

Common class of drugs linked to dementia even when taken 20 years before diagnosis

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Pill bottle. Credit: CDC/Public domain

The largest and most detailed study of the long-term impact of anticholinergic drugs, a class of drugs commonly prescribed in the United States and United Kingdom as antidepressants and incontinence medications, has found that their use is associated with increased risk of dementia, even when taken 20 years before diagnosis of cognitive impairment.

An international research team from the US, UK and Ireland analyzed more than 27 million prescriptions as recorded in the medical records of 40,770 patients over age 65 diagnosed with dementia compared to the records of 283,933 older adults without dementia.

The researchers found greater incidence of dementia among patients prescribed anticholinergic antidepressants, anticholinergic bladder medications and anticholinergic Parkinson's disease medications than among older adults who were not prescribed these drugs.

Dementia increased with greater exposure to anticholinergic medications.

"Anticholinergic Medication and Risk of Dementia: Case-control Study" is published in *BMJ* (formerly the *British Medical Journal*) an international peer-reviewed medical journal.

"Anticholinergics, medications that block acetylcholine, a nervous system neurotransmitter, have previously been implicated as a potential cause of cognitive impairment," said Regenstrief Institute and Indiana University Center for Aging Research investigator Noll Campbell, PharmD, MS, a co-author of the new *BMJ* study. "This study is large enough to evaluate the long-term effect and determine that harm may be experienced years before a diagnosis of dementia is made." Dr. Campbell is also an assistant professor of pharmacy practice at Purdue University College of Pharmacy.

"These findings make it clear that clinicians need to carefully consider the anticholinergic burden of their patients and weigh other options," said study co-author Malaz Boustani, M.D., MPH, a Regenstrief Institute and IU Center for Aging Research investigator. Dr. Boustani is the founder of the Indiana Clinical and Translational Science Institute's IU Center for Health Innovation and Implementation Science and the Richard M. Fairbanks Professor of Aging Research at IU School of Medicine.

"Physicians should review all the anticholinergic medications - including over-the-counter drugs - that patients of all ages are taking and determine safe ways to take individuals off [anticholinergic medications](#) in the interest of preserving brain health," Dr. Boustani said.

The study, which was led by the University of East Anglia and funded by the Alzheimer's Society, both in the UK, utilized data from the Clinical Practice Research Datalink which includes anonymized diagnosis, referral and prescription records for more than 11 million patients from 674 primary care

practices across the UK. The data is broadly representative of the UK population in terms of age, sex and ethnicity.

"This research is really important because there are an estimated 350 million people affected globally by depression. Bladder conditions requiring treatment are estimated to affect over 13 percent of men and 30 percent of women in the UK and US," said study lead researcher George Savva, PhD, visiting researcher at University of East Anglia's School of Health Sciences.

"We don't know exactly how anticholinergics might cause [dementia](#)," said study co-author Chris Fox, MD, professor of clinical psychiatry at UEA's Norwich Medical School and a consultant psychiatrist. "Further research is needed to understand possible reasons for this link. In the meantime, I strongly advise patients with any concerns to continue taking their medicines until they have consulted their doctor or pharmacist."

Study co-author Ian Maidment, PhD, senior lecturer in clinical pharmacy at Aston University in the UK, said: "With many medicines having some anticholinergic activity, one key focus should be de-prescribing. Clinical staff, patients and carers need to work together collaboratively to limit the potential harm associated with anticholinergics."

More information: Kathryn Richardson et al. Anticholinergic drugs and risk of dementia: case-control study, *BMJ* (2018). [DOI: 10.1136/bmj.k1315](https://doi.org/10.1136/bmj.k1315)

Editorial: Anticholinergic drugs and dementia in older adults, www.bmj.com/content/361/bmj.k1722

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