

# Trauma

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

1.	Which of the following is pathognomonic for chronic traumatic encephalopathy?
a.	Neurofibrillary tangles in the superficial layers
b.	Patchy distribution of neurofibrillary tangles
c.	Perivascular astrocyte tau pathology
d.	Perivascular neuronal tau pathology

2.	Chronic traumatic encephalopathy can be differentiated from primary age-related tauopathy and age-related tau astrogliopathy by:
a.	Differential involvement of the hippocampal subfields with abnormal tau deposition
b.	The presence or absence of argyrophilic grains
c.	The presence of amyloid pathology
d.	The presence of dendritic dystrophy

3.	Which of the following is false regarding application of deep learning to digital neuropathology.
a.	Deep learning algorithms are able to quantitatively detect tau pathology on whole slide images
b.	Deep learning algorithms are able to predict clinical symptomatology, such as cognitive impairment, on whole slide images
c.	Deep learning algorithms are able to measure age acceleration in human post-mortem brain tissue sections
d.	Deep learning algorithms are unbiased

**Scroll to Page 3 for answers**

Question 1 Correct Answer and Rationale: **D: Perivascular neuronal tau pathology**

Rationale: Only perivascular neuronal tau pathology is pathognomonic for CTE. The other features are often seen.

Question 2 Correct Answer and Rationale: **A: Differential involvement of the hippocampal subfields with abnormal tau deposition**

Rationale: There is differential involvement of the hippocampal subfields, with PART involving CA2 and CA1, but CTE involving the entire hippocampal formation.

Question 3 Correct Answer and Rationale: **D: Deep learning algorithms are unbiased**

Rationale: Deep learning algorithms come with a great deal of bias and must be trained and monitored closely. Nevertheless, they hold promise to be less biased than human observers.