

Anti-epileptic drugs associated with increased risk of fracture in older adults

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Most anti-epileptic drugs are associated with an increased risk of non-traumatic fracture in individuals 50 years of age and older, according to a report in the January issue of *Archives of Neurology*.

Anti-epileptic drugs are considered a secondary risk factor for osteoporosis, according to background information in the article, because epilepsy is highly prevalent in [older adults](#), a population already at risk for [osteoporosis](#). Additionally, anti-epileptic drugs are associated with greater bone density reduction in post-menopausal women with [epilepsy](#).

While there have been studies that examined the link between anti-epileptic drugs and bone density loss in adults older than 65, little evidence exists for the association of individual anti-epileptic drugs with [bone loss](#). Nathalie Jetté, M.D., M.Sc., of the University of Calgary, Foothills Hospital, Alberta, Canada, and colleagues studied medical records of 15,792 individuals who experienced non-traumatic [fractures](#) between April 1996 and March 2004. Each person was matched with up to three controls, persons without a history of fracture, for a total of 47,289 controls.

The individual anti-epileptic drugs studied included carbamazepine, clonazepam, ethosuximide, gabapentin, phenobarbital, phenytoin and valproic acid. Additional anti-epileptic drugs with fewer numbers of users were included together under "other anti-epileptic drugs."

The likelihood of fractures was highest for persons taking phenytoin followed by carbamazepine, other, phenobarbital, gabapentin and clonazepam. The only anti-epileptic drug not associated with an increased likelihood of fracture was valproic acid.

Similar results were found when testing for the use of anti-epileptic drugs in monotherapy (individuals taking only one anti-epileptic drug) and in polytherapy (individuals taking more than one anti-epileptic drug). All anti-epileptic drugs used in monotherapy were associated with a significantly increased risk of fracture except for valproic acid, phenobarbital and "other anti-epileptic drugs." The greatest risk of fracture was found in individuals in the polytherapy subgroups.

"In conclusion, our study showed that most anti-epileptic drugs except for valproic acid are associated with an increased likelihood of non-traumatic fracture in individuals aged 50 years or older," the authors write. "Future prospective studies of anti-epileptic drugs in newly treated drug-naïve patients are needed to better examine the individual effects of anti-epileptic drugs on bone health."

More information: Arch Neurol. 2011;68[1]:107-112.

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