

Transcript Details

This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: <https://reachmd.com/programs/neurofrontiers/reviewing-the-revised-alzheimers-diagnostic-criteria-the-role-of-biomarkers/29094/>

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www.reachmd.com
info@reachmd.com
(866) 423-7849

Reviewing the Revised Alzheimer's Diagnostic Criteria: The Role of Biomarkers

Announcer:

Welcome to *NeuroFrontiers* on ReachMD. On this episode, we'll hear from Dr. Clifford Jack Jr., who's a Professor of Radiology and the Alexander Family Professor of Alzheimer's Disease Research at the Mayo Clinic in Rochester, Minnesota. He'll be discussing the revised criteria for diagnosing and staging Alzheimer's disease, which emphasize biological markers. Here's Dr. Jack now.

Dr. Jack:

Let's take two different scenarios: a symptomatic person versus an asymptomatic person.

In the first scenario, a symptomatic person who is seen in the clinic. So the fact is that clinical symptoms are not specific for Alzheimer's disease. Clinical symptoms indicate the qualitative nature and the severity of clinical impairment, but cognitive impairment can be due to several different common age-related pathologies, most often in combination. So if you want to answer the question "Could Alzheimer's disease be a contributing cause of the impairment to the patient that I see before me?" then you have to have biological evidence that Alzheimer's disease is present, and this can only be given by biomarkers with certainty. It is the case that if you're going to treat a patient for a disease, you have to be certain that the patient does indeed have that disease.

The second scenario: an asymptomatic patient. So here there are no symptoms, so the only evidence that you have to indicate that indeed Alzheimer's disease is present would be biomarkers. Now it's important that in the criteria we emphasize that we recommend against testing for clinical purposes in asymptomatic people at this time. The fact is there are no approved treatments for asymptomatic people, and so testing will not change the management or the advice that you would give any patient.

So the question might be "Why would we even mention the presence of Alzheimer's disease in asymptomatic people in the first place?" And the answer is that our criteria are intended to accurately reflect current scientific evidence and current scientific knowledge, and the scientific evidence here is irrefutable. The disease in the brain precedes the onset of symptoms by years. The disease causes symptoms, and like any cause and effect relationship anywhere in nature, the cause has to precede the effect, so in this respect, Alzheimer's disease is no different from any other disease in medicine where biomarkers of the disease can detect the presence of the disease in people who are currently asymptomatic.

So Core 1 versus Core 2 biomarkers are distinguished by two different features. One is the time of onset, and two is the intended use. So Core 1 biomarkers are amyloid PET, approved CSF assays, and high-performing plasma assays like pTau217. These become abnormal early in the disease course and stay abnormal throughout the disease continuum. Thus, they can be used for diagnosis at any stage of the disease. Core 2 biomarkers, on the other hand, become abnormal later; they correlate better with the onset of symptoms, which is no surprise because symptoms also occur late in the disease continuum; and Core 2 biomarkers are typically not used as stand-alone diagnostic tests; they're rather in combination with Core 1 biomarkers for biological staging.

So Core 1 and Core 2 biomarkers really address different questions. Core 1 biomarkers address the question "Is Alzheimer's disease present? Yes or no?" And in a symptomatic person, a Core 1 biomarker addresses the clinical question "Could Alzheimer's disease be a contributing cause to the symptoms I observe in this patient?" Core 2 biomarkers address a different question. So Core 2 in combination with Core 1 biomarkers stage the biological stage or severity of the disease. So biological staging receives less attention than diagnosis in the criteria, but it's really equally important because biological stage indicates 1) in an asymptomatic person, "How close are they in time to developing symptoms?" The more severe the stage, the closer the person is going to be to developing symptoms; and 2) in a symptomatic person, the severity of the biological stage addresses the question "How likely is it Alzheimer's

disease is a major predominant contributor to a patient's symptoms?"

Announcer:

That was Dr. Clifford Jack Jr. talking about the revised criteria for diagnosing and staging Alzheimer's disease. To access this and other episodes in our series, visit *NeuroFrontiers* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!