

# Blood Tests for Alzheimer's Disease

## Decision Guide



A tool to help you decide whether to have a blood test for Alzheimer's disease

This guide provides information about blood tests for people with cognitive difficulties, such as problems with memory and/or thinking, which could be due to Alzheimer's disease (AD). Testing for people with cognitive difficulties may be offered as part of a clinical evaluation or research study. This guide describes what information can be provided by a blood test and how the results are related to AD.

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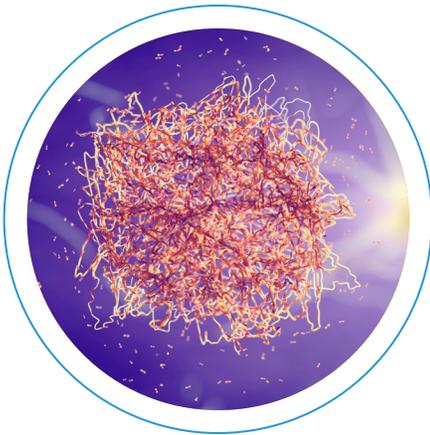
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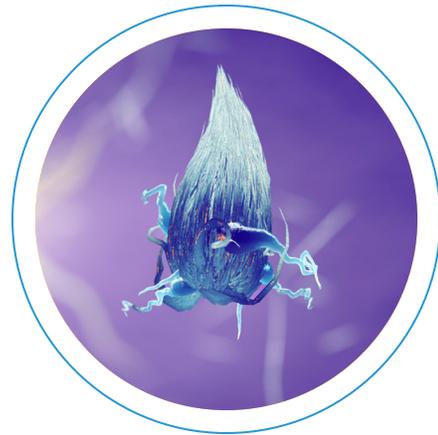


## What is Alzheimer's disease?

- Alzheimer's disease is a brain disease in which there is an abnormal buildup of proteins in the form of:

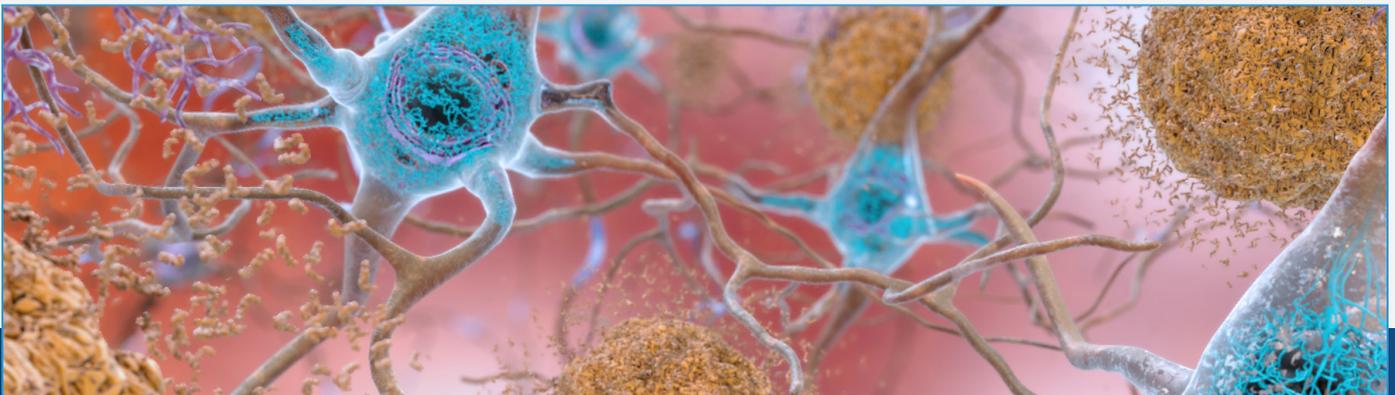


**Plaques:**  
made up of a protein  
called *amyloid*



**Tangles:**  
made up of a  
protein called *tau*

- The plaques and tangles interfere with the function of brain cells involved in thinking abilities.
- Plaques and tangles start to build up many years before symptoms develop. So, Alzheimer's disease changes are initially "silent," but eventually may cause cognitive problems, such as memory loss or trouble finding words, that get worse over time.



