

Medication Issues to Consider

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An important aspect of maintaining independence as you age is managing your medications. In this section a pharmacist explains some aspects of medication that you or your healthcare agent may not have considered. If you are informed about possible medication issues, you are able to better advocate for yourself. After reading this material, speak to your physician or pharmacist about any concerns you have about your medications. Or you made want a friend or family member to advocate for you. After you read what the pharmacist has written, check out the practical advice that follows.



Aging poses many challenges when seeking to optimize healthcare. One such challenge relates to an increase in prescribed medications to treat age-related diseases. Side effects and interactions from the rising number of prescribed medications can be problematic. The increase, combined with a decrease in overall organ function, creates a puzzle that may lead to serious issues. While medications are often necessary for disease management, it is vitally important for caregivers and healthcare professionals to recognize the risk for side effects that correspond with the increasing number of medications.

An issue of concern for anyone, but particularly the elderly is polypharmacy. Polypharmacy refers to the use of multiple medications by a patient to manage various health conditions.

It's common among older adults who have several chronic conditions. Sometimes unnecessary medications are prescribed to address an issue originally caused by a medication already being taken. It is important to be aware that as the quantity of prescribed medications increases, there also exists the possibility of increased side effects.



Cognitive symptoms such as confusion, memory loss, and disorientation may be caused or exacerbated by certain medications. These symptoms could be mistaken for dementia, leading to inappropriate treatment or possible oversight of potentially reversible causes of cognitive decline. Understanding the medications that can mimic dementia and how to manage them is essential for improving the quality of life in elderly patients. Many different classes of medications can complicate understanding the cognitive function of individuals including, but not limited to: anticholinergics, benzodiazepines, opioids, antipsychotics, corticosteroids, antihypertensives, and diabetic medications.

1. Anticholinergics are some of the most utilized medications amongst all age groups. Unfortunately, anticholinergics are also recognized as a likely offender when it comes to cognitive impairment in the aging population.

- **Examples:** Diphenhydramine (Benadryl), oxybutynin, tricyclic antidepressants (e.g., amitriptyline).
- **Mechanism:** Anticholinergic drugs block acetylcholine, a neurotransmitter essential for memory and cognitive function. In older adults, these medications can lead to confusion, delirium, and memory impairment, especially with long-term use.

- **Effects on Cognition:** Chronic use of anticholinergic medications has been linked to an increased risk of dementia. Acute use can lead to confusion, hallucinations, and difficulty concentrating, which may be mistaken for acute cognitive decline.
- **Management:** Assessing the necessity of the medication is the first order of business. If the allergy medication was originally ordered to address the ragweed bloom from the last month, it may no longer be required. If the medication is required, sometimes a reduction in dose can alleviate the cognitive impairment or it may be necessary to have a discussion with the primary care provider about alternative options.



2. Benzodiazepines and Sedative-Hypnotics

- **Examples:** Lorazepam (Ativan), diazepam (Valium), zolpidem (Ambien).
- **Mechanism:** Benzodiazepines and other sedative-hypnotics depress the central nervous system by enhancing the effect of gamma-aminobutyric acid (GABA). While these drugs are

commonly used for anxiety and insomnia, they can impair short-term memory, attention, and executive function.

- **Effects on Cognition:** These medications can induce drowsiness, confusion, and cognitive dulling. Chronic use has been associated with increased fall risk and may worsen symptoms of dementia.
- **Management:** In many cases, it is best to avoid benzodiazepines and sedatives in the elderly. The desired effect of somnolence can lead to unintended consequences which often involve falls. It is best to examine if the medication is required to be dosed on a scheduled basis, or as needed. Preferably, as needed dosing can be utilized and decrease the number of received doses thereby decreasing the risk of falls and accidents. If issues persist, the general practitioner should be contacted about selecting an alternative or decreasing the dose. Short acting benzodiazepines typically preferred in the elderly include lorazepam, temazepam, and oxazepam.

