Alzheimer disease (AD) is a common type of dementia. The most common form of the disease, called Late-Onset Alzheimer Disease, usually starts after age 60. By 85 years old, nearly 1 in 3 adults has AD. Late-Onset AD is caused by a combination of genetic, environmental, and lifestyle factors. One genetic risk factor for late-onset AD is a gene called apolipoprotein E or APOE.

**The APOE gene and Alzheimer disease**

Everyone has two copies of the APOE gene, one inherited from each parent. APOE does not cause AD, but is known to influence it. One variant of this gene, called the E4 variant, increases the risk for Late-Onset AD. However the E4 variant may affect people differently, making it impossible to give an accurate risk for AD based only on an APOE result. About 1 in every 4 or 5 people has at least one copy of the E4 variant. A smaller number of people (1 in 50) have two copies of the E4 variant.

Genetic testing can look at the APOE gene, but the result cannot predict who will eventually get AD. Test results also do not change medical care since there are no treatments that prevent or slow AD. Currently, routine testing of the APOE gene is not recommended by any professional organization. For this reason, Kaiser Permanente does not routinely order APOE testing.

Research on the APOE gene may help. Study teams are trying to learn why the E4 variant adds to a person’s risk for AD. This could lead to treatments in the future.

**Your genes don’t define you.**

Knowing your APOE variants is not enough. People from all backgrounds can develop AD, whether or not they have an E4 variant. For example:

- Having one or two E4 copies does not necessarily mean you will get AD
- You can develop AD even with NO copies of the E4 variant
- Your ancestry may influence the risk: E4 carriers with African American (Black) or Hispanic ancestry seem to have a lower AD risk than those with Caucasian (White) ancestry.

**STEPS YOU CAN TAKE**

There is no medicine that lowers the risk for AD, but some lifestyle choices may help with brain health.

- Exercise
- Eat healthy foods
- Keep your mind active
- Get enough sleep
- Don’t smoke

**Support is available**

Kaiser Permanente has a variety of programs that can help you with lifestyle changes. If you are still concerned about your risk for AD after talking with your doctor, you can ask to talk with a genetic specialist.

**If you have a close relative who had AD before age 65, it may help to review your family history with a genetic specialist.** Early-Onset Alzheimer disease is a rare form of AD that often develops between the ages of 30 to 60 years old. Many people in a family can be affected. APOE testing does not give you information about Early-Onset AD. Genetic testing for Early-Onset AD looks at genes other than APOE.