



# Practical Approach and Evaluation of Common Neurodegenerative Diseases

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Case-Based Questions (please see page 3 for answers)

1.	A 78-year-old female decedent comes to autopsy after a 10-year history of Alzheimer-type dementia. Which section would be best to evaluate beta-amyloid Thal phase 5?
a.	Dorsolateral prefrontal cortex
b.	Motor cortex
c.	Cerebellum
d.	Pons
e.	Visual cortex

2.	A 75-year-old male decedent comes to autopsy after an 8-year history of postural instability, gait difficulty, cogwheel rigidity, and masked facies, but without cognitive impairment. On gross examination, the brain does not show evidence of global atrophy but demonstrates severe depigmentation of the substantia nigra. What is the most likely underlying pathology?
a.	Alpha-synuclein Lewy bodies and neurites
b.	Beta-amyloid plaques
c.	Beta-amyloid plaques and neurofibrillary tangles
d.	TDP-43 inclusions
e.	Neurofibrillary tangles

3.	An 89-year-old male decedent comes to autopsy with a clinical history of mild cognitive impairment. Which sections would be useful to evaluate for LATE-NC?
a.	Hippocampus, midbrain, and cerebellum
b.	Amygdala, hippocampus, and middle frontal gyrus
c.	Frontal cortex, temporal cortex, and visual cortex
d.	Cingulate gyrus, visual cortex, and basal ganglia
e.	Frontal cortex, thalamus, and cerebellum

**Scroll to Page 3 for answers**

## Correct Answers and Rationales

### Question 1 Correct Answer and Rationale: **c. Cerebellum**

Rationale: Thal phases, phases 1-5, evaluates spread and severity of beta-amyloid plaque deposition, wherein Thal phase 5 (A3) represents the most severe stage. Beta-amyloid plaques in the cerebellum meet criteria for Thal phase 5.

### Question 2 Correct Answer and Rationale: **a. Alpha-synuclein Lewy bodies and neurites**

Rationale: Based upon the history, the most likely clinical diagnosis is Parkinson's disease, which is typified by underlying alpha-synuclein aggregates defined neuropathologically in Lewy body disease. Given the gross examination, the predominant neuropathologic findings will be mostly limited to the brainstem.

### Question 3 Correct Answer and Rationale: **b. Amygdala, hippocampus, and middle frontal gyrus**

Rationale: Limbic predominant age-related TDP-43 encephalopathy neuropathological change (LATE-NC) is commonly associated with older individuals with memory deficits and neuropathologically defined by TDP-43 inclusions. The stages of LATE-NC primarily include the amygdala, hippocampus, and middle frontal gyrus. Additional sections may be added as needed to distinguish between frontotemporal lobar degeneration with TDP inclusions (FTLD-TDP).