

Understanding Tests for Dementia

A Guide for Patients, Families & Caregivers

There is no single test that diagnoses every type of dementia. Clinicians combine a history of changes in daily life, examination, thinking tests, laboratory work, and sometimes brain imaging or specialized biomarkers. A diagnosis also requires distinguishing gradual cognitive decline from delirium, depression, medication effects, and other treatable conditions.

What happens during an initial evaluation?

- Discuss when symptoms began, how they changed, and whether memory, language, behavior, movement, or daily independence is affected. A family member's observations can be very helpful.
- Review prescription and over-the-counter medicines, alcohol use, sleep, hearing, vision, mood, and medical conditions.
- Perform a neurological examination and brief cognitive screening; consider formal neuropsychological testing when the picture is unclear.
- Order selected blood tests and usually structural brain imaging when clinically appropriate. Specialized tests are chosen to answer specific questions—not automatically for everyone.

Common thinking and memory tests

Test	What it measures	Important limitations
MoCA (Montreal Cognitive Assessment)	About 10–15 minutes; memory, attention, executive function, language, visuospatial skills. Often sensitive to mild cognitive impairment.	Education, language, sensory problems, and other factors affect scores; not diagnostic by itself.
MMSE (Mini-Mental State Examination)	Orientation, recall, attention, language, basic drawing.	May miss early executive dysfunction; licensing requirements apply.
Mini-Cog	Three-word recall and clock drawing; very brief screening.	A screen, not a full diagnostic evaluation.
SLUMS / other screens	Brief assessment of several cognitive domains.	Interpret with education and clinical context.
Neuropsychological evaluation	More detailed testing of memory, executive skills, language, and visuospatial function.	Takes longer; performance can be affected by mood, fatigue, and sensory impairment.

What can blood tests reveal?

- Common initial tests include complete blood count (CBC), metabolic panel (electrolytes, kidney/liver function, calcium), thyroid function (TSH), and vitamin B12; clinicians tailor testing to symptoms and history.
- Additional tests may include folate, HbA1c, HIV, syphilis testing, inflammatory/autoimmune studies, or other evaluations when indicated—not necessarily for every patient.
- Newer blood biomarkers (such as phosphorylated tau, including p-tau217, and amyloid-related measures) can help identify Alzheimer's pathology in appropriate specialist settings. Their accuracy depends on the assay and patient population; they do not replace clinical assessment.

Brain imaging: MRI and CT

Test	What it can show	What it cannot do alone
MRI brain	Stroke damage, white-matter disease, tumors, hydrocephalus, microbleeds; patterns of regional brain atrophy.	Atrophy patterns suggest but do not prove a specific dementia. A normal MRI does not exclude early Alzheimer's disease.
CT brain	Bleeding, large strokes, masses, hydrocephalus, major atrophy; useful when MRI is unavailable or contraindicated.	Less sensitive than MRI for subtle small-vessel disease, microbleeds, and regional atrophy.
FDG-PET	Patterns of brain glucose use; may help distinguish Alzheimer's, frontotemporal degeneration, and Lewy body disease in uncertain cases.	Not a stand-alone diagnosis; patterns overlap.
Amyloid PET	Detects amyloid plaque burden; helps assess whether Alzheimer's pathology is present.	A positive scan does not by itself establish that Alzheimer's causes all symptoms or indicate dementia severity.
Tau PET	Shows distribution of certain tau pathology; may support Alzheimer's assessment in selected settings.	Availability, coverage, and clinical indications vary.
DaTscan (dopamine transporter SPECT)	Assesses dopamine transporter activity; reduced uptake can support a Lewy body/parkinsonian disorder.	Does not reliably distinguish Parkinson's disease from dementia with Lewy bodies, and cannot diagnose Alzheimer's disease.

Spinal fluid (CSF) tests

- A lumbar puncture collects a small amount of cerebrospinal fluid. Alzheimer's biomarkers commonly include amyloid-beta 42 (often as an A β 42/A β 40 ratio), total tau, and phosphorylated tau.
- These tests can provide evidence of Alzheimer's biological changes, especially when the diagnosis is uncertain or disease-modifying treatment is being considered.
- CSF may also be tested for infection, inflammation, or rapidly progressive conditions when symptoms warrant it.
- Possible effects of lumbar puncture include temporary headache or back discomfort; bleeding and infection are uncommon. The clinical team reviews blood thinners and procedural risks.

Other tests selected for particular symptoms

- Sleep testing may help evaluate obstructive sleep apnea or REM sleep behavior disorder, which is associated with Lewy body disorders.
- EEG may be useful for suspected seizures, encephalopathy, or rapidly changing symptoms; it is not a routine dementia subtype test.
- Large-volume lumbar puncture or CSF drainage may help evaluate possible normal-pressure hydrocephalus in the right clinical setting.

