

## BRAIN HEALTH:

# Medications' Effects on Older Adults' Brain Function



This brochure discusses medications' cognitive side effects. Understanding potential problems that some medications cause can help older adults, families, and Aging Network staff to better recognize and manage these side effects. This brochure explains which medications affect brain function and why. It also provides links to free resources and tools.

Medications and combinations of medicines can have side effects. Side effects are the unplanned symptoms or feelings a person has when taking a drug. Many side effects are not serious and either go away on their own or can be easily managed. However, some side effects can cause serious health problems, including effects on an older adult's cognition. Cognition is a person's ability to think, understand, learn, plan, and remember. Cognitive side effects include problems concentrating or paying attention, confusion, memory loss, and hallucinations or delusions. Older adults, their families, and Aging Network staff that serve them sometimes mistake these side effects for dementia, such as Alzheimer's disease.

### WHAT HAPPENS AS PEOPLE AGE?

As people age, their bodies change in ways that can influence how medications affect them. For example, older adults' brains begin to change in structure and ability. In addition, changes in older adults' digestive and circulatory systems, kidneys, and livers affect how fast medications enter and leave their bodies. Weight changes may also affect how much medication older adults need, and how long drugs stay in their bodies. As a result of these normal changes, reactions to medications can change as well.

Chronic health conditions can further complicate the effects of medications. Eighty percent of older adults have at least one chronic health condition, and half have at least two. These health

conditions can require medications that may interact with one another in harmful ways. An interaction occurs when one medication affects how another works when a person takes the two drugs together. In addition, medications can cause problems by interacting with food, supplements, natural products, alcohol, or other health conditions. For example, when mixed with some drugs, alcohol can cause dizziness, drowsiness, or changes in heartbeat.

CHRONIC HEALTH  
CONDITIONS CAN  
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**80%**  
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## WHAT GROUPS OF MEDICATIONS MIGHT CAUSE TROUBLE WITH COGNITION?

In 2015, the National Academy of Medicine published a report on cognitive aging. This report describes some groups of medications that may affect older adults' cognition. These groups include certain antihistamines, anti-anxiety and antidepressant medications, sleep aids, antipsychotics, muscle relaxants, antimuscarinics for urinary incontinence, and antispasmodics for relief of cramps or spasms of the stomach, intestines, and bladder. Some of the drugs that can cause cognitive problems in older adults are sold over the counter. A summary of the Institute of Medicine report is available at [http://iom.nationalacademies.org/~media/Files/Report%20Files/2015/Cognitive\\_aging/Action%20Guide%20for%20Health%20Care%20Providers\\_V6.pdf](http://iom.nationalacademies.org/~media/Files/Report%20Files/2015/Cognitive_aging/Action%20Guide%20for%20Health%20Care%20Providers_V6.pdf). Chapter 4B of the report contains more detailed information on medications and cognitive aging at [http://books.nap.edu/openbook.php?record\\_id=21693&page=149](http://books.nap.edu/openbook.php?record_id=21693&page=149).

## WHAT DO DOCTORS HAVE TO SAY ABOUT OLDER ADULTS' COGNITION AND USE OF MEDICATIONS?

In 2015, the American Geriatrics Society, whose members are doctors, nurses, pharmacists, social workers, and other health care professionals serving older adults, updated its list of medications that older adults should avoid, or use with caution. The Society's list includes medications that have "anticholinergic" effects. These drugs block one of the chemicals (acetylcholine) that brain cells use to communicate with each other. A drug's anticholinergic effects can cause older adults to experience confusion, memory loss, and worsening of other mental functions, among other things. Several research reviews show links between drugs with anticholinergic effects and cognitive problems in older adults, such as delirium, cognitive impairment, and dementia.

Older adults should get advice from a health care professional about use of prescription and over-the-counter medications, especially before making any changes. Health care professionals can also provide information about alternatives to medications that may harm brain function.

Some drugs with anticholinergic effects may be needed to treat allergies, nausea, depression, muscle spasm, and other medical conditions. However, sometimes these medications are used for the wrong reasons, or as substitutes for other medications that are more effective or have fewer side effects. Information about alternatives is available at <http://geriatricscareonline.org/ProductAbstract/american-geriatrics-society-updated-beers-criteria-for-potentially-inappropriate-medication-use-in-older-adults/CL001>.

