Moderate to advanced stages of AD: Patients may present with irritability and agitation, hallucinations, and paranoid delusions.

This may appear before the more obvious memory or language defects announce themselves. The patient becomes convinced that relatives are stealing his possessions or that an elderly and even infirm spouse is guilty of infidelity. He may hide his belongings, even relatively worthless ones, and go about spying on family members.

Apathy: It presents with loss of interest in previously enjoyed activities (e.g., hobbies, social outings, spending time with beloved relatives), aloofness, diminished spontaneity and emotional behavior, and reduced motivation. It is thought to reflect disruption of the connections within the frontosubcortical–anterior cingulate circuitry and their connections with other cortical regions.

Depression: The symptoms are rarely severe enough to merit diagnosis of major depressive disorder; more often they represent minor depression/dysphoria. Risk factors for developing depression are familial or personal history of depressive disorder, female gender, and younger age

Anxiety: In the early stages, anxiety may be a manifestation of the patient's subjective avareness of his/her cognitive decline, his or her increased dependency on others, and fear of the disease and its progression. In the moderate stages, anxiety over a calciponnent and fear of being left alone are common. Changes in the daily routine and the invironment can trigger anxiety in the demented patient and could easily escalate to agriculture and aggress of

## NEUROIMAGING

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At least one unenhanced CT or MRI scan should be performed in patients with cognitive decline to rule out unexpected structural lesions and also to provide information about potential silent vascular injury.

- Mesial temporal atrophy including the entorhinal cortex, hippocampus, and amygdala are considered typical for the prodromal AD stages.
- In the dementia stage, global brain atrophy—more striking in the temporoparietal than in the frontal regions—and ventricular enlargement are also pronounced.

SPECT findings of blood-flow abnormalities in a temporoparietal distribution may aid in confirmation of AD, especially in cases without significant atrophy.

PET using [18F]fluorodeoxyglucose (FDG), a measure of energy utilization in the brain that predominantly marks synaptic activity, also shows temporoparietal deficits, is more sensitive than SPECT, and can confirm the diagnosis.

Amyloid PET imaging (Pittsburgh Compound B (PIB) offers the prospect of a preclinical or early diagnostic biomarker for AD.