How testing differs by dementia type

Condition	Typical clinical clues	Tests that may be particularly helpful
Alzheimer's disease	Progressive difficulty learning and remembering new information; sometimes language or visual variants.	MoCA/neuropsychology; MRI may show medial temporal atrophy; amyloid/tau biomarkers in blood, CSF, or PET may support pathology.
Vascular cognitive impairment / dementia	Slowed thinking, impaired planning, gait problems; stroke history or vascular risks; course may be gradual or stepwise.	MRI for infarcts, white-matter injury, microbleeds; CT when needed; vascular-risk evaluation.
Dementia with Lewy bodies (DLB)	Fluctuating alertness, recurrent well-formed visual hallucinations, parkinsonism, REM sleep behavior disorder.	Clinical criteria; DaTscan may support diagnosis; FDG-PET may show occipital changes; sleep study if indicated.
Parkinson's disease dementia	Established Parkinson's disease preceding dementia; executive/visuospatial difficulties, hallucinations.	Clinical history and examination are central; MRI to assess other causes; DaTscan rarely needed when PD already established.
Frontotemporal dementia (FTD)	Early changes in behavior, judgment, personality, or language; memory may be relatively preserved initially.	Detailed neuropsychology, MRI frontal/anterior temporal atrophy, FDG-PET when uncertain; genetic counseling in selected families.
Normal-pressure hydrocephalus (NPH)	Gait impairment, urinary symptoms, and cognitive changes (not everyone has all three).	MRI/CT for ventriculomegaly and pattern; specialist gait assessment and CSF drainage testing.
Rapidly progressive cognitive decline	Changes over weeks to months, seizures, movement abnormalities, or major fluctuations.	Urgent specialist workup: MRI, EEG, CSF, targeted infectious/autoimmune/prion tests as indicated.

Important interpretation points

- A positive amyloid biomarker can coexist with vascular disease, Lewy body pathology, or other conditions—mixed dementia is common, especially in later life.
- DaTscan helps identify a dopamine-system abnormality, not a unique disease; some medications can interfere with results.
- Structural MRI patterns and FDG-PET findings are clues, not definitive proof of a single diagnosis.
- A sudden decline over hours or days should prompt evaluation for delirium, infection, medication toxicity, metabolic disturbance, or stroke rather than being attributed automatically to dementia.

When are advanced Alzheimer's tests considered?

- When the cause of cognitive symptoms remains uncertain after standard assessment.
- When evaluating eligibility for anti-amyloid treatment (such as lecanemab or donanemab), which requires confirmation of amyloid pathology and separate safety screening.
- When test results would meaningfully change diagnosis, treatment decisions, prognosis, or care planning.
- A clinician should explain what a positive, negative, or indeterminate result means—and what it does not mean—before testing.

Questions to ask the healthcare team

- What is the most likely cause of these symptoms, and what other causes are being considered?
- What does the MoCA or other screening score tell us? Should we repeat testing or obtain neuropsychological testing?
- What blood tests and MRI or CT findings are important in this case?
- Would PET, DaTscan, CSF testing, or an Alzheimer's blood biomarker change treatment or planning?
- Could medications, depression, hearing loss, sleep problems, or delirium be contributing?
- What follow-up is needed, and what changes should prompt urgent medical attention?

Preparing for an evaluation

- Bring a complete medication and supplement list, including recent medication changes.
- Write down a timeline of changes and examples involving finances, driving, medications, conversations, behavior, or safety.
- Bring prior brain scans, laboratory reports, and relevant medical records if available.
- Ask a trusted family member or caregiver to attend, with the patient's permission.

Trusted educational resources

- National Institute on Aging — nia.nih.gov/health/alzheimers-and-dementia.
- Alzheimer's Association — alz.org | 800-272-3900.
- National Institute of Neurological Disorders and Stroke — ninds.nih.gov.
- RadiologyInfo (ACR/RSNA) — radiologyinfo.org (MRI, CT, PET and nuclear medicine explanations).
- MedlinePlus — medlineplus.gov/dementia.html.
- For New Hampshire support, contact NH Aging and Disability Resource Centers (ADRC/ServiceLink) through the NH Department of Health and Human Services.

Key message

The most accurate dementia diagnosis usually comes from combining the person's story, examination, cognitive testing, and appropriately chosen investigations. More testing is not always better: the right test is one that answers a specific clinical question and helps guide care.

Educational information only. This guide is not a diagnostic tool or a substitute for personalized medical advice. Test availability, clinical indications, and insurance coverage vary.