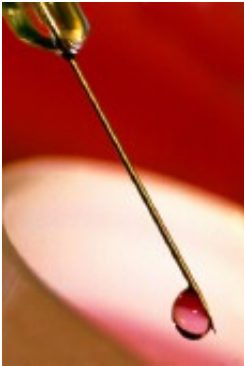


DNA methylation level is marker of breast cancer risk

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(HealthDay) -- Women with high levels of white blood cell (WBC) DNA methylation at the ATM loci have a significantly increased risk of breast cancer, regardless of family history or menopausal status, according a study published in the May 1 issue of *Cancer Research*.

Kevin Brennan, of Imperial College in London, and colleagues evaluated WBC [DNA methylation](#) as a biomarker of [breast cancer risk](#) using prediagnostic blood samples from three cohorts. DNA methylation at two ATM intragenic loci, ATMmvp2a and ATMmvp2b, and genome-wide methylation of long interspersed nuclear element-1 (LINE1) repetitive elements were analyzed. Methylation was quantified in 640 incident cases of [breast cancer](#) and 741 controls.

The researchers found that patients with WBC DNA methylation at the ATMmvp2a loci in the highest quintile had a significantly increased risk of breast cancer (odds ratio, 1.89), irrespective of family history or menopausal status. This relationship was more consistently observed in women under the age of 60 years compared with older women, and was significant in two of the cohorts. There was no difference between cases and controls in methylation of ATMmvp2b or LINE1.

"In conclusion, our findings on the association between ATM hypermethylation in WBC DNA before diagnosis and the risk of developing breast cancer provide further support for the investigation of common epigenetic variability as risk markers for breast and other cancers," the authors write.

More information: [Abstract](#)
[Full Text](#)

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