

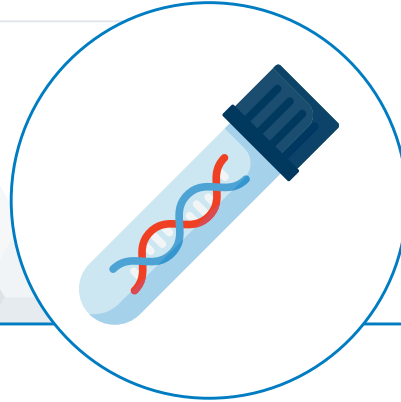


PRACTICE AID

Educating Your Patients and Their Care Partners About *APOE* Testing¹⁻⁴

Full abbreviations, accreditation, and disclosure information available at [PeerView.com/JNT40](https://www.peerview.com/JNT40)

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Neuroscience



***APOE* genetic testing is essential for patients considering treatment with ATTs in order to assess the risk for ARIA. Please share this printable resource with your patients and their care partners to help educate them about *APOE* testing.**

1. Sperling R et al. *Lancet Neurol*. 2012;11:241-249. 2. <https://www.alzheimersdiseasedna.com/learning-center/alzheimers-disease-apoe-gene-inherited>. 3. Ritchie M et al. *Neurology: Clinical Practice*. 2024;14:e200230. 4. Blasco D and Roberts JS. *J Prev Alzheimers Dis*. 2023;3:359-361.



Printable Resource

Understanding *APOE* Genetic Testing



What Is *APOE* Testing?

APOE genetic testing examines your DNA to look for certain variations in the *APOE* gene. Everyone has two copies of the *APOE* gene—one copy from your mother and one copy from your father. The *APOE* gene comes in several different forms, or alleles, the most common of which are *APOE* ϵ 2, *APOE* ϵ 3, and *APOE* ϵ 4.

Knowing what types of *APOE* gene you have can provide important information about your risk for certain treatment-related side effects and can help guide your treatment decisions.

Who Should Get *APOE* Testing?



Only patients with cognitive decline who are interested in receiving treatment with an amyloid-targeting therapy need to be tested.

What Does It Mean if I Am an *APOE* ϵ 4 Carrier?

Having one or two copies of the ϵ 4 type of *APOE* increases the risk of developing **amyloid-related imaging abnormalities (ARIA)** in people who are taking an amyloid-targeting therapy. ARIA is a term used to describe changes that can be seen on brain imaging scans, such as MRI.

There are two types of ARIA

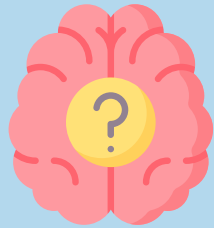
- 1. ARIA-E (edema or effusion):** this involves swelling in the brain.
- 2. ARIA-H (hemorrhagic changes):** this involves small bleeds in the brain or on its surface, or sometimes a larger bleed.

In most cases, patients do not experience any symptoms; however, some people experience symptoms such as headache, confusion, vision changes, dizziness, or problems with walking.

The risk of ARIA is higher in patients with two copies of *APOE* ϵ 4. You and your doctor should discuss all possible risks and benefits before making your decision about whether to start treatment.



Understanding *APOE* Genetic Testing



What Is the Relationship Between *APOE* and Alzheimer's Disease?

The $\epsilon 4$ type of *APOE* is associated with an increased risk of developing dementia due to Alzheimer's disease. Someone who has one copy of the *APOE* $\epsilon 4$ gene is at higher risk than someone who has no copies of $\epsilon 4$, and if a person has two copies of *APOE* $\epsilon 4$, their risk is further increased.

However, the *APOE* $\epsilon 4$ gene is just one of many risk factors for Alzheimer's disease. Most people with the *APOE* $\epsilon 4$ gene will not develop dementia due to Alzheimer's disease, and there are people with dementia due to Alzheimer's disease who have no copies of *APOE* $\epsilon 4$.

Your ancestry may affect how much your *APOE* genes increase your risk for Alzheimer's. The $\epsilon 4$ type of *APOE* seems to have the strongest impact on risk of Alzheimer's disease in people of White European ancestry and people of Asian ancestry. *APOE* $\epsilon 4$ seems to have less of an impact on Alzheimer's risk in those who are of Latin American, Hispanic, or African descent. More research is needed to better understand the risk of Alzheimer's disease in diverse populations.



What Do My Results Mean for My Family?

Learning your *APOE* results could also have implications for family members. For example, if you have two copies of *APOE* $\epsilon 4$, all of your children would have at least one copy of the *APOE* $\epsilon 4$ gene type. Your results might also show a possible risk of carrying *APOE* $\epsilon 4$ for your parents and siblings. With that in mind, consider discussing your decision to learn your *APOE* results with family members.



Should My Family Members Get *APOE* Genetic Testing?

APOE testing is NOT currently recommended for people without cognitive decline. Family members who are interested in more information about *APOE* testing should speak with a genetic counselor.