



ALZHEIMER'S DISEASE

Alzheimer's disease is the most common form of dementia accounting for between 50% and 60% of all dementias. This information sheet outlines the symptoms and causes of Alzheimer's disease, and describes what treatments are currently available.

Alzheimer's disease, first described by the German neurologist Alois Alzheimer, is a physical disease affecting the brain. During the course of the disease abnormal proteins form 'plaques' and 'tangles' in the structure of the brain. Tangles lead to death of brain cells. These changes are associated with a shortage of some important chemicals in the brain. These chemicals are involved with the transmission of messages within the brain.

Alzheimer's is a progressive disease, which means that gradually, over time, more parts of the brain are damaged. As this happens, the symptoms become more severe.

Symptoms

People in the early stages of Alzheimer's disease experience lapses of short-term memory. As the disease progresses they may:

- Have increasing difficulty managing complex or new tasks, and frequently forget the names of people, places, appointments and recent events.
- Show lack of initiative or withdrawal from usual activities.
- Experience emotional and personality changes. Frustration in the face of their increasing disability is common. Some feel anxious or sad, and may lose confidence. Some become more irritable or suspicious. Others seem to become emotionally bland.
- Have problems finding the right words or understanding what is said to them.

As the disease progresses, people with Alzheimer's will need more support from those who care for them. Eventually they will need help with all their daily activities.

While there are some common symptoms of Alzheimer's disease, it is important to remember that everyone is unique. No two cases of Alzheimer's are likely to be the same. People always experience illness in their own individual way.

What causes Alzheimer's disease?

So far, no one single factor has been identified as a cause for Alzheimer's disease. It is likely that a combination of factors, including age, genetic inheritance and environmental factors are responsible.

Age

Age is the greatest risk factor for dementia. Dementia affects approximately one in 20 people over the age of 65 and one in 5 over the age of 80. The majority of these will have Alzheimer's disease. However, Alzheimer's is not restricted to elderly people. No accurate New Zealand figures are available, but it's reasonable to guess there may be more than 1000 people under 65 with dementia in New Zealand, perhaps half of whom, will have Alzheimer's disease.

Genetic inheritance

Some relatives worry that they may inherit Alzheimer's disease. We do know that the chance of a person developing Alzheimer's disease is somewhat greater if they have a parent or sibling with the condition than if there were no cases of Alzheimer's in the immediate family. Similar genetic makeup among relatives is likely to be part of the reason for this. However, there are only a very few families where there is direct inheritance of the disease from one generation to the next, due to mutation of a single gene. In such families the disease usually appears relatively early in life.

In the general population a number of 'susceptibility genes' (which increase the risk of developing the disease but do not cause it) have been identified. Because of the difference in their chromosomal makeup, people with Down's syndrome who live into their 40s and 50s are highly likely to develop Alzheimer's disease.

Environmental factors

A few years ago, there were concerns that exposure to aluminium might cause Alzheimer's disease. However, these fears have largely been discounted. People who have had major head injuries appear to be at increased risk of developing dementia. Boxers who receive continual blows to the head are also at risk.

Research has shown that people who smoke and those who have high blood pressure, diabetes or high cholesterol levels increase their risk of developing

Alzheimer's disease. Research has also shown that eating more fruit and vegetables, which are high in anti-oxidants, can help your general health, as well as possibly playing a protective role against Alzheimer's. Modest alcohol consumption may protect against development of dementia but heavier drinking over a lengthy period will increase the risk.

Getting a diagnosis

If you are concerned about your own health, or the health of someone close to you, it is important to seek help from a GP.

An early diagnosis will:

- Help you plan for the future
- Enable a person with Alzheimer's to benefit from the treatments that are now available
- Help you identify sources of advice and support

There is no straightforward test for dementia. A diagnosis is usually made by excluding other conditions such as, depression, delirium, or the side effects of drugs. Once dementia has been established, to reach a diagnosis of Alzheimer's disease the GP or specialist will need to rule out arterial disease of the brain (cerebrovascular disease) and other less common causes of dementia. A number of tests will be done to rule out potentially treatable factors such as thyroid problems, vitamin deficiencies, anaemia, poor blood oxygenation, metabolic upset or brain tumour.

Specialists

Your GP may ask a specialist for help in establishing a diagnosis. The specialist may be an old-age psychiatrist, a physician in geriatric medicine, a neurologist or a general physician or psychiatrist. Who you see depends on the age of the person being examined, how physically able they are, and the services that are available in your area.

Tests

The person being tested will usually be given a blood test and a full physical examination to rule out or identify any other medical problems. The person's 'cognition' (a range of brain functions including memory, thinking and language skills) will be assessed with standard tests and may also be assessed in detail by a clinical psychologist.

A head scan may be carried out to give some clues about the changes taking place in the person's

brain. There are a number of different types of scan, including CT (computerised tomography), MRI (magnetic resonance imaging) and SPECT (single photon emission computed tomography).

Treatment

There is currently no cure for Alzheimer's disease. However, a number of drug treatments are available that can ameliorate some of the symptoms or hold back progression of the disease (on average, by 6-12 months) in some people.

People with Alzheimer's have been shown to have a shortage of the chemical acetylcholine in their brains. The drugs donepezil (Aricept®), rivastigmine (Exelon®) and galantamine (Reminyl®) work by boosting existing supplies of acetylcholine. These drugs are mainly helpful for people with mild or moderate Alzheimer's disease. Evidence is growing that they may be useful in other dementing illnesses as well. Side effects may include reduced appetite, nausea, indigestion, diarrhoea, fatigue, sleep disturbances, incontinence of urine and slowing of the heart rate. PHARMAC has funded Donepezil without restriction, which means that the drug is available by prescription from your doctor. Other drugs can cost as much as \$300 each month, so it is advisable to shop around.

Memantine (Ebixa®) is another drug available in New Zealand, which works in a different way to the other three – it prevents the excess entry of calcium ions into brain cells. Excess calcium in the brain cells damages them and prevents them from receiving messages from other brain cells. Memantine is promoted as having benefit in more advanced cases of Alzheimer's disease. Side effects may include hallucinations, confusion, dizziness, headaches and tiredness.

There is limited evidence for usefulness of ginkgo biloba extract and other herbal treatments, and for high dose vitamin E. Dietary and other lifestyle changes may also improve the course of Alzheimer's disease.

This information sheet was adapted from the Alzheimer's Society's Information Sheet *What is Alzheimer's disease?* UK: June 2003, by Alzheimers NZ National Office, Dr Chris Collins, Psychiatric Service for the Elderly, Christchurch, and Dr Phil Wood, Specialist Geriatrician, Auckland.

Alzheimers New Zealand has a range of information sheets and booklets available for people with dementia, their carers, families and whānau. Alzheimers member organisations located throughout New Zealand provide a variety of services and support to all people affected by dementia. Contact your local organisation on freephone 0800 004 001.

This information sheet provides a general summary only of the subject matter covered and is not a substitute for informed professional advice. Any person with dementia or their carer or family/whānau should seek professional advice about any individual case. Alzheimers New Zealand is not liable for any error or omission in this publication, as a result of negligence or otherwise. This information sheet was produced in March 2010.

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