Guide to Understanding Dementia

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Dementia refers to a significant intellectual decline that persists over time and affects several areas of cognition (thinking). Dementia often is not diagnosed until months or even years after its onset. Memory loss is a universal feature of dementia, but other functions are impaired as well, such as abstract thinking and language.

Approximately 1 percent of dementia cases are reversible. In these instances, people may have a physical or psychological condition (such as an operable brain tumor, vitamin B12 deficiency, thyroid disease, alcoholism or depression) that can be cured with treatment. The most common cause of reversible dementia is a toxic reaction to prescription or over-the-counter medications.

**Diagnosing Dementia**

Differentiating between irreversible dementia and dementia that results from a medical condition involves a process of systematic elimination. Doctors often start by looking for conditions that are most readily correctable. If these possibilities can be eliminated, then more serious, irreversible dementias—such as Alzheimer’s disease—are considered. The presence of reversible disorders can complicate the diagnosis of irreversible forms of dementia. In these instances, diagnosing and treating the concurrent condition can provide a clearer view of any problems that persist.

The first step in diagnosis is a thorough medical history and physical examination to identify any vision, hearing, cardiovascular, thyroid or other disorders. Although checking for these conditions might seem unnecessary, they often go unrecognized in older adults and can have a significant effect on memory.

Mental status tests, such as the Mini-Mental State Examination, the Short Test of Mental Status, or the Cognitive Capacity Screening Examination, are given to check for any general cognitive impairment. The Clock Drawing Test and the Time and Change Test are two other simple tests for dementia (see page 5). All of these tests take just five to 15 minutes to complete and can serve as a baseline for comparison should further testing be necessary.

The medical history should include an interview with a family member or close friend. This type of interview can be crucial because someone close to the patient knows the individual’s previous level of functioning and can help the physician determine whether cognitive deterioration has occurred.

The American Academy of Neurology recommends the following tests in the routine evaluation of a patient with suspected dementia:

- complete blood cell count
- electrolyte levels in the blood (potassium, sodium and chloride)
- blood levels of glucose (sugar), urea nitrogen and creatinine
- blood levels of vitamin B12
- liver function tests and thyroid function tests
- depression screening
Occasional memory lapses, such as forgetting why you walked into a room or having difficulty recalling a person’s name, become more common as we approach our 50s and 60s. It’s comforting to know that this minor forgetfulness is a normal sign of aging, not a sign of dementia.

But other types of memory loss, such as forgetting appointments or becoming momentarily disoriented in a familiar place, may indicate mild cognitive impairment. In the most serious form of memory impairment—dementia—people often find themselves disoriented in time and place and unable to name common objects or recognize once-familiar people.

The chart below gives examples of the types of memory problems that are common in normal age-related forgetfulness, mild cognitive impairment and dementia.

<table>
<thead>
<tr>
<th>Normal Age-Related Forgetfulness</th>
<th>Mild Cognitive Impairment</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sometimes misplaces keys, eyeglasses or other items.</td>
<td>Frequently misplaces items.</td>
<td>Forgets what an item is used for or puts it in an inappropriate place.</td>
</tr>
<tr>
<td>Momentarily forgets an acquaintance’s name.</td>
<td>Frequently forgets people’s names and is slow to recall them.</td>
<td>May not remember knowing a person.</td>
</tr>
<tr>
<td>Occasionally has to “search” for a word.</td>
<td>Has more difficulty using the right words.</td>
<td>Begins to lose language skills. May withdraw from social interaction.</td>
</tr>
<tr>
<td>Occasionally forgets to run an errand.</td>
<td>Begins to forget important events and appointments.</td>
<td>Loses sense of time. Doesn’t know what day it is.</td>
</tr>
<tr>
<td>May forget an event from the distant past.</td>
<td>May forget more recent events or newly learned information.</td>
<td>Has serious impairment of short-term memory. Has difficulty learning and remembering new information.</td>
</tr>
<tr>
<td>When driving, may momentarily forget where to turn; quickly orients self.</td>
<td>May temporarily become lost more often. May have trouble understanding and following a map.</td>
<td>Becomes easily disoriented or lost in familiar places, sometimes for hours.</td>
</tr>
<tr>
<td>Jokes about memory loss.</td>
<td>Worries about memory loss. Family and friends notice the lapses.</td>
<td>May have little or no awareness of cognitive problems.</td>
</tr>
</tbody>
</table>
A fter eliminating other causes of memory loss, a physician will consider irreversible dementias as possible diagnoses. These include not only Alzheimer’s disease, but also vascular dementia, dementia with Lewy bodies, frontotemporal dementia (Pick’s disease, for example), Parkinson’s disease and Huntington’s disease. Other possible causes include infectious diseases (such as Creutzfeldt-Jakob disease) and amnesia.

**Vascular Dementia**
After Alzheimer’s disease, the most common cause of significant memory loss is vascular dementia—a disorder often resulting from a series of tiny strokes (known as infarcts) that destroy brain cells. Each small infarct may be inconsequential alone, but the cumulative effect of many infarcts can destroy enough brain tissue to impair memory, language and other intellectual abilities.

Symptoms of vascular dementia often develop suddenly, and they are not limited to brain functions. Noncognitive hallmarks include loss of bladder or bowel control (incontinence), a masklike facial expression, and weakness or paralysis on one side of the body. Vascular problems account for 10 to 20 percent of all dementia cases.

