

Common drugs tied to increased risk of cognitive decline

2 September 2020



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A class of drugs used for many conditions, including allergies, colds, high blood pressure and depression, may be associated with an increased risk of developing mild thinking and memory problems, particularly in people who have genetic risk factors for Alzheimer's disease or markers of this condition, according to a study published in the September 2, 2020, online issue of *Neurology*. These types of drugs, called anticholinergic drugs, are used for motion sickness, urinary incontinence, overactive bladder, Parkinson's disease and high blood pressure. There are approximately 100 such drugs in widespread use, with some requiring a prescription and many others that may be purchased over the counter.

The study found that cognitively normal people taking at least one anticholinergic drug were 47% more likely to develop mild cognitive impairment, which can be a precursor to dementia, over the next decade than people who were not taking such drugs.

"Our findings suggest that reducing the use of anticholinergic drugs before people develop any cognitive problems may be an important way to prevent the negative consequences of these drugs on thinking skills, especially for people who have an elevated risk of developing Alzheimer's [disease](#)," said study author Lisa Delano-Wood, Ph.D., of the University of California, San Diego. "Future studies are needed to see if indeed stopping the use of these drugs could lead to a reduction in mild cognitive impairment and Alzheimer's disease down the road."

The study involved 688 people with an average age of 74 who had no problems with thinking and memory skills at the start of the study. The participants reported if they were taking any anticholinergic drugs within three months of the start of the study at least once a week for more than six months. They took cognitive tests once a year for up to 10 years.

One-third of the participants were taking anticholinergic drugs, with an average of 4.7 anticholinergic drugs taken per person. Metoprolol, atenolol, loratadine and bupropion were the most common.

Since different drugs have different levels of anticholinergic activity, the researchers also determined participants' overall anticholinergic burden based on the number, dosage, and strength of anticholinergic drugs they were taking.

Of the 230 people who were taking anticholinergic drugs, 117 people, or 51%, later developed mild cognitive impairment, compared to 192 people, or 42%, of the 458 people who were not taking the drugs. After adjusting for depression, number of medications being taken, and history of cardiac problems, individuals taking at least one anticholinergic [drug](#) had a 47% [increased risk](#) for developing mild cognitive impairment. Furthermore, those with higher overall exposure to

anticholinergic drugs had additional increased risk.

Researchers also looked at whether people had biomarkers for Alzheimer's disease in their cerebrospinal fluid or had genetic risk factors for Alzheimer's disease.

The study found that people with biomarkers for Alzheimer's disease in their cerebrospinal fluid who were taking anticholinergic drugs were four times more likely to later develop mild cognitive impairment than people who were not taking the drugs and did not have the biomarkers.

Similarly, people who had genetic risk factors for Alzheimer's disease and took anticholinergic drugs were about 2.5 times as likely to later develop mild cognitive impairment than people without the [genetic risk factors](#) and who were not taking the drugs.

Because older people metabolize anticholinergic drugs differently than younger people, many anticholinergic drugs have different recommended daily dosages for elderly people than for younger people. Delano-Wood said that the majority of medications in the study were being taken at levels much higher than the lowest effective dose recommended for older adults, with 57% taken at twice the recommended dosage and 18% at least four times the recommended dosage.

"This is of course concerning and is a potential area for improvement that could possibly lead to a reduction in cases of [mild cognitive impairment](#)," Delano-Wood said. "It is also a possible target toward a future precision medicine approach because we can more carefully consider and prescribe medications for people depending upon their risk profile for neurodegenerative disorders like Alzheimer's disease."

People who take anticholinergic medications are encouraged to discuss [medication](#) appropriateness with their doctors or pharmacists before making changes to their medications, since some of these medications may cause adverse effects if stopped suddenly.

A limitation of the study was that only one-third of

the participants in this study were taking [anticholinergic](#) medications, when other studies report that up to 70% of older people take them. However, Delano-Wood noted, "These findings are compelling given that meaningful effects of these drugs on cognitive function were detected even though the volunteers in the study were generally very healthy and not taking as many medications as many older adults living in our communities."

Provided by American Academy of Neurology

APA citation: Common drugs tied to increased risk of cognitive decline (2020, September 2) retrieved 21 October 2020 from <https://medicalxpress.com/news/2020-09-common-drugs-tied-cognitive-decline.html>

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