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Should You Get the Genetic Test for Alzheimer's Disease Risk?

All about the ApoE gene

If you have a family history of Alzheimer's disease, you might sometimes feel a sense of worry about your own "senior slip-ups." If they seem to be happening more often as you get older, is that a sign that you're headed down the same path?

Advances in genetic testing have made it possible to get hints about your future health risks just by spitting in a cup or swabbing your cheek. But should you do it?

Some people feel empowered by learning about their genetic risk factors. For others, it can lead to more questions than it does answers.

Marwan Sabbagh, MD, a neurologist and Director of Cleveland Clinic's Lou Ruvo Center for Brain Health, explains the Alzheimer's gene test and a few things to consider before taking the next step.

ApoE4: A marker for Alzheimer's risk

Experts believe there is a strong genetic component to Alzheimer's disease. But for late-onset Alzheimer's disease, the most common form of dementia that appears after age 65, it doesn't boil down to just genetics. Rather, there could be multiple genes as well as other lifestyle and environmental factors that play into whether a person develops the disease.

As of now, the gene that seems to be the strongest predictor of Alzheimer's risk is called ApoE. There are three varieties of this gene:

- ApoE2
- ApoE3
- ApoE4

Each person has two copies of ApoE genes. Studies have shown that a person who carries the ApoE4 variety is at an increased risk for developing Alzheimer's. Having one copy of ApoE4 can triple a person's risk, Dr. Sabbagh says, and having two copies raises the risk even further.

But ApoE4 is not a deciding factor for Alzheimer's. "It's a statistical risk, but it's not an absolute risk," Dr. Sabbagh reiterates.

That means that having ApoE4 doesn't mean you're guaranteed to develop Alzheimer's, and not having it doesn't necessarily put you in the clear.

That uncertainty is part of why it's important to carefully consider whether knowing your ApoE4 status would benefit you.

Who's a good candidate?

ApoE4 genotyping is not regularly used by most neurologists, Dr. Sabbagh says, and advisory groups recommend that people who do not have symptoms not get tested.

But he does believe that the test can be used safely and without causing harm or distress in some people.

"To me, people who are appropriate candidates are people with mild cognitive impairment," Dr. Sabbagh says. These are likely adults between the ages of about 50

and 75 who demonstrate early symptoms of Alzheimer's disease and have already gone through a family history and neuropsychological testing with a neurologist.

"I do order it to answer the question why — not just what," he explains. "Some people want to know why they got Alzheimer's disease, so this can help explain that they inherited it and were born with the risk."

Before you take it...

It's important to know that at least one direct-to-consumer genetic testing company has recently started including an ApoE4 test as part of its health kit.

Before taking such a test, Dr. Sabbagh recommends these considerations:

- 1 Consider why you want to know.** Are you just curious? Do you have a family history of Alzheimer's? And are you prepared to deal with learning that you might be a carrier?
- 2 Consider meeting with a genetic counselor.** A genetic counselor can review your family history and help determine what tests, if any, make sense for you. They can also talk through your screening results with you. "They're helpful and informative, and they will have information that a physician doesn't," Dr. Sabbagh says.
- 3 Consider if you'd like to get long-term care insurance.** The Genetic Information Nondiscrimination Act protects people from being dropped from their medical insurance because of genetic test results — but it doesn't protect them from discrimination related to life insurance or long-term care insurance. If you test positive for ApoE4 status and tell your physician, that information may become part of your medical record and could affect your ability to get life or long-term care insurance down the road.



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