

# Attention-deficit/hyperactivity disorder medication and seizures.

Wiggs KK, Chang Z, Quinn PD, Hur K, Gibbons R, Dunn D, Brikell I, Larsson H, D'Onofrio BM.

Neurology. 2018 Feb 23. pii: 10.1212/WNL.0000000000005213.

doi: 10.1212/WNL.0000000000005213.

## Abstract

### OBJECTIVE:

Individuals with attention-deficit/hyperactivity disorder (ADHD) are at increased risk of seizures, but there is uncertainty about whether ADHD medication treatment increases risk among patients with and without preexisting seizures.

### METHODS:

We followed a sample of 801,838 patients with ADHD who had prescribed drug claims from the Truven Health MarketScan Commercial Claims and Encounters databases to examine whether ADHD medication increases the likelihood of seizures among ADHD patients with and without a history of seizures. First, we assessed overall risk of seizures among patients with ADHD. Second, within-individual concurrent analyses assessed odds of seizure events during months when a patient with ADHD received ADHD medication compared with when the same individual did not, while adjusting for antiepileptic medications. Third, within-individual long-term analyses examined odds of seizure events in relation to the duration of months over the previous 2 years patients received medication.

### RESULTS:

Patients with ADHD were at higher odds for any seizure compared with non-ADHD controls (odds ratio [OR] = 2.33, 95% confidence interval [CI] = 2.24-2.42 males; OR = 2.31, 95% CI = 2.22-2.42 females). In adjusted within-individual comparisons, ADHD medication was associated with lower odds of seizures among patients with (OR = 0.71, 95% CI = 0.60-0.85) and without (OR = 0.71, 95% CI = 0.62-0.82) prior seizures. Long-term within-individual comparisons suggested no evidence of an association between medication use and seizures among individuals with (OR = 0.87, 95% CI = 0.59-1.30) and without (OR = 1.01, 95% CI = 0.80-1.28) a seizure history.

### CONCLUSIONS:

Results reaffirm that patients with ADHD are at higher risk of seizures. However, ADHD medication was associated with lower risk of seizures within individuals while they were dispensed medication, which is not consistent with the hypothesis that ADHD medication increases risk of seizures.