Alzheimer's disease

This help sheet describes the symptoms of Alzheimer's disease, the most common form of dementia, as well as its causes, progression and treatment.

What is Alzheimer's disease?

Alzheimer's disease is a physical brain disease that causes dementia, resulting in impaired memory, thinking and behaviour. It is named after Alois Alzheimer, the German doctor who first described it in 1907.

Alzheimer's disease is a progressive dementia – caused by a progressive degeneration of brain cells. The brain is the control centre for your whole body and different regions of the brain are responsible for different behaviours. The brain degeneration that occurs in Alzheimer's disease affects memory, thinking skills, emotions, behaviour and mood. As a result, a person's ability to carry out daily activities becomes impaired. As the disease progresses, symptoms worsen.

Alzheimer's disease is characterised by specific changes in the brain. There is an abnormal build up of a protein called beta amyloid, which forms "plaques" outside the brain cells. Inside the brain cells, another protein called tau builds up into "tangles". These abnormal protein accumulations disrupt messages within the brain because they damage connections between brain cells. The brain cells eventually die and brain volume shrinks. These brain changes occur gradually and actually begin many years (on average around 15 years) before symptoms of dementia occur. The brain is able to compensate for the early damage, but eventually the damage becomes too great and brain function is affected.

As Alzheimer's disease affects different areas of the brain, specific functions or abilities are lost. Memory of recent events is often the first to be affected, but as the disease progresses, long-term memory is also lost. The disease also affects many of the brain's other functions and consequently language, attention, judgement and many other aspects of behaviour are affected.

What are the symptoms?

Alzheimer's disease typically starts slowly and in the early stages, the symptoms can be very subtle. However, as the disease progresses, symptoms become more noticeable and interfere with daily life. The disease affects each person differently and the symptoms experienced vary.

Common symptoms may include:

- Persistent and frequent memory loss, especially of recent events
- Repeatedly saying the same thing
- Vagueness in everyday conversation
- Being less able to plan, problem solve, organise and think logically
- Language difficulties such as finding the right word and understanding conversations
- Apparent loss of enthusiasm for previously enjoyed activities
- Taking longer to do routine tasks
- Becoming confused and disoriented, even in well-known places
- Inability to process questions and instructions
- Deterioration of social skills
- Emotional unpredictability
- Changes in behaviour, personality and mood

Symptoms vary over time as the disease progresses and different areas of the brain are affected. A person's abilities may fluctuate from day-to-day, or even within the one day, and can become worse in times of stress, fatigue or ill-health.

For the person experiencing the symptoms, the very nature of the changes within the brain may mean that he or she is unable to recognise that there are any changes.

Who gets Alzheimer's disease?

Any person can develop Alzheimer's disease, but it is much more common in older age. As for all forms of dementia, the risk of Alzheimer's increases with age.

In a few cases, Alzheimer's disease is inherited, caused by a genetic mutation passed from one generation to the next. This is called familial Alzheimer's disease and results in symptoms occurring at a relatively young age, usually in the 50s but sometimes younger. This type of Alzheimer's disease affects a very small number of people.

Other genes and lifestyle and health factors are associated with an increased risk of someone developing Alzheimer's disease. Being less mentally and physically active and having risk factors that affect heart and brain health (smoking, obesity, diabetes, high cholesterol, high blood pressure) seem to be associated with a higher chance of getting Alzheimer's disease, but do not make it certain. Further information about dementia risk factors and risk reduction is available at **yourbrainmatters.org.au**

What causes Alzheimer's disease?

Researchers are rapidly learning more about the chemical changes that damage brain cells in Alzheimer's disease. However, apart from the few individuals with familial Alzheimer's disease, it is not known why some people develop Alzheimer's disease and others do not. It is likely that a number of factors contribute to development of the disease, including environmental, genetic and health factors.

How is Alzheimer's disease diagnosed?

Currently there is no single test to diagnose Alzheimer's disease. The diagnosis is made after careful clinical consultation. The assessment might include a detailed medical history, a physical examination, blood and urine tests, a psychiatric assessment, neuropsychological tests (to assess memory and thinking abilities) and brain scans. After eliminating other causes, a clinical diagnosis of Alzheimer's disease can be made. The diagnosis can only be confirmed after death by examination of the brain tissue to identify the plaques and tangles.

New techniques for detecting the presence of Alzheimer's disease are becoming available. Plaques in the brain can now be seen using special brain scans and changes in protein levels can be identified in the cerebrospinal fluid (this is the fluid that surrounds the brain and spinal cord and a sample can be taken using a lumbar puncture). These new techniques mean that Alzheimer's disease can be diagnosed even before symptoms begin, which will become very important in the future when we have treatments that can stop the disease.

It is important to have an early and accurate diagnosis to determine whether the condition is caused by Alzheimer's disease or whether a different condition requiring its own specific treatment is causing the symptoms.

How does Alzheimer's disease progress?

The rate of progression varies greatly from person to person. However, the symptoms will get worse and the disease does lead eventually to complete dependence and finally death. The average time a person lives with Alzheimer's disease is 7 to 10 years, but this varies greatly from person to person.

Is there treatment available?

At present there is no cure for Alzheimer's disease and no treatment that can stop the disease progressing. However, there are medications available that can help stabilise or slow the decline in memory and thinking abilities for a time. Drugs may also be prescribed for secondary symptoms such as agitation or depression, or to help a person with Alzheimer's disease sleep better. Further information about these medications is available in the help sheet **About Dementia 9: Drug treatments and dementia**.

Non-drug therapies, staying active and socially connected, and managing stress can be beneficial for people with Alzheimer's disease. Education about the disease and professional support are important for the person with Alzheimer's disease, their family and carers. This support can make a positive difference to managing the condition.

Further Information

Dementia Australia offers support, information, education and counselling. Contact the National Dementia Helpline on **1800 100 500**, or visit our website at **dementia.org.au**

Interpreter

For language assistance phone the Translating and Interpreting Service on **131 450**