

Current cigarette smokers at increased risk of seizures

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A recent study determined there is a significant risk of seizure for individuals who currently smoke cigarettes. Boston-based researchers from Brigham and Women's Hospital and Harvard Medical School also found that long-term, moderate intake of caffeine or alcohol does not increase the chance of having a seizure or developing epilepsy. This is the first prospective study to examine the potential risks associated with cigarette smoking, caffeine intake, and alcohol consumption as they independently relate to epilepsy. Full findings of this study are currently available online and will appear in the February 2010 issue of *Epilepsia*, a journal published by Wiley-Blackwell on behalf of the International League Against Epilepsy.

Epilepsy is a neurological condition characterized by repeated unprovoked seizures where electrical disturbances in the brain cause sudden, involuntary changes in body movements (convulsions and muscle spasms) and sensory awareness. Approximately 2.5 million Americans are affected by [epilepsy](#) with 150,000 new cases diagnosed this year alone, according to the Centers for Disease Control and Prevention (CDC). The CDC further estimates that epilepsy accounts for \$15.5 billion in medical costs and lost earnings. Single seizures or those provoked by alcohol withdrawal or other cause are even more common, occurring in up to 10% of the population.

Barbara A. Dworetzky, M.D., and colleagues used data obtained from the Nurses' Health Study II, a group of 116,608 female registered nurses, aged 25-42 years old who returned mailed questionnaires on their

lifestyle and medical history including epilepsy and [seizure](#) activity. In the analysis for cigarette smoking, researchers accrued 246 cases and 1,778,307 person-years of follow-up among 116,363 participants. For the analyses of caffeine intake, there were 201 cases and 1,440,850 person-years of follow-up among 105,941 participants, and for the alcohol consumption analyses, 198 cases and 1,427,348 person-years of follow-up among 104,934 participants. The data used in this study were obtained from 1989 through May 31, 2005.

After adjusting for stroke, brain tumor, hypertension and other potential confounding factors, researchers observed a significant association between current cigarette smoking and risk of seizure (relative risk (RR) of 2.60). "Our analysis showed risk of seizure was significantly higher for current smokers, but not related to the amount of cigarettes smoked daily," said Dr. Dworetzky. "It does appear, however, that the number of years of smoking does increase seizure risk." Risk of epilepsy, that is recurrent unprovoked seizures, was modestly elevated with both past (RR - 1.46) and current smoking (RR - 1.27), but not statistically significant.

The analysis of caffeine consumption showed that a long-term average intake of ≥ 400 mg of caffeine/day compared with

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