## Is Alzheimer's disease the only cause of cognitive difficulties?

- No. Alzheimer's disease is the most common cause of significant cognitive difficulties in older adults, but it is not the only cause.
- Cognitive difficulties can be caused by other brain diseases, such as strokes or Lewy body disease. Cognitive difficulties can also be caused by reversible problems that affect the brain, such as mood disorders, a thyroid imbalance, or medication side effects.
- It is important for anyone having cognitive difficulties to have a medical evaluation to determine the cause(s).

## What is done to determine if Alzheimer's disease is the cause of cognitive difficulties?

- A doctor will discuss the symptoms and conduct an evaluation, which may include:
  - Tests of memory and other thinking abilities to determine if there are cognitive changes that are not normal for a person's age and to see if these changes are typical for Alzheimer's disease.
  - Blood tests to evaluate for health problems that could affect thinking, such as a thyroid imbalance or vitamin deficiencies.
  - A brain scan (CT or MRI) to look for strokes or other causes of cognitive problems.
- This evaluation is necessary to provide a diagnosis of the cognitive difficulties and the likely causes.
- Based on the evaluation results, a doctor may be able to determine if Alzheimer's disease is likely. However, the diagnosis is not certain because the above tests cannot "see" the plaques and tangles of Alzheimer's disease in the brain.
- Specialized brain scans, called positron emission tomography (PET) scans, can detect the buildup of plaques and tangles in the brain. However, PET scans are not widely available and are not typically covered by insurance, so they are rarely done.
- A lumbar puncture (spinal tap) can be done to detect changes in the amount of amyloid and tau in the spinal fluid, which can indicate if plaques and tangles are building up in the brain. This testing is sometimes covered by insurance.



# Blood Tests for Alzheimer's Disease



## What are blood tests for Alzheimer's disease?

- The proteins that build up in the brain with Alzheimer's disease, amyloid and tau, are also found in small amounts in the blood.
- The amount and types of amyloid and tau found in the blood can indicate if these proteins are building up in the brain.



## Can my doctor order a blood test for Alzheimer's disease now?

- There are blood tests currently available that doctors may order for people with confirmed cognitive difficulties that could be due to AD. These tests measure the levels of different amyloid proteins in the blood.
- Other blood tests, including ones that detect levels of tau in the blood, are being developed, but are currently only available to people participating in research studies.
- AD blood tests ordered by doctors may not be covered by health insurance.

## What information do blood tests provide when someone has confirmed cognitive difficulties?

- Blood tests can help doctors determine if a person's cognitive difficulties are likely due to Alzheimer's disease by looking for specific proteins related to AD.
- If the blood test result is normal, there is a low likelihood that Alzheimer's disease is causing the cognitive difficulties. Other causes should be considered and further explored.
- If the blood test result is abnormal, AD is more likely the cause, or at least contributes to the cognitive difficulties. However, the doctor will base the diagnosis not only on the results of the AD blood test, but also on the person's other health conditions, symptoms, and results of other diagnostic tests including cognitive testing and brain imaging.
- Even if a blood test indicates that AD is the likely cause of cognitive impairment, there may be additional diseases, medical conditions, or factors that are influencing a person's cognitive functioning. It is important to work with a doctor to explore these factors.

## What can be done if a blood test supports a diagnosis of Alzheimer's disease?

- A doctor may recommend medications to slow the progression of symptoms and/or a treatment to reduce brain amyloid. Medical professionals can help choose treatments that take into account the severity of the person's symptoms and other health conditions. Additional testing may be recommended before considering some treatments.
- Regardless of the results of an AD blood test, people with thinking difficulties can benefit from [maintaining brain health](#). Brain healthy activities include following a healthy diet, getting enough sleep, and participating in regular mental, physical, and social activities.
- People with thinking difficulties may use the AD blood test result as motivation to make or adjust [long-term plans](#), such as making financial and legal arrangements (e.g., designating powers of attorney), advance directives for medical care, and insurance decisions.
- Consider participating in a research study, even if the test is negative.



