



## What is the role of National Clinical Research?

We are very pleased to be able to offer a wide array of research studies to our community which involve the very latest investigational therapies for the treatment and prevention of Alzheimer's disease. We are unique as we have more study opportunities available for memory loss than anywhere else in the state of Virginia, including all of our medical universities. We have said, and believe, that the cure to Alzheimer's disease will come through us. We hope you will seek to learn more about these studies and consider participating in one. With your help, we hope that one day we can celebrate together when we are a part of a medical breakthrough for this disease.

## When does amyloid-beta begin to deposit in the brain?

Research is teaching us that deposits of amyloid beta begin early in life, perhaps 20 to 30 years before the first symptom of memory loss occurs. This means that the disease is already in the brain and may even be causing some damage to the brain cells well before memory loss is detected. This also means we should begin to look for ways to treat the problem early, right when the first symptom of memory loss occurs (and not after it has advanced to be a real problem).

## How can I tell if I have amyloid plaque in my brain?

A brain scan called a positron emission tomography, or PET scan for short, can detect amyloid beta plaque in the brain. Because there is currently no treatment available to reduce this plaque, the test is available ONLY to those people who participate in research studies.



## What is my next step?

If you or a relative would like to be a part of a research study for memory loss, there is still room and still time but don't delay as once the study has the number of patients it needs, it will close to new patients. By the way, the initial evaluation (valued at close to \$10,000), as well as all of the subsequent medical care and testing for memory loss, and the study medication will be offered to those who participate in this research study at no cost. To learn more about our studies to prevent memory loss and to make your appointment, call 804-755-2300.

For a real treat and a wonderful educational experience, we recommend you watch the PBS NOVA program called "Can Alzheimer's Be Stopped?" Type the following address on your computer's browser to view it: <http://www.pbs.org/wgbh/nova/body/alzheimers-be-stopped.html>



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804-755-2300  
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# THE LATEST ABOUT MEMORY LOSS



## No One Wants to Have Memory Loss

Of all the illnesses that we face as we grow older, memory loss is one of the most dreaded. We hear people say, “She died of a heart attack, but her mind was good right up to the end.” We all would want that ... we all want to interact with our loved ones and our friends throughout life even to the last.

## Who develops Memory Loss?

Memory loss may well affect as many as half of us if we live long enough. Statistics show that memory loss becomes more common the older we get. It usually doesn't begin until we turn 65 (although a handful of people can experience it earlier) and by the time we are 85, roughly 50% of us can have some degree of memory loss.

## Are there different kinds of Memory Loss?

Yes, memory loss (which is also called dementia) can be caused by different things and depending on the cause, we give them different names. For example, dementia/memory loss caused by one or more strokes is called vascular dementia. Dementia/memory loss caused by an automobile accident or head injuries from football or soccer is called traumatic brain injury. The most common form of dementia/memory loss is called Alzheimer's disease which affects 70% of all people with memory loss.



## Is Alzheimer's disease inherited?

There is a form of Alzheimer's disease that affects a very small number of people which usually begins as early as age 45 and before 65 years of age. This form is called early onset or familial Alzheimer's disease. This form of memory loss is inherited from mother or father. Each child has a 50% chance of inheriting Alzheimer's disease.

## What causes Alzheimer's disease?

In a word, no one knows for sure what the cause is. For those with early onset or familial Alzheimer's disease (see above), the problem appears to begin with deposits of a protein called amyloid beta in the brain. Plaques of amyloid beta cause individual brain cells to become dysfunctional and to eventually die. This loss of brain cells and their lack of proper functioning lead to a rapidly progressive memory loss.

For the majority of people who develop Alzheimer's disease, we believe the same thing happens except that the formation of amyloid beta plaques in the brain begin later. In this case, it takes a little longer for brain cells to become dysfunctional and die. The result, however, is the same ... a slow decline in memory, one that occurs most often after age of 65 and progresses over several years (i.e., 1 to 7 years) before the patient has near complete loss of memory.

## Are there any medications that can slow or stop Memory Loss?

There are several prescription medications that are on the market today for people with memory loss. These medications help brain cells communicate better with each other and this may improve memory a little in the short term. However, these medications do not stop the underlying build-up of amyloid beta plaques in the brain and thus do not stop or slow the progressive loss of memory with time. This means that people with Alzheimer's disease will continue to lose their memory in spite of taking one or more of these prescription medications.

The hope for slowing or stopping the progressive loss of memory is with medications currently being tested in research studies. One group of these medications attaches to amyloid beta and helps remove it from the brain. Research studies show that these medications don't offer much help in people with advanced memory loss but may help slow or halt the progress of the disease in people with early signs of memory loss. For this reason, most Alzheimer's research studies are currently being conducted in people with mild memory loss symptoms.

An example of a medication currently under investigation that binds to amyloid beta is called aducanumab (ad-u'-can-u-mab). In a study in which aducanumab was given to people with mild Alzheimer's disease, those receiving the medication had significantly less memory loss and nearly complete removal of the amyloid beta in their brain after just one year of treatment. If you wish to read more about this study, you may search the word “aducanumab” on your computer (*look for the journal Nature, 2016*).

## What is involved in a research study?

A research study begins with an informed consent, a document which fully describes the study for the patient who is interested. The patient must sign this document before the study can be started. The next step is a full and thorough medical evaluation including a medical history and physical, blood tests, and testing by memory specialists to see if any memory loss can be detected. If there is no evidence of a memory problem, the process stops there but if the patient has evidence of memory loss, the next step is to obtain a MRI scan. This will tell the doctors whether there are other causes of memory loss, such as a past stroke or trauma. If no other cause is found, then the PET scan for amyloid-beta plaque is conducted. If this test is positive, the person begins the treatment phase of the study.

The first phase of treatment provides the real medication for amyloid-beta or a placebo. This treatment phase typically lasts for 18 to 24 months. After this, everyone is given the real amyloid-beta medication for another 18 or 24 months or longer. This means that all patients who complete the study will receive the investigational medication at some point in the study, and possibly for the entire duration, to see if it helps to slow or halt memory loss.

