

HIV associated dementia

This help sheet describes HIV associated dementia and related conditions, including causes, symptoms, diagnosis and treatment.

About HIV associated dementia

HIV (human immunodeficiency virus) is a virus that attacks the body's immune system.

HIV can infect brain cells, causing cognitive impairment (changes to thinking, body movement and behaviour). The changes can be mild. However, in some people the changes are severe enough to impact day-to-day functioning, independence and quality of life.

People living with HIV may develop:

- HIV associated neurocognitive disorder (HAND)
- HIV associated dementia (HAD), which is the most severe form of HAND.

HIV associated neurocognitive disorder affects cognitive functions (thinking skills such as memory, language, attention and planning), but not to the extent that a diagnosis of dementia is made.

HIV associated dementia affects cognitive functions severely. Motor difficulties and changes in behaviour impair day-to-day functioning, reducing independence and quality of life, to the extent that a dementia diagnosis is made.

HIV associated dementia is uncommon in Australia, because most people living with HIV receive treatment with combination antiretroviral therapy (anti-HIV medication).

Mild forms of HIV associated neurocognitive disorder is common in many people living with HIV.

Cause

HIV is a virus that is transported into the brain. It infects brain cells. Nerve cells that control our body, thoughts and actions are indirectly damaged, mainly through toxicity and inflammation that occur due to the infection in other cells. Connections between nerve cells are also damaged, resulting in impaired communication in the brain and impaired cognitive function. Damage occurs mainly and progressively in the deeper (subcortical) parts of the brain.

HIV seems to accelerate the ageing process. Research suggests that cognitive performance in people with HIV is, on average, equivalent to that of people 10 years older who do not have HIV. Additionally, HIV may facilitate the development of degenerative brain diseases associated with ageing, including Alzheimer's disease and Parkinson's disease. Levels of the proteins that build up in the brain in these diseases are increased in people who are living with HIV. It is not yet known why HIV does this, but these effects may contribute to the development of HIV associated neurocognitive disorder.

Signs and symptoms

Symptoms vary from person to person and can fluctuate from time to time, including:

- the time it takes to process information
- short-term and long-term memory
- being able to learn new skills and solve problems
- attention and concentration
- logic and reasoning abilities
- being able to understand and express language
- spatial skills and coordination
- planning and organising abilities.

Signs that someone may be affected can include:

- difficulty following medical advice and taking medications
- declining performance at work
- difficulties with managing finances or organising meals
- impaired driving.

Symptoms of cognitive impairment can leave the person confused, frustrated, anxious or depressed. Behaviour and personality changes can occur, especially in HIV associated dementia. Apathy, vision problems and movement disorders are also common features.

Seeking a diagnosis

It is essential to seek the advice of a doctor when symptoms first appear. A medical specialist, usually a neurologist, will lead the diagnostic process.

An early diagnosis is important as the symptoms can be caused by other conditions and illnesses common to people with HIV, many of which may be treatable. If an early diagnosis of HIV associated neurocognitive disorder or HIV associated dementia is made, appropriate treatment and management can be started.

A medical specialist may begin by looking into other possible causes of the symptoms.

These may include:

- depression
- infection
- substance abuse
- other forms of dementia, such as Alzheimer's disease and vascular dementia.

Making a diagnosis might include:

- a full medical history
- a neurological assessment
- neuropsychological testing to determine the presence and severity of cognitive impairment
- testing of mental ability
- testing using the HIV dementia scale to assess cognitive symptoms
- information about the person's symptoms taken from both the person and those close to them, such as family, friends or carers
- laboratory tests of blood or cerebrospinal fluid
- brain scans, such as MRI.

No single test can definitively diagnose HIV associated neurocognitive disorder or HIV associated dementia. Instead, the doctor will make an assessment based on all available test results.

Treatment options

HIV associated neurocognitive disorder is treated using combination highly active antiretroviral therapy. Not all antiretroviral drugs penetrate the brain and some stay in the brain more than others, so the right combination of drugs is important for the most effective treatment.

For many people, treatment is effective in reducing cognitive symptoms. More than 50 per cent of people with HIV associated dementia experience significant recovery when treated with combination antiretroviral therapy.

Other drugs that protect the brain from further damage or enhance cognitive function might also help some people. Research is continuing into which therapies may be most helpful. Drugs such as antidepressants may be needed to treat secondary symptoms, such as depression and anxiety.

Non-drug therapies such as counselling and learning strategies to compensate for reduced cognitive abilities can also be useful.

Looking after your health is important. Treating conditions like diabetes, high cholesterol or high blood pressure can have an impact on cognitive function. Regular exercise and a healthy diet can also improve brain health.

Who gets HIV associated neurocognitive disorder?

All people who have HIV are at risk. Other risk factors for people living with HIV include:

- diabetes
- other infections or poor health
- being older when HIV is contracted
- severely lowered immune cells (T-cells)
- a higher degree of immunodeficiency caused by HIV
- inadequate brain levels of antiretroviral drugs.

Regular screening for changes in cognitive abilities is recommended for people living with HIV. In Australia:

- HIV associated neurocognitive disorder may affect more than 30 per cent of people with HIV.
- HIV associated dementia can affect an estimated 2 to 8 per cent of people with HIV.

Additional reading and resources

- Dementia Australia library service
Visit: [**dementia.org.au/library**](https://dementia.org.au/library)
- Dementia Australia support
Visit: [**dementia.org.au/support**](https://dementia.org.au/support)
- Dementia Australia education
Visit: [**dementia.org.au/education**](https://dementia.org.au/education)
- Australian Federation of AIDS Organisations
Visit: [**afao.org.au**](https://afao.org.au)

Further information

Dementia Australia offers support, information, education and counselling.

National Dementia Helpline: 1800 100 500

For language assistance: 131 450

Visit our website: [dementia.org.au**](https://dementia.org.au)**