## What else is important to know about an Alzheimer's disease blood test?

- No blood test is 100% accurate. This includes blood tests for AD. It is important to know that and use that information when making a decision.
- Participants in studies of AD blood tests have been predominantly non-Hispanic white. More studies with diverse participants are needed to confirm whether blood tests provide similar information for people from other racial and ethnic groups.
- Participants in studies of AD blood tests are often healthy apart from having cognitive difficulties, so scientists do not currently know how other health conditions affect the results of AD blood tests.



## Why might someone with cognitive difficulties choose to have an Alzheimer's disease blood test?

- To learn more about the likelihood that their cognitive difficulties are due to Alzheimer's disease versus another cause. This information may help doctors with treatment planning and help people plan for the future.
- To participate in a research study that includes an AD blood test, such as a study comparing the results of AD blood tests to the results of other tests related to Alzheimer's disease.
- To participate in a clinical trial.



## Why might someone with cognitive difficulties choose not to have an AD blood test?

- Some people don't want to know what an AD blood test might show.
- Some tests may include other health or genetic risk factors to determine results. Some people may not want to know or share these factors.
- There are potential risks of discrimination. For example, an abnormal AD blood test may affect eligibility for long-term care insurance.



## What else is important to consider before deciding whether to have an AD blood test?

### What is the cost for an AD blood test?

AD blood tests in research settings are typically provided at no cost to a participant through the study. In health care settings, there may be a cost associated with the test since they are not covered by most health insurance.

### Will the results be entered into medical records?

Depending on how the test was completed (i.e., by a doctor, independently, or through research), results may be entered into a person's medical record. A medical record is a legal document and can be accessed by other agencies such as insurance companies. Having results in the medical record may be associated with risks, such as insurance or medical discrimination. This information can be discussed with a health care provider or research team before testing.

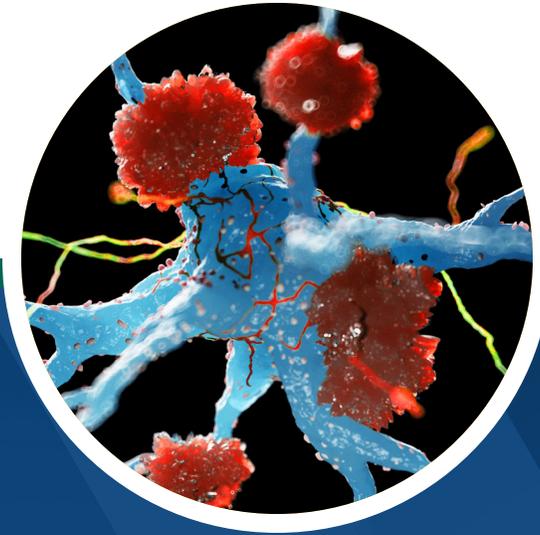
### How will the results impact a person emotionally?

- The results may help with future decisions about a person's health care or lifestyle.
- The results may cause undue worry about the future if they indicate likely Alzheimer's disease. Or, they may offer relief by providing the cause of cognitive difficulties and help motivate a person to take positive steps with this knowledge.

### How might these results impact relationships with family, friends, or co-workers?

Consider if there are others who would be involved in the decision to get a blood test or in learning the results.





For additional information about blood tests for Alzheimer's disease, speak with a health care provider or research team.

To learn more about Alzheimer's disease and related dementias, visit [www.alzheimers.gov](http://www.alzheimers.gov).

Some blood tests also provide information about genetic results related to Alzheimer's disease. To learn more about genetic risk for Alzheimer's disease and whether or not to learn these results, visit [genetestornot.org](http://genetestornot.org)

This information is provided by the Advisory Group on Risk Evidence Education for Dementia (AGREEDementia). Learn more about AGREEDementia at [www.agreedementia.org](http://www.agreedementia.org).

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