



two risk factors that can not be changed. However, it may be possible to reduce many of the other known risks for the disease through lifestyle choices.

**Age** - Advancing age is the most significant risk factor for Alzheimer's disease. Most people who develop Alzheimer's disease are over the age of 65. However the disease process is thought to begin years before cognitive and memory impairments are apparent. It is important to remember that most people do not get Alzheimer's disease as they age. It is not a normal part of aging. Whatever other risk factors are present, Alzheimer's disease never sets in until some minimum adult age is reached.

**Genes** - The familial form of the disease (FAD), passed on directly from generation to generation, accounts for only about 7 per cent of the total incidence of Alzheimer's disease. While the common form of the disease (sporadic Alzheimer's disease) also has some genetic links much is still unknown. The majority of cases have no single identifiable cause. The role of genetics continues to be studied.

## Other risk factors include:

- Unhealthy eating habits
- Diabetes
- High blood pressure
- High cholesterol levels
- Strokes
- Obesity
- Stress
- Chronic inflammatory conditions
- History of clinical depression
- MCI (mild cognitive impairment)
- Low levels of physical activity
- Low socio-economic status
- Inadequate exercising of the brain
- Low levels of formal education
- Brain injury
- Smoking

## Living with Alzheimer's disease

The Alzheimer Society has developed a number of resources to help the person living with the disease and their caregivers including First Steps: For Those Recently Diagnosed With Alzheimer's Disease and the "I Have Alzheimer's Disease" section on our website ([www.alzheimer.ca](http://www.alzheimer.ca)).

Local Societies also have information and services such as support groups specifically designed for the person living with the disease and family members.

The Alzheimer Society advocates for people living with Alzheimer's and related diseases across Canada. The Society believes everyone living with these diseases should have access to treatments that enhance their quality of life.

The Alzheimer Society is a national not-for-profit health organization dedicated to helping people affected by Alzheimer's and related diseases. The Society has numerous resources and support programs for people with the disease and their caregivers. The Society also funds research into finding a cure for the disease, and into improved methods of caregiving.

For more information, contact your local Alzheimer Society or visit our website at [www.alzheimer.ca](http://www.alzheimer.ca)

*Help for today. Hope for tomorrow...*

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*Cover:* ECD SPECT scan on the top shows a brain with Alzheimer's disease and the SPECT scan on the bottom shows a healthy brain. ECD, SPECT scans were provided by Masanori Ichise, MD FRCPC (Mount Sinai Hospital Toronto/NIH Bethesda MD).

*Inside panel:* MRI images courtesy of Sunnybrook and Women's College Health Sciences Centre.

# Alzheimer Society

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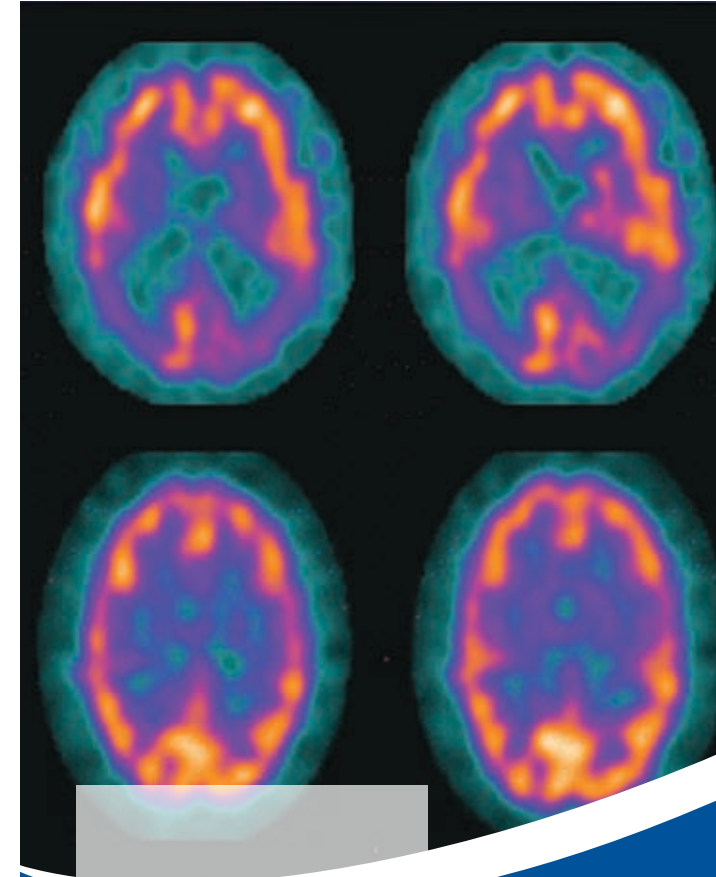
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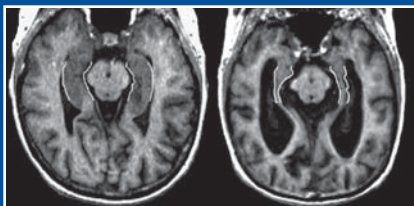
## Alzheimer's disease