Note: It is extremely important for medical staff to understand if a patient has been using benzodiazepines for an extended period; the medications cannot be stopped cold turkey. There is a serious risk of seizures and potential death, if stopped without an appropriate titration schedule.



3. Opioid Analgesics

- **Examples:** Morphine, oxycodone, hydrocodone.
- **Mechanism:** Opioids act on the central nervous system to relieve pain but can also cause sedation and cognitive impairment by altering neurotransmission.

- **Effects on Cognition:** In the elderly, opioids can cause confusion, hallucinations, and impaired cognitive function, which may be mistaken for dementia, especially in those who are sensitive to their effects or taking high doses.
- **Management:** Unfortunately, aches and pains often accompany increasing age and opioids are frequently used to provide relief. While providing pain relief, the opioids can cause a marked drop in cognitive performance. If an opioid has been selected for an elderly person, this is another great case to pursue as needed dosing regimen. A discussion with the primary care provider may reveal an NSAID and/or acetaminophen may be sufficient.

4. Antipsychotics

- **Examples:** Haloperidol (Haldol), risperidone, quetiapine.
- **Mechanism:** Antipsychotics work by blocking dopamine receptors in the brain, but they also affect other neurotransmitter systems such as acetylcholine and serotonin, leading to cognitive side effects.
- **Effects on Cognition:** Antipsychotic medications can cause sedation, confusion, and memory disturbances, particularly in elderly patients. While these drugs are sometimes used to manage behavioral symptoms of dementia, they can worsen cognitive symptoms or mimic dementia when used inappropriately.
- **Management:** Many times, antipsychotic medications are used for off-label purposes and are not used appropriately in the geriatric population. It is important to be sensitive to changes that may occur with the initiation of therapy. Behavioral changes are expected to occur with usage. If a patient is experiencing a large decrease in cognitive function, it may be beneficial to withhold doses until a discussion can be had with the prescriber.



5. Corticosteroids

- **Examples:** Prednisone, dexamethasone, methylprednisolone.
- **Mechanism:** Corticosteroids can affect mood, cognition, and behavior by altering neurotransmitter systems and causing electrolyte imbalances.
- **Effects on Cognition:** Long-term or high-dose steroid use can lead to psychiatric symptoms, including confusion, mood swings, and memory problems. These cognitive effects may be mistaken for early-stage dementia.



- **Management:** If a patient has started a new steroid, it is common to have behavioral changes which can include rage and delirium. The most likely time behavioral changes are experienced with corticosteroids is when used in high doses. When treating different conditions, a large dose of steroid could be required to decrease the inflammation, but it is not unexpected for an elderly person to have noticeable changes in behavior. Due to the typical duration of therapy being limited to a few days, it is usually a case of being alert to the likelihood of behavioral changes and utilize ways to get through the few days of therapy.

6. Proton Pump Inhibitors (PPIs)

- **Examples:** lansoprazole (Prevacid), omeprazole (Prilosec), pantoprazole (Protonix).
- **Mechanism:** These drugs reduce stomach acid but may also affect cognition by altering gut microbiota or interfering with vitamin B12 absorption.
- **Effects on Cognition:** Chronic use of PPIs has been linked to cognitive decline, possibly due to vitamin B12 deficiency, which is essential for maintaining cognitive function.
- **Management:** PPI use has exploded in recent years and patients are often seen with one on their hospital discharge medications. Cognitive decline is not readily apparent with PPIs, due to the slow onset of potential cognitive impairment. A patient may need to be on PPI therapy for months before a marked decrease in cognitive performance is realized. If your patient has been taking a PPI for a few months and there is a noticeable change in cognitive function, discuss with the prescriber the necessity of the medication and at the very least, add a B-complex vitamin with specifically contains both vitamin B-12 and folate.

