



HEALTH CARE / PUBLIC HEALTH

## Understanding the Risks of Anticholinergic Drugs

SAFEGUARD PATIENTS AGAINST DEMENTIA WITH THE ANTICHOLINERGIC BURDEN CALCULATOR

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### WHAT YOU NEED TO KNOW

- Anticholinergic drugs work by blocking the action of acetylcholine, a crucial neurotransmitter involved in memory and muscle control.
- Despite their common use for ailments like allergies, insomnia, overactive bladder, and depression, especially prevalent among seniors, their prolonged use can detrimentally affect cognitive function and balance.
- The Anticholinergic Burden Calculator offers a valuable tool for assessing the cumulative impact of anticholinergic medications on cognitive function.

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In the profitable world of modern health care and “polypharmacy,” certain medications, while potentially beneficial in treating various conditions, may harbor unforeseen dangers. Among these are anticholinergic drugs, which not only increase the risk of falls, but are also associated with the development dementia, particularly in older adults.

Recognizing the risks posed by this class of medications is vital for health care practitioners who can advocate for their patients to explore natural alternatives (in consultation with their primary care physicians). Additionally, using tools such as the [Anticholinergic Burden Calculator](#) can assist in evaluating and mitigating the cognitive impact of anticholinergic drugs.

Working with seniors at an independent/assisted living community with a memory unit, I witness

firsthand the consequences of years of taking this class of drugs, and it's not pretty.

### Association With Dementia

Anticholinergic drugs work by blocking the action of acetylcholine, a crucial neurotransmitter involved in memory and muscle control. Despite their common use for ailments like allergies, insomnia, overactive bladder, and depression, especially prevalent among seniors, their prolonged use can detrimentally affect cognitive function and balance, leading to increased mortality rates.

Numerous studies have underscored the compelling link between anticholinergic drug use and dementia. A study in *JAMA Internal Medicine* revealed that long-term use of anticholinergic drugs was associated with a significantly higher risk of dementia, with the risk escalating with higher cumulative doses of these medications.<sup>1</sup>

Another study in the *British Medical Journal* echoed these findings, emphasizing the necessity for cautious prescribing and monitoring, particularly among older populations.<sup>2</sup> Additionally, a Harvard Health blog highlighted a 54% higher risk of dementia associated with taking anticholinergics for the equivalent of three years or more, compared to a three-month duration.<sup>3</sup>

The mechanisms underlying the association between anticholinergic drugs and dementia are complex and not yet fully understood. However, it is believed that inhibition of acetylcholine receptors in the brain may contribute to the accumulation of amyloid plaques and neurofibrillary tangles, characteristic hallmarks of Alzheimer's disease and other forms of dementia.

### Evaluating Cost vs. Benefit

Given the potential risks associated with anticholinergic drugs, health care professionals must evaluate their benefits against cognitive effects, particularly in older patients who may be more susceptible to complications.

The Anticholinergic Burden Calculator offers a valuable tool for assessing the cumulative impact of anticholinergic medications on cognitive function. By inputting a patient's medication list, health care professionals can generate an "anticholinergic burden score," aiding in clinical decision-making. Figure 1 is the output given two common drugs and the output of the calculator.



Score:

**3**

Medicine: Diphenhydramine

Brands: Benadryl™, Nytol™, Sleeppeaze™



Score:

**3**

Medicine: Paroxetine

Brands: Paxil™

+ Add new medicine

Reset

Total ACB Score: **6 High Risk**

Your patient has scored  $\geq 3$  and is therefore at a higher risk of confusion, falls and death.

Please review their medications and, if possible, discuss this with the patient and/or relatives/carers. Please consider if any of these medications could be switched to a lower-risk alternative.

For help choosing medicines to reduce anticholinergic burden, [click here](#)

- Drugs with possible anticholinergic burden score 1.
- Drugs with definite anticholinergic burden score 2 or 3.
- If you cannot find your medication listed in the calculator, you can assume it scores 0.

Figure 1: Example output of the Anticholinergic Burden Calculator.

The Anticholinergic Burden Calculator can provide you with an evidence-based printout to help communicate with your patient's health care provider(s), fostering informed discussions about the potential risks and benefits of specific medications. Armed with objective data from the calculator, we can also educate patients about the importance of medication management and empower them to make informed decisions about their health care.

### Safer Alternatives

Safer alternatives exist for common conditions treated with anticholinergic drugs. For instance, allergies can be managed with quercetin and bromelain,<sup>4</sup> while anxiety and depression may respond to 5-HTP, L-tryptophan, L-theanine, St. John's wort, folate or dehydroepiandrosterone (DHEA).<sup>5</sup> Insomnia can be addressed with CBD, L-theanine, melatonin, valerian, kava kava, chamomile, skullcap or lemon balm.<sup>6</sup>

Notably, acupuncture and traditional Chinese herbal medicine offer safe and effective treatment options for these conditions without resorting to brain-damaging anticholinergic medications.

Speaking of brain damage, Alzheimer's disease is on the rise in the U.S. from the current estimate

of 5.8 million to a whopping 14 million Americans predicted by 2060.<sup>7-8</sup> For patients with minor dementia or Alzheimer's, incorporating medium-chain fatty acids (MCT oil) into their diet, at a recommended dosage of two tablespoons per day, may yield notable improvements.<sup>9</sup>

### Clinical Pearls

The dangers of anticholinergic drugs in potentially leading to dementia underscore the importance of vigilant medication management and risk assessment in clinical practice. Tools like the Anticholinergic Burden Calculator offer invaluable support in identifying and mitigating the cognitive risks associated with these medications.

### References

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