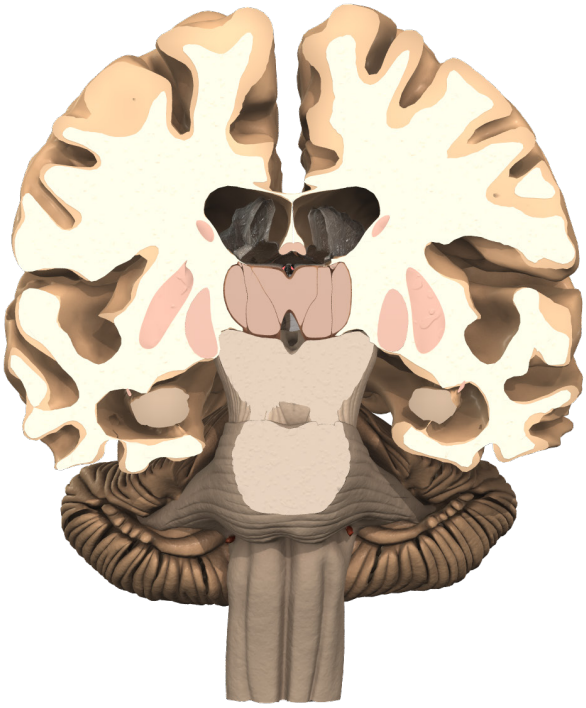
Patient Education

Alzheimer’s disease

What are the causes?



The exact cause of Alzheimer’s disease is unknown. However, there are some factors, which may contribute to the progressive damage caused to the brain.

The common risk factors include:

Age

Aging can cause brain tissue to become less capable of repairing damage. As a result, an increased loss of neuronal synapses and dysfunction of microglia can lead to a reduction in brain volume. This can increase the risk of a person developing Alzheimer's disease.

Genetics

Apolipoprotein E (APOE) regulates lipid metabolism. However, a variation of the APOE gene, called APOE e4 isoform, can cause increased aggregation and reduced clearing of β-amyloid, a toxic form of amyloid protein found in the brain of patients with Alzheimer's disease.

Type 2 diabetes mellitus

Type 2 diabetes mellitus can cause increased insulin production as the body fails to recognize the insulin already available. Excessive insulin in the body can downregulate neurotransmitters, reducing synaptic activity, and increasing the risk of developing Alzheimer's disease.

Hypertension

Hypertension, or elevated blood pressure may accelerate a loss of integrity to the blood-brain barrier (BBB). An increased leakage of immune cells that results, can activate microglia and trigger inflammation in the brain, which may lead to Alzheimer's disease.

The common risk factors include:

Cerebrovascular disease

Cerebrovascular disease is a group of conditions, such as stroke, which can result in reduced blood flow to the brain. This can disrupt the balance between the production and clearing of β-amyloid. An increased presence of β-amyloid can lead to the onset of Alzheimer's disease.

Smoking

Smoking increases the risk of cerebral vascular accidents, a risk factor for the onset of dementia.

Smoking also causes oxidative stress to brain tissue. This can lead to brain tissue inflammation, resulting in damage to or the destruction of neuronal tissue. This may increase the risk of Alzheimer's disease.