Alzheimer’s disease (AD) is a brain disease in which the nerve cells responsible for thinking are slowly damaged over time. AD is the most common cause of dementia, which is a decline in thinking that interferes with one’s everyday functions. It is believed that more than 5 million Americans over the age of 65 and at least 200,000 people in America under the age of 65 have AD.

What are the causes of Alzheimer’s disease?

In AD, the brain contains abnormal protein deposits called plaques (made up of amyloid protein) and tangles (composed of tau protein). These deposits begin 10-20 years before a person develops symptoms of the disease. Rarely, AD is caused by a genetic mutation that leads to excess amyloid protein in the brain. In most cases, though, the cause of AD is not known. However, scientists have learned a great deal about what factors may increase a person’s risk of developing AD.

The single most important risk factor for developing AD is age. The likelihood of developing AD doubles every 5 years after age 65. Additional factors that appear to increase the risk of developing AD include:

- Family history of AD
- Other health conditions, such as diabetes and high blood pressure
- Lack of physical activity
- Obesity and/or a poor diet
- Smoking
- Limited education

What are the symptoms of Alzheimer’s disease?

AD is often described in “stages.” Each stage has typical symptoms, though these may vary from person to person. Progression from one stage to the next is gradual.
Early stage
AD begins gradually and may, at first, be difficult to recognize. Common early difficulties include trouble with the following tasks:

- Remembering recent events
- Keeping track of time
- Naming familiar people or things
- Solving problems
- Planning
- Learning new things

Late stage
A person with advanced AD is often unable to:

- Communicate
- Recognize people, places, or objects
- Walk

They may sleep much of the time and usually need full-time care.

Middle stage
Memory loss progresses and people find it more difficult to:

- Read
- Write
- Speak
- Perform household tasks
- Choose and/or put on clothing
- Bathe without reminders

Other symptoms
Other symptoms that can occur at any stage include changes in:

- Mood, such as anxiety or depression
- Personality
- Behavior, including agitation

How is Alzheimer’s disease diagnosed?
No single test leads to a diagnosis of AD. Rather, a diagnosis is made after a complete evaluation that includes:

- A detailed history and physical exam, including information from family or others who know the person well
- Tests to evaluate memory and thinking
- Blood tests, brain scans, and in some cases genetic tests or spinal fluid testing

What are the prognosis and options for treatment?
There is no known cure for AD. The duration of the disease can vary from a few years to more than 20, though most people live 8-10 years after being diagnosed.

There are six different prescription drugs used to slow the symptoms of AD:

- Donepezil (Aricept®)
- Galantamine (Razadyne®)
- Rivastigmine (Exelon®)
- Memantine (Namenda®)
- A drug containing both donepezil and memantine, called Namzaric®
- Aducanumab (Aduhelm®)*

*Aducanumab is different from the above drugs as it is given by intravenous infusion (through a vein in the arm). It has been studied in persons with very early AD symptoms. Its use is controversial, and it is not available at Michigan Medicine.