7. Antihypertensive Medications

- **Examples:** Beta-blockers (e.g., metoprolol), clonidine, calcium channel blockers.
- **Mechanism:** These medications reduce blood pressure by affecting the central nervous system and other pathways.
- **Effects on Cognition:** Some antihypertensive medications can cause fatigue, dizziness, and confusion, particularly in elderly patients with hypotension, which can lead to cognitive symptoms that may mimic dementia.
- **Management:** A good rule of thumb is any medication that can affect blood pressure can affect neurological function. These medications pose one of the most difficult approaches in managing. While there are many medications that lower blood pressure, finding the right combination can be trying. If a patient has initiated a new blood pressure medication, consult with the prescriber or pharmacist about the likelihood of it interacting with

other medications. Changes in blood pressure and heart rate can often result in dizziness and an increase in falls. For those in your care, it is important for them to be slow and deliberate in changing positions from sitting or lying down to standing. Orthostasis can hit quickly and quickly become disorienting.

Unfortunately for the elderly, it is not only medications that can affect cognitive function but also disease states. Diabetes, a common condition in the elderly, can lead to severe disorientation with fluctuations in blood glucose levels. Severe hypoglycemia can lead to confusion, dizziness, falls, fractures, seizures, unconsciousness, and even death in



older adults. Repeated episodes can also increase the risk of cognitive decline and cardiovascular events. Hyperglycemia or elevated blood glucose levels over time can lead to dehydration, electrolyte imbalances, increased risk of infections, blurred vision, and, in extreme cases, a hyperosmolar hyperglycemic state (HHS), which is life-threatening and requires emergency treatment. To further complicate the situation, individuals with diabetes also suffer from renal impairment. Declining kidney function can affect how medications, including insulin and oral diabetic medications such as metformin or sulfonylureas are metabolized.

Urinary tract infections in the elderly population may lead to acute change in neurological function. Unlike dementia, which is gradual, UTIs can present with extreme confusion and potential delirium. Frequently, it is the manifestation of acute confusion that triggers the diagnostic investigation.



Best Practices for Managing Medication-Induced Cognitive Impairment

1. Medication Review

- Regularly reviewing all medications an elderly patient is taking is critical. This review should include both prescription and over-the-counter medications, as well as supplements, to identify potential culprits of cognitive symptoms (if your physician is not doing this, speak to a pharmacist.)
- Using tools like the **Beers Criteria** can help identify medications that are inappropriate for use in the elderly and increase the risk of cognitive impairment.



2. Dose Adjustment

- Reducing the dosage of medications, particularly CNS depressants and anticholinergic drugs, can mitigate cognitive side effects. Gradual dose reductions should be attempted under medical supervision to avoid withdrawal symptoms or other adverse effects.

3. Alternative Medications

- Where possible, replacing medications that cause cognitive impairment with safer alternatives can reduce the risk of confusion or dementia-like symptoms. For example, non-

anticholinergic antihistamines (e.g., loratadine) can be used instead of diphenhydramine, and melatonin can be tried in place of sedative-hypnotics for insomnia.

