

Alzheimer's Disease and Down Syndrome

What is Down syndrome?

Down syndrome is a genetic disorder in which persons have three copies of the 21st chromosome instead of two. This extra chromosome can come from either parent. While the effects of Down syndrome vary from person to person, people with this syndrome often experience a delay in physical and intellectual development and a greater incidence of health complications than the average person.

The incidence of Down syndrome in Canada is approximately 1 in every 800 births.¹ The condition is not related to gender, race, nationality or socio-economic status. The exact cause of Down syndrome is not known.

The chance of Down syndrome increases with maternal age; however, since younger women are more likely to have children than older women, it is important to remember that 80% of children with Down syndrome are born to women younger than 35 years of age.

Common characteristics of the syndrome include:

- low muscle tone
- low nasal bridge and small nose
- eye openings which slant downwards and inwards
- smaller than normal stature
- the delay of both physical and intellectual development.

How is Down syndrome associated with Alzheimer's disease?


Advances in medical care have resulted in longer life expectancy for people with Down syndrome. Many adults with Down syndrome now live well into their 50s and 60s. However, almost all people with Down syndrome who live into their 40s will develop Alzheimer's disease.

Things to consider when making a diagnosis of Alzheimer's disease in a person with Down syndrome:

Making a diagnosis of Alzheimer's disease can be more difficult when an individual has Down syndrome for the following reasons:

1. Individuals with Down syndrome may have a wide range of health problems associated with aging and these may mimic or mask the presence of Alzheimer's disease.
2. The existing assessment scales for Alzheimer's disease may not be sensitive to the changes in abilities of people with Down syndrome.
3. People with Down syndrome have more limitations in motor, language, communication and intellectual abilities than the average person. As a result, it is often difficult to detect subtle changes in these areas of functioning that are related to the symptoms of Alzheimer's disease rather than Down syndrome.

1. Canadian Down Syndrome Society



When individuals have Down syndrome, physicians often find it helpful to rely on caregivers for details of the individual's medical and psychosocial history. Keeping track of changes in the person's abilities can be done by keeping a personal journal. These notes can assist in separating pre-existing symptoms from those resulting from Alzheimer's disease. Caregivers can also report on an individual's changes in social functioning and engagement with others.

Providing care:

All people with Alzheimer's disease deserve to be treated with dignity and respect. No matter how the disease affects the person, emotions and feelings remain. When an individual has Down syndrome, there are some special considerations that may help in providing care:

1. As with anyone who cares for someone with Alzheimer's disease, it is essential that all caregivers are educated to understand the disease and its unique effects on the individual.
2. Caregivers of a person with Down syndrome may have been providing care for many years and may benefit from additional support as the individual's needs change. This can be especially true if a move to a long-term care facility is being considered.
3. Caregivers of people with Down syndrome may find it helpful to learn to adapt the strategies they have been using and to learn new ways of building on the individual's remaining strengths and abilities.