

# **How Medication Can Affect Brain Health and Function**

# Medications that Can Cause Issues for Brain Health

- A number of medications can contribute to issues in memory and thinking:
  - Antihistamines (for example allergy medications like Benadryl and Zyrtec)
  - Anti-anxiety and antidepressant medications
  - Sleep aids
    - Benzodiazepines like *lorazepam (Ativan)*, *diazepam (Valium)*
    - Non-benzodiazepine sedatives like *zolpidem (Ambien)*, *zaleplon (Sonata)*, *eszopiclone (Lunesta)*
  - Antipsychotics
  - Muscle relaxants
  - Antimuscarinics (for urinary incontinence)
  - Antispasmodics (for cramps)
- These medications can include ones that are prescribed by our health care provider and others we can get over the counter
- Many of these drugs have anticholinergic effects, meaning they block the neurotransmitter acetylcholine from acting in our body
- Anticholinergic drugs, along with other drugs that impact our brain health, often “dampen” our brain functions



# Brain Health Supplements



- You may be familiar with brain health supplements that are often advertised to help improve memory and support memory.
- For example, **PrevaGen** is a dietary supplement that has been marketed as a way to improve cognitive function and memory. However, PrevaGen, like many other supplements that claim to help improve memory, has not been clinically proven to treat or prevent dementia. Other common marketed brain health supplements include BrainGain, Neuriva, and Focus Factor.
- **There is not strong evidence of the effectiveness of brain health supplements** and as a result they are **not recommended**. A few research trials have demonstrated modest, positive effects of brain health supplements. For example, a study found vitamin E to slow dementia progression in people with mild cognitive impairment. However, the research was based on a small number of participants and has not been widely replicated amongst other researchers. In other words, the evidence is incomplete, or contradictory, and does not justify the cost or any potential risks of these supplements, many of which are not yet fully understood.

# Medications for Treating Dementia Symptoms

The FDA has approved two types of medications for treating cognitive symptoms associated with Alzheimer's disease. These medications can help with symptoms such as memory loss, confusion, and problems with thinking and reasoning. These medications cannot cure Alzheimer's or stop it from progressing but instead can help lessen symptoms for a limited time.



## 1. Cholinesterase Inhibitors

Cholinesterase inhibitors prevent the breakdown of the neurotransmitter acetylcholine. This keeps acetylcholine levels in our bodies high. Research has shown these medications to delay or slow the worsening of dementia symptoms during early stages of the disease. *Examples: donepezil (Aricept), galantamine (Razadyne), rivastigmine (Exelon)*

## 2. Memantine

Memantine regulates glutamate in our bodies. Glutamate is an important chemical for processing, storage, and retrieval in our brains. Research has demonstrated this medication to improve mental function and ability to perform daily activities for some people. *Examples: memantine (Namenda), memantine/donepezil (Namzaric)*

Once-Daily



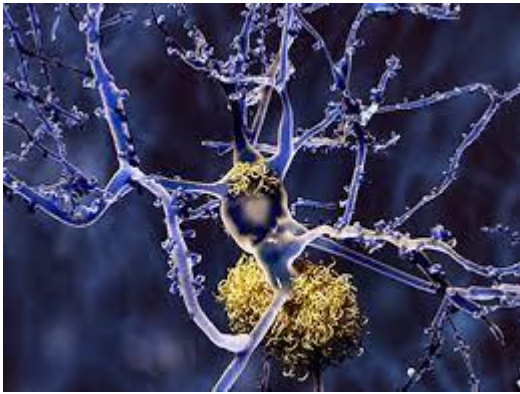
**Namenda XR**<sup>™</sup>  
(memantine HCl) extended release capsules

7 mg, 14 mg, 21 mg, 28 mg

# New Medication for Alzheimer's Disease – New Controversy



1. It clears amyloid from the brain
2. It is FDA approved for those with EARLY stage Alzheimer's Disease
3. It is not clear if it has a significant impact on cognition
4. It will cost \$55,000 a year.
5. It has side effects, primarily tiny brain bleeds (40% of those in the trial developed) and requires regular MRIs to detect
6. It is not yet available. Because of safety and effectiveness concerns, some insurance companies, hospitals and providers will not offer it



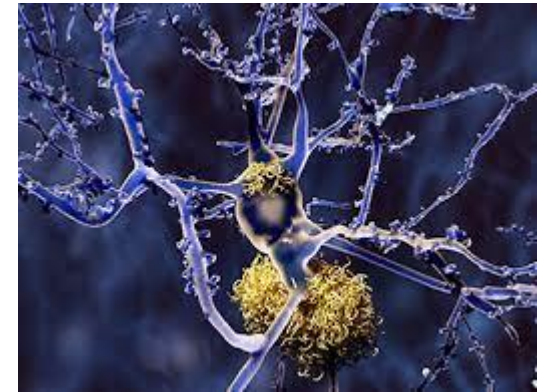
# New Medications for Alzheimer's Disease – New Controversy



**What:** Lequemi and Aduhelm are two new medications approved by the FDA through a fast-tracked process to treat urgent health conditions. Both drugs were approved for MCI or early-stage Alzheimer's, and were not tested for efficacy in later stages.

This means these drugs are still in a trial phase, and it is still unclear how effective they will be at slowing symptoms of Alzheimer's though some studies have been promising.

**How:** These drugs target amyloid plaques in the brain to slow down cognitive decline. There is not evidence for curing Alzheimer's nor reversing its effects.



**What's the Problem?:** Medicare only covers costs for these types of drugs when they are used in clinical trials, though they still cost thousands of dollars. Lequemi is not yet approved to be covered by Medicare, and costs over \$26,000.

Side effects for these drugs include temporary brain swelling and tiny brain bleeds, which require MRIs to detect. Additionally, infusion-related reactions can occur.

