

CANCER EPIDEMIOLOGY,  
BIOMARKERS & PREVENTION

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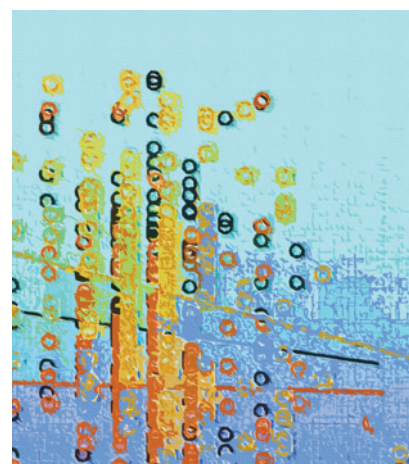
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## ABOUT THE COVER

The cover image is adapted from Figure 2 in the article, “The Effects of Lifetime Estrogen Exposure on Breast Epigenetic Age,” by Sehl and colleagues. The figure shows the relationship between age at menarche and age-adjusted measures of epigenetic age acceleration. Accelerated breast tissue aging is thought to contribute to an elevated incidence of breast cancer in younger women. Estrogen stimulation and cell cycling are thought to underlie this accelerated aging process. Sehl and colleagues investigated methylation-based estimates of biologic aging in normal breast tissue of healthy women donors, focusing analysis on Grim age, an epigenetic age measure whose acceleration in peripheral blood is associated with time to cancer. This is the one of the first and largest studies of normal breast tissue examining epigenetic age estimates. The study confirmed that epigenetic age acceleration in healthy breast is highest at earlier ages and identified factors associated with the degree of epigenetic age acceleration, including earlier age at menarche, and BMI. Epigenetic clock measures may help advance inquiry into the relationship between accelerated breast tissue aging and an elevated incidence of breast cancer in younger women. For more information, see the article beginning on page 1241.



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