

## How is Alzheimer's Disease Diagnosed?

There is no one clinical test that can determine whether a person has Alzheimer's disease. Usually several tests are performed to rule out any other cause of dementia. The only definitive method of diagnosis is examination of brain tissue obtained from a biopsy or autopsy. However, if the current accepted criteria established by the NINCDS-ADRDA Work Group (National Institute of Neurological and Communicative Disorders and the Alzheimer's Disease and Related Disorders Association) is used, diagnosis before death is considered about 90% accurate. A comprehensive diagnostic evaluation would include:

**A detailed medical and social history:** Because of the wide range of possible causes of dementia, a detailed history is exceptionally important. It may be obtained from the patient (if possible), from the best-informed relative or acquaintance available, and/or from past medical records. Also a careful history of events that have affected the patient's emotional status is important to have. Special attention should be paid as to whether onset of symptoms was gradual or sudden.

**A medication inventory:** A complete inventory of prescription and over-the-counter drugs is necessary. Drugs and the interaction of drugs may cause dementia. A urine screen may be indicated to determine the presence of some drugs.

**A history of substance abuse or misuse:** The most accurate record possible should be obtained of the patient's history and present use of drugs and/or alcohol. Drug or alcohol abuse/intoxication can be the cause of demented behavior or may complicate the problems of other types of dementia.

**A complete physical examination:** This should be thorough since disease in many organ systems may cause dementia or delirium. Special emphasis and attention should be given to the neurological examination.

**A mental status examination:** This includes an evaluation of level of consciousness, attention, orientation, short-term memory, long-term memory, language ability (including naming, repeating, understanding, reading, writing); ability to draw or copy; calculating ability; manipulation of knowledge, as in proverb interpretation or identifying similarities between words; affect; stream and content of thought and judgment.

**Laboratory tests and screenings:** Included should be: complete blood cell count; electrolyte panel; screening metabolic panel; thyroid gland function tests; vitamin B-12 folate levels; tests for syphilis and, depending on history, for human immunodeficiency antibodies; urinalysis; electrocardiogram (ECG); chest X-ray; computerized tomography (CT) scan of the head; and an electroencephalogram (EEG). A lumbar puncture may also be indicated.

**Psychiatric assessment:** Psychiatric evaluation may be indicated especially if there is a significant history of depression or other psychiatric illnesses. Depression may be so severe that it produces a true cognitive deficit that is reversible with successful treatment. Depression commonly is present with other causes of dementia, especially Alzheimer's disease.