# What is Alzheimer's disease?



## What we know about Alzheimer's disease

Alzheimer's disease is a progressive, degenerative disease of the brain, which causes thinking and memory to become seriously impaired. It is the most common form of dementia.<sup>1</sup>



The image above shows a person with Alzheimer's disease has less brain tissue (right) than the person who does not have the disease (left).

The disease was first identified by Dr. Alois Alzheimer in 1906. He described the two hallmarks of the disease: "plaques" - numerous tiny dense deposits scattered throughout the brain which become toxic to brain cells at excessive levels and "tangles" which interfere with vital processes eventually "choking" off the living cells. As well, when brain cells degenerate and die, the brain markedly shrinks in some regions.

As Alzheimer's disease progresses and affects different areas of the brain, various abilities become impaired. The result is changes in abilities and/or behaviour. At present, once an ability is lost, it is not known to return. However, research is now suggesting that some relearning may be possible.

### The effects of Alzheimer's disease

Alzheimer's disease eventually affects all aspects of a person's life: how he or she thinks, feels and acts. Since individuals are affected differently, it is difficult to predict the symptoms each person will have, the order in which they will appear, or the speed of the disease's progression.

<sup>1</sup> Dementia is a syndrome consisting of a number of symptoms that include loss of memory, judgment and reasoning, and changes in mood, behaviour and communication abilities. Related diseases include: Vascular Dementia, Frontotemporal Dementia, Creutzfeldt-Jakob Disease and Lewy body Dementia.

In general the following will gradually be affected by the disease:

**Mental abilities** - A person's ability to understand, think, remember and communicate will be affected. The ability to make decisions will be reduced. Simple tasks that have been performed for years will become more difficult or be forgotten. Confusion and memory loss, initially for recent events and eventually for long-term events, will occur. The ability to find the right words and follow a conversation will be affected.

**Emotions and moods** - A person may appear uninterested and apathetic, and may quickly lose interest in the hobbies they previously enjoyed. The ability to control mood and emotion may be lost. Some individuals are less expressive and are more withdrawn. However, it is now becoming clear that a person even in the later stages of the disease may continue to feel joy, anger, fear, love, and sadness.

**Behaviour** - Changes will develop in the way the person reacts to his or her environment. These actions may seem out of character for the person. Some common reactions include repeating the same action or words, hiding possessions, physical outbursts and restlessness.

**Physical abilities** - The disease can affect a person's physical co-ordination and mobility, leading to a gradual physical decline. This will affect the person's ability to independently perform day-to-day tasks such as eating, bathing and getting dressed.

### Research, treatment and strategies

There have been significant advances in treatments that can have an impact on an individual's day-

to-day life. Earlier diagnosis is improving the quality of life for many people who begin treatment in the early stages. Several medications may slow the decline of memory, language and thinking abilities in some people. Although these drugs do not work for everyone, they are a valuable step forward in the treatment of Alzheimer's disease. Promising results are emerging from clinical trials of new drugs and vaccines that attack the disease process and provide hope for continued advances in treatment.

New behavioural therapeutic strategies are also helping people living with the disease. Therapeutic techniques, like physical activity and music therapy, are being used as viable and useful treatments. Research shows that the quality of life of people with Alzheimer's disease, and also their caregivers, is significantly improved by activities that emphasize their strengths and abilities. By understanding the person's personality, life experiences, support systems and ways of coping, an approach to care can be created that preserves and improves quality of life.

### Risk factors for Alzheimer's disease

While the specific cause or the cure for Alzheimer's disease is not known, the disease appears to develop when the combined effects of certain risk factors reach a threshold level. Many of these risk factors are known but there are likely others that are yet to be identified. When the threshold level is reached, the brain's ability to repair and maintain itself is overwhelmed, and the disease process begins.

Risk factors increase the chances of getting Alzheimer's disease. Age and genetics are