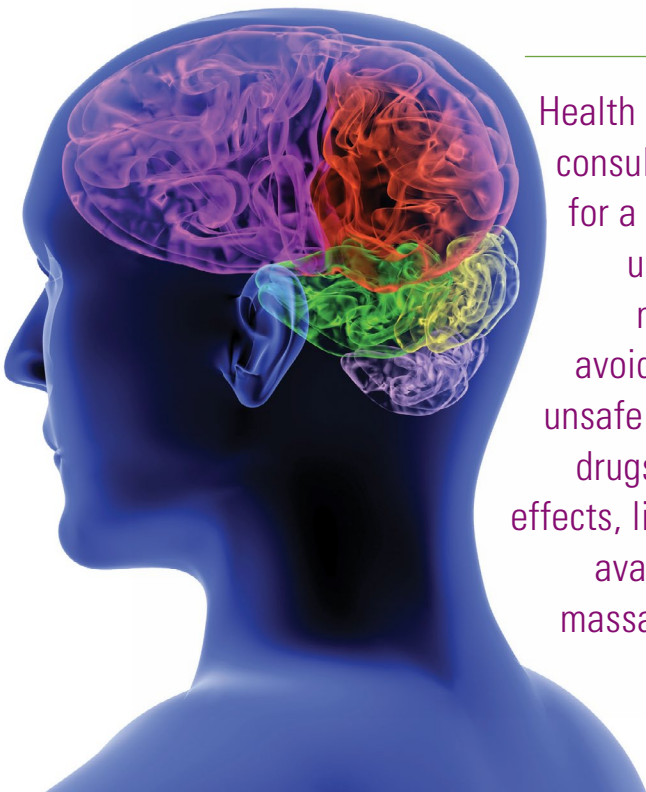
Another group of drugs, benzodiazepines, which treat anxiety, sleeplessness, and agitation, may increase older adults' risk for memory loss, delirium, cognitive impairment, falls, fractures, and motor vehicle accidents. The American Geriatrics Society says that health care professionals need to carefully consider these side effects when treating older adults, and limit the use of benzodiazepines to treating conditions such as seizures or other neurological conditions, alcohol withdrawal, severe generalized anxiety disorder, and anesthesia, as well as end-of-life care.

## WHAT SHOULD AGING NETWORK STAFF DO?

Aging Network staff can:

- Educate older adults, their families, and others about the cognitive effects of certain types of drugs.
- Connect people with evidence-based resources, and encourage them to discuss their medications and any side effects with their health care professionals. This is especially important during care transitions, such as after having surgery or leaving a hospital.

When older adults talk to their health care professionals, they or their families need to describe any cognitive symptoms they may have, and provide a list of their medications, including over-the-counter drugs, vitamins, natural products and supplements. Talking with their health care professionals can help older adults get the best and safest treatments possible.



Health care professionals who work in the Aging Network can consult the American Geriatrics Society's 2015 Beers Criteria for a list of medications that should be avoided or should be used with caution by older adults. If a drug is listed as a medication that is potentially inappropriate for, or to be avoided in, older adults, this does not mean that the drug is unsafe for all of them. Appearing on the list means that these drugs may be inappropriate for older adults because of side effects, limited effectiveness, or that there are safer treatments available. For example, some non-drug treatments such as massage or gentle exercise may be appropriate for pain. The Society lists many such alternatives on their website.



## ADDITIONAL RESOURCES FOR AGING NETWORK STAFF

### American Geriatrics Society

*2015 Beers Criteria*

<http://geriatricscareonline.org/ProductAbstract/american-geriatrics-society-updated-beers-criteria-for-potentially-inappropriate-medication-use-in-older-adults/CL001>

### Centers for Disease Control and Prevention

*Older Adults and Adverse Drug Events*

<http://www.cdc.gov/MedicationSafety/AdultAdverseDrugEvents.html>

### Food and Drug Administration

*Medicines and You: A Guide for Older Adults*

<http://www.fda.gov/Drugs/ResourcesForYou/ucm163959.htm>

### National Institutes of Health

*Talking With Your Older Patient: A Clinician's Handbook*

<https://www.nia.nih.gov/health/publication/talking-your-older-patient/foreword>

### National Institutes of Health

*Medicines: Use Them Safely*

English: <https://www.nia.nih.gov/health/publication/medicines>

Spanish: <https://www.nia.nih.gov/espanol/publicaciones/medicamentos>

