

0.94, 95% CI, 0.81–1.08) or AD use (OR 1.07, 95% CI, 0.93–1.22). When these exposures were included together in the same model, depression remained unassociated with breast cancer risk (OR 0.87, 95% CI, 0.74–1.03) while AD use exhibited a small, borderline significant increase in risk (OR 1.15, 95% CI, 0.98–1.35). The latter association remained consistent for selective serotonin reuptake inhibitors (SSRIs; OR 1.16, 95% CI, 0.96–1.39) but was not apparent for other classes of ADs (OR 1.07, 95% CI, 0.85–1.35). Conclusions: These initial results indicate that depression is not associated with breast cancer risk, while we could not exclude a slight increase in risk associated with SSRI use. Further analyses will update exposure information over follow-up and also evaluate whether associations differ by menopausal status or hormone receptor disease subtypes. Clarifying the effects of these exposures on breast cancer risk will provide critical information for the millions of women who are depressed and/or use ADs.

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### Adolescent Endogenous Sex Hormones and Breast Density in Early Adulthood

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During adolescence the breasts undergo rapid growth and development under the influence of sex hormones. Although the hormonal etiology of breast cancer is hypothesized, it remains unknown whether adolescent sex hormones are associated with adult breast density, which is a strong risk factor for breast cancer. METHODS: Percentage of dense breast volume (%DBV) was measured in 2006 by magnetic resonance imaging in 177 women aged 25–29 years who participated in the Dietary Intervention Study in Children from 1988–1997 and had sex hormones and sex hormone binding globulin (SHBG) measured in serum collected on 1–4 occasions between 8 and 17 years of age. Multivariable linear mixed-effect regression models were used to evaluate the associations of adolescent sex hormones and SHBG with %DBV. RESULTS: Dehydroepiandrosterone sulfate (DHEAS) and SHBG measured in premenarche serum samples were significantly positively associated with %DBV (all  $P_{trend} \leq 0.03$ ) but not when measured in postmenarche samples (all  $P_{trend} \geq 0.42$ ). The multivariable geometric mean of %DBV across quartiles of premenarcheal DHEAS and SHBG increased from 16.7% to 22.1% and from 14.1% to 24.3%, respectively. Estrogens, progesterone, androstenedione, and testosterone were not associated with %DBV pre- or post-menarche (all  $P_{trend} \geq 0.16$ ). CONCLUSIONS: Our results suggest that higher DHEAS and SHBG levels during adolescence, particularly before the onset of menarche, are associated with higher %DBV in young women. Whether this association translates into an increased risk of breast cancer later in life is currently unknown.

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### E-cigarette and Traditional Cigarette Use Among Smokers During Hospitalization and 6 Months Later

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Use of electronic nicotine delivery systems, most commonly called e-cigarettes (e-cigs,) has been rising over the past few years, with the greatest use among traditional cigarette smokers. The utility and harm of this group of emerging tobacco products are under debate. While some propose them as novel tobacco cessation tools, others decry their potential for sustained addiction and negative health effects. We examined smokers' e-cig use and smoking behaviors at hospitalization and 6 months later. Methods: 979 smokers hospitalized at a tertiary care medical center were recruited to a longitudinal observational study and provided baseline data during hospitalization and 6-months later. Past 30-day (current) e-cig use and smoking rates at both baseline and 6-month follow-up were examined with t-tests. Chi square test examined baseline e-cig use and 6-month smoking status. Results: 823 (84.1%) participants provided data at both time points: mean age was 46 years; 53.6% were White, 44.0% were Black, and 2.5% other; 22.5% had less than a high school degree, 38.8% had a high school diploma/GED, and 38.7% had some college or more; 30.8% were married/domestic partner and 53.6% were male. Current e-cig use was reported by 171 (20.7%) at baseline and 246 (29.9%) at 6-month follow-up, with 98 (11.9%) reporting current e-cig use at both time points. At 6-months follow-up, 12.2% of baseline current e-cig users vs. 13.4% of baseline non-users reported quitting smoking ( $P = 0.80$ ), with 22% of baseline e-cig users who quit still using e-cigs at 6-months follow-up. Baseline current e-cig users reported higher daily cigarette consumption (14.1 vs. 11.9;  $P = 0.010$ ) at baseline but not 6-months later (10.3 vs. 9.8;  $P = 0.619$ ); whereas, continuing smokers with current e-cig use at 6 months follow-up reported fewer cigarettes per day (8.4 vs. 10.5;  $P = 0.008$ ). Conclusions: Among adult smokers, current e-cig use at hospitalization was associated with higher cigarette consumption at baseline but was not predictive of quitting or consumption (among continuing smokers) at 6-months follow-up. Further, current e-cig use at 6 months was associated with a greater reduction in cigarettes smoked per day among continuing smokers at 6-months after hospitalization.

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### Statewide Vaccine Registry Data Indicate High Number of Missed Opportunities for the HPV Vaccine Among Eligible Girls

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This study investigates the rate of missed opportunities for the HPV vaccine among eligible girls using statewide vaccine registry data. Methods: Using data from the Utah Statewide Immunization Information System (USIIS) from 2008–2012 for approximately 55,000 girls ages 11–18, we assessed the frequency of missed opportunities (receipt of other recommended vaccinations such as TDap, MCV4, and/or flu and not the HPV vaccine)