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Another Link Between Alcohol and Breast Cancer Found

A recent in the journal, *Pediatrics* looked at the impact of alcohol intake in adolescent girls on the development of proliferative benign breast disease (BDD), which is known to cause a fourfold increase in the risk of developing breast cancer. The researchers further asked whether folate intake during the teenage years could positively influence the development of proliferative BDD in female adolescent drinkers.

The data revealed that there was a dose-dependent relationship between alcohol consumption during adolescence and the development of proliferative benign breast disease.

Alcohol use and abuse is common among teenage girls. This has short- and long-term health effects as well as numerous consequences of alcohol-enhanced risk taking behavior. Alcohol is a known risk factor for breast cancer and studies have shown that a 10 gram per day increase in alcohol intake in adult women is associated with a 7-10 percent increased risk of breast cancer. One theory explaining the impact of alcohol on cancer risk suggests that alcohol decreases the body's levels of folate, a vitamin which is involved in gene expression and DNA repair. Deficiencies in folate could cause a decrease in the body's ability to repair DNA. Damaged DNA can potentially become cancerous.

The investigators reasoned that if alcohol decreases the body's folate level, then perhaps increasing dietary folate could have a protective effect against the increased breast cancer risk posed by alcohol. This would provide a simple nutritional intervention for adolescent girls who drank alcohol to help decrease their breast cancer risk.

The researchers focused on the 18-22 year old age group because they believed that the breast cells were most vulnerable to carcinogens during the time between the first period and the first pregnancy. This is a time when breast tissue undergoes rapid proliferation and differentiation. They hypothesized that "adequate folate intake during adolescence would reduce the risk of proliferative BBD associated with alcohol consumptions between ages 18-22 years."

The researchers used data from 29,117 women who were part of the Nurses' Health Study II. The participants completed adolescent alcohol consumption and dietary questionnaires. The data

revealed that there was a dose-dependent relationship between alcohol consumption during adolescence and the development of proliferative benign breast disease.

The risk increased as the alcohol consumption increased; for each 10 gram per day of alcohol intake during adolescence there was a 21 percent risk of proliferative BDD. But the BDD risk remained the same for those adolescents who had low, moderate, or high folate intake during adolescence.

Thus, folate was not found to modulate or protect against the risk of development of proliferative BDD. This is a disappointing result as there is currently no identified dietary strategy which can decrease the risk of proliferative BDD or later breast cancer associated with adolescent alcohol use. The best available protection is decreasing adolescent alcohol consumption.

The study appears in the journal, *Pediatrics*.