

*Assessment For Dementia

The very first step you should take if you are noticing cognitive changes in your loved one is to- Speak to your primary care doctor.

The doctor usually spends some time discussing your medical history and gathering information about your changes in memory and thinking.

Physical examination and laboratory tests

The symptoms of dementia can be due to several other potential causes, such as vitamin deficiency, infection, metabolic disorders, and side effects from drugs, which are often easily treated. Therefore, an early step in diagnosing dementia is to rule out these causes through a physical examination, blood tests and urine tests.

Routine laboratory tests used in the diagnosis of dementia include

Blood and/or Urine tests to investigate:

- *Anaemia*
- *Infection*
- *Electrolyte balance (salt and water)*
- *Liver function*
- *Vitamin B12 deficiency*
- *Thyroid function*
- *Drug interactions and dosing problems*
- *Urine tests to investigate infection*

Mental status evaluation including cognitive testing

Most doctors use short cognitive screening tests comprising a series of questions (either verbal, or on paper) when assessing these abilities. If more detailed testing is required, you may be referred to a neuropsychologist – a psychologist specializing in the assessment and measurement of cognitive function.

Tests used in diagnosing dementia

These tests are vital in the diagnosis of dementia and are often used to differentiate between types of dementia. They can also be used to assess mood and may help diagnose depression, which can cause symptoms like those of dementia.

Neuropsychological testing is also commonly used to monitor the progression of Alzheimer's disease and other causes of dementia.

Special arrangements can be made for testing people who do not speak English or who have communication difficulties. Your doctor can give you advice about this.

Some of the commonly used cognitive tests include:

Mini-Mental State Examination (MMSE)

This test is usually conducted by your doctor or specialist in his/her office and takes around 5 minutes to complete. The MMSE is the most common neuropsychological test for the screening of Alzheimer's disease and other causes of dementia. It assesses skills such as reading, writing, orientation, and short-term memory.

You can expect to be asked a series of questions about where you are and what day it is. You will also be asked to complete short mental tests such as subtracting numbers, spelling a word backwards, remembering three unconnected words and copying a diagram on paper.

Neurologist Testing

Alzheimer's Disease Assessment Scale – Cognitive (ADAS-Cog)

This 11-part test is more thorough than the MMSE and can be used for people with mild symptoms. It is considered the best brief examination for memory and language skills and is often used as a measure in clinical drug trials. It takes around 30 minutes and is usually conducted by a specialist in their office, or you may be referred to a psychologist for the test.

Neuropsychological testing

This involves several extremely sensitive psychometric assessments that will be administered by a neuropsychologist (a psychologist who has been trained in the assessment of dementia and other disorders of higher mental function). A typical testing session takes a few hours and may be conducted over more than one visit.

A variety of tests will be used, and these will be selected according to the educational level and mental ability of the person being tested. They may include tests of memory such as recall of a paragraph, tests of the ability to copy drawings or figures and tests of reasoning and comprehension.

Radiological tests

Standard X-rays may be taken and those who smoke will commonly require a chest X-ray to rule out lung cancer, which may be causing a secondary brain tumor.

Brain scans

Various brain-scanning techniques are sometimes used to show brain changes and to rule out other conditions such as tumors, infarcts (strokes – dead areas of brain tissue) and hydrocephalus (fluid on the brain).

These scanning techniques include:

Structural brain imaging

Structural brain imaging provides information about the shape, position, or volume of brain tissue. Techniques include computerized tomography (CT) and magnetic resonance imaging (MRI). CT involves taking many X-rays from different angles in a short period. These images are then used to create a three-dimensional image of the brain. This technique is used to rule out other causes of dementia, such as stroke, brain tumors, multiple sclerosis, or hemorrhage. MRI provides much better resolution than CT to see the brain structure in more detail. MRI uses powerful magnets and radio waves to produce clear three-dimensional images of the brain. Currently MRI is the radiological test of choice. As well as ruling out treatable causes of dementia, MRI can reveal patterns of brain tissue loss, which are characteristic of dementia and can be used to discriminate between different forms of dementia such as Alzheimer's disease and frontotemporal dementia.

Imaging Tests used in diagnosing dementia

Functional brain imaging

Functional brain imaging reveals how well cells in various brain regions are working by showing how actively the cells use sugar or oxygen. Functional techniques include positron emission tomography (PET) and functional MRI (fMRI). The technique currently most used in dementia diagnosis is fluorodeoxyglucose (FDG)-PET, which measures the use of glucose by the brain.

Molecular brain imaging

Molecular brain imaging uses highly targeted radiotracers to detect cellular or chemical changes linked to specific diseases. Molecular imaging technologies include PET and single photon emission computerized tomography (SPECT). In both of these tests, a small amount of radioactive material is injected into the patient and detectors are placed on the brain to detect emissions. PET provides visual images of activity in the brain. SPECT is used to measure blood flow to various regions of the brain. In many areas these techniques are usually only used in research.

Cerebrospinal fluid proteins

Cerebrospinal fluid (CSF) is a clear fluid that bathes and cushions the brain and spinal cord. The CSF can be sampled through a procedure called a lumbar puncture, or spinal tap. This procedure involves taking a sample of the cerebrospinal fluid via a needle inserted into the lower part of the back – a short and painless surgical procedure. This fluid can be used to check certain proteins in the brain that are associated with dementia. Like molecular brain imaging, this procedure is mostly used in research in many areas at the present time.

Some questions you may wish to ask your doctor regarding tests used in diagnosing dementia

- What tests will be conducted?
- Who will be performing the tests and how long will they take? • Should I prepare for the tests in any way?
- Will any of the tests involve pain or discomfort?
- Will there be any cost involved?
- What follow-up will be necessary and who will follow up?
- How will I be informed of the test results and the diagnosis?

If you are diagnosed with dementia

Obtaining an early and accurate diagnosis can improve the quality of life for people with dementia. Talk to your doctor about treatment and ongoing assessment. Support and information are available.

****All dementia patients are not the same. It is always best to work with their specific medical professional team to determine what is best for them and you as a loved one or caregiver. These suggestions do not replace the suggestions of a medical professional.***