4. Non-Pharmacological Interventions

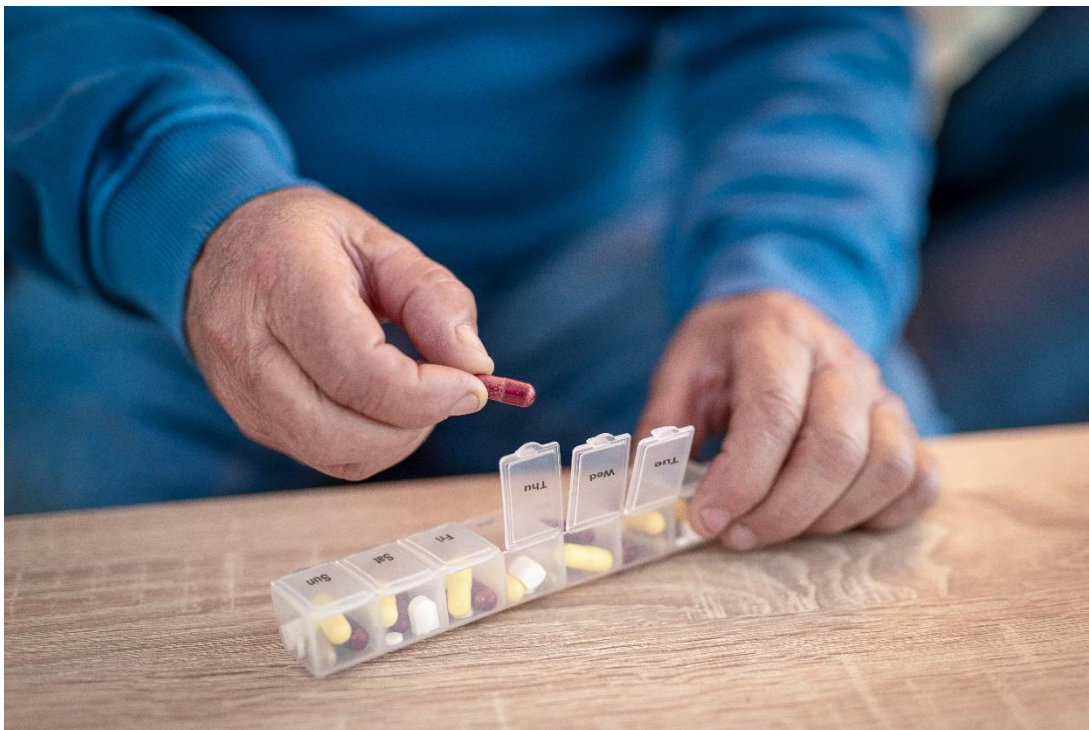
- Non-drug approaches to managing conditions like anxiety, insomnia, and chronic pain can help reduce reliance on medications that impair cognition. Cognitive behavioral therapy (CBT), physical therapy, and lifestyle modifications are effective strategies.

5. Monitoring and Communication

- Physicians, caregivers, and family members should monitor for changes in cognition, particularly after starting or adjusting medications. Early detection of medication-induced cognitive decline can prevent misdiagnosis and improve outcomes.
- Clear communication between healthcare providers and caregivers ensures that potential cognitive side effects are identified and managed promptly.

6. Gradual Withdrawal of Offending Medications

- When medication-induced cognitive impairment is suspected, a trial of gradual withdrawal or substitution of the offending drug can clarify the cause. For example, tapering off anticholinergic drugs may lead to an improvement in cognitive function, confirming the diagnosis of drug-induced cognitive decline.



PRACTICAL SUGGESTIONS FOR MANAGING MEDICATIONS

Managing medications requires careful organization. A pill organizer with large, clear labels can be very helpful. For added assistance, consider using a talking medication dispenser. Setting up medication reminders using alarms, smartphone apps, or voice-activated assistants like Alexa or Google Home can help ensure medications are taken on time. Store medications in a consistent, easy-to-reach location to ensure they are readily accessible when needed.

A wide range of weekly and monthly pill organizers with alarms can be found online for a wide range of prices. Choose one within your price range and based on your needs.

Smart speakers, such as Amazon Echo or Google Home, can play a pivotal role in assisting people to be independent with daily tasks. These devices respond to voice commands, making them easy to use. Smart speakers can provide reminders for medications, appointments, and daily activities, helping you stay organized and independent.

Additionally, digital calendars with automatic alerts for medications and appointments, along with apps that send notifications or alarms on phones and tablets, can serve as great tools for keeping track of important tasks. Pill organizers with built-in alarms can also remind you to take your medications on time, ensuring you stay on top of your health needs which will help you maintain your independence.



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Jordan Morrison is a pharmacist who did his training at East Tennessee State University. He is affiliated with Access Family Pharmacy in Chattanooga.

He has been a long-time consultant to senior living settings and the nursing staff who work there, striving to assure the most effective medication plans for residents in order to maximize well-being and minimize drug interactions and side-effects.