**Dementia with Lewy Bodies**
Dementia with Lewy bodies accounts for 5 to 15 percent of dementia cases. This form of dementia shares characteristics and symptoms of both Alzheimer’s and Parkinson’s disease. The disorder is named for the Lewy bodies—tiny deposits of a protein called alpha-synuclein—that are found throughout the brain. People with this form of dementia tend to have attention problems, hallucinations and some of the motor problems associated with Parkinson’s disease (such as shuffling gait, poor balance and stooped posture). Sleep problems (excessive daytime drowsiness, very vivid dreams, and leg kicks or arm swings while asleep) are common and may start years before any memory symptoms are noticed.

**Frontotemporal Dementia**
Frontotemporal dementia is much less common and well known than Alzheimer’s disease, accounting for 5 percent of dementia cases. It affects the front (frontal lobes) and side (temporal lobes) of the brain. It affects men and women equally, usually starting between ages 40 and 65, and progresses more rapidly than Alzheimer’s. Frontotemporal dementia has several forms and causes, but personality changes or problems with language are usually the earliest symptoms. About one-third of cases have an identifiable genetic cause. A person with the frontal or behavioral type of dementia may exhibit bizarre or out-of-character behavior, including reckless spending, gambling, shoplifting, making inappropriate comments or engaging in repetitive behaviors. People with the temporal lobe form have problems expressing or understanding spoken language.
Pick’s disease is responsible for approximately one-third of frontotemporal dementia cases. Symptoms include personality changes, inability to make plans and set goals, unawareness of any loss of mental function, and language difficulties (aphasia). Palilalia—compulsive repetition of a word or phrase with increasing rapidity—sometimes occurs later in the illness. The course of Pick’s disease can vary from two to 10 years, but it is ultimately fatal.

Recent studies suggest that five other neurological diseases associated with dementia may involve abnormalities similar to those of frontotemporal dementia. These include corticobasal ganglionic degeneration, hippocampal sclerosis, motor neuron disease inclusion dementia, primary progressive aphasia and progressive supranuclear palsy.

**Huntington’s Disease**
Huntington’s disease is a rare hereditary disorder of the central nervous system characterized by uncontrollable movement and dementia.

(In the past, the disease was called Huntington’s chorea, from the Greek word meaning “dance.”) The illness begins gradually, usually between the ages of 30 and 40, and people can live with the disease for up to 20 years. Early signs of Huntington’s disease include changes in behavior and unusual, fidgety movements. Symptoms may be mild enough for the disease to go unnoticed for several years. Eventually, however, twisting and jerking movements that spread to the entire body are followed by memory loss, confusion and hallucinations.

**Creutzfeldt-Jakob Disease**
Creutzfeldt-Jakob disease (CJD) is a rare, fatal brain disorder that causes rapidly progressing dementia. The disease affects about one in one million people worldwide each year, including 250 to 300 Americans. CJD can be transmitted through infected tissue (usually through organ or tissue transplantation), can be inherited or can occur with no known explanation. CJD typically strikes people over age 60 and leads to death in about a year.
New developments in brain imaging represent major advances in Alzheimer’s research and diagnosis. But some low-tech screening tests may offer quick, inexpensive snapshots of a person’s cognitive health. Whether they are accurate enough to be used widely for screening is debated, but they may be useful on an individual basis.

Clock Drawing Test
This is one of the best-known dementia screening tests. Patients are asked to draw a clock with the hands pointing to a specified time—for example, 2:45. The most complete, well-organized, accurate and spatially correct drawing is rated a “10,” and the least representative is rated a “1” (see the examples below). The more distorted and inaccurate the drawings are, the more likely the person has dementia. Some research has suggested that the clock drawing test fails to account for important factors like educational level and is of limited value.

Time and Change Test
This measures the ability to tell time and perform a simple math task. The patient is given 60 seconds to read the time on an analog clock with two attempts to get it right. Then, the person is given three quarters, seven dimes, and seven nickels and asked to count out a dollar’s
worth of change within three minutes, with two attempts allowed.

**Sniff Test**
Researchers have known for some time that loss of smell is an early warning sign of Alzheimer's. The beta-amyloid plaques that ultimately destroy memory and other cognitive abilities accumulate first in areas of the brain that are responsible for odor perception. In a paper that was presented at an American College of Neuropsychopharmacology meeting, people with mild cognitive impairment were given a 10-item sniff test. The odors were lemon, strawberry, pineapple, lilac, clove, menthol, smoke, natural gas, soap and leather. Participants who misidentified more than two odors were five times more likely to progress to Alzheimer’s than were those who performed better on the test.

**More Quick Tests**
If dementia is suspected, doctors may administer several tests that examine specific cognitive abilities. To test language, the patient will be asked to name as many items as possible in a category, such as fruits or animals. Naming fewer than 10 items in one minute suggests slowed mental functioning. Counting backward by sevens, spelling a word backward and forward, and listing the months of the year backward are tests of working memory and attention. To test reasoning and planning ability, the doctor may ask the patient to describe similarities and differences between two items, such as an apple and an orange.

Listening to a list of words and reciting them back is a common memory test. A person without memory problems should be able to remember at least three words. Often, the person will be given a distracting task to complete before recalling the words. Someone who can’t remember at least two words out of three may have cognitive impairment.

**Bottom Line**
Keep in mind that these are screenings but not diagnostic tests and should be given and interpreted by a healthcare professional. They often don’t detect problems in well-educated people and overdiagnose problems in those with little formal education. Poor results indicate probable cognitive impairment, but more sophisticated testing is necessary to make a diagnosis of Alzheimer’s disease.
The information contained in this Special Health Guide is not intended as a substitute for the advice of a physician. Readers who suspect they may have specific medical problems should consult a physician about any suggestions made.

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