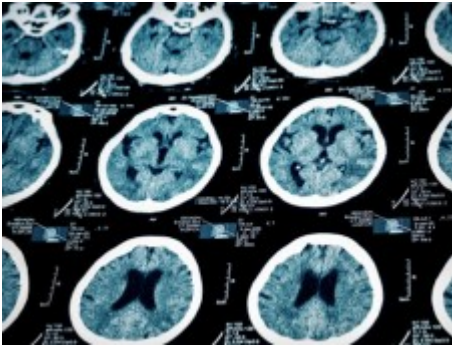


# The use of PET-scan imaging to evaluate cognitive impairment and dementia

By ACSH Staff — September 29, 2014



Recently, the FDA has approved <sup>[1]</sup> new PET tracers as clinical

tools to estimate brain amyloid burden in patients being evaluated for cognitive impairment or dementia. And these new tracers - tau-protein tracers - may be key to distinguishing between chronic traumatic encephalopathy (CTE) a degenerative disease of the brain often found in athletes and Alzheimer s disease (AD).

In distinguishing among the various causes of cognitive impairment the late stages of which are called dementia the presence of tau protein in the brain is of substantial importance. In combination with the detection of beta-amyloid plaques, their detection represents the hallmark of AD.

The presence of tau protein may also signify CTE. This new tracer distinguishes between tau protein, which is present in CTE patients, and amyloid, making it effective at ruling out Alzheimer s disease. Although tau protein may be present in Alzheimer s patients, the location of the tau protein will be different in those who have CTE. At this point, though, the tracer is not yet at an advanced enough level to discern location of the proteins.

Additionally, the PET tracer is an important advance, since it can be used on those who are still living, whereas previously, CTE could only be diagnosed on post-mortem exam.

Two case studies appearing on [MedPage Today](#) <sup>[2]</sup> analyze the use of this tracer in assessing two patients thought to have either CTE or Alzheimer s. Case one is a 71-year old man who played in the NFL and who had experienced many concussions throughout his career. Although suspected of having Alzheimer s, the PET scan did not show the presence of cerebral amyloid plaques characteristic of the disease. The second case is a 59-year old man who suffered a head injury skiing. The tracer also failed to detect amyloid, except at the site of the brain injury, and Alzheimer s was therefore ruled out.

According to Dr. Roger Kelly, chair of the department of neurology at Tulane University, The amyloid and tau scans are really research tools at present, not for use in the clinical realm, but

with further refinement may have benefit for use in rigorous clinical trials. And eventually, these tracers may be helpful in determining how to manage different types of dementia.

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**Links**

[1] <http://www.medpagetoday.com/Neurology/Dementia/47842>

[2] [http://www.medpagetoday.com/Neurology/Dementia/47842?xid=nl\\_mpt\\_DHE\\_2014-09-](http://www.medpagetoday.com/Neurology/Dementia/47842?xid=nl_mpt_DHE_2014-09-27&utm_content=&utm_medium=email&utm_campaign=DailyHeadlines&utm_source=ST&utm_medium=email)

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