

Wed-0343



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KEY TAKE AWAY: MBI appears to represent a biologically distinct prodromal stage of AD, characterized by inflammatory and vascular mechanisms, whereas MCI progression to AD is primarily driven by genetic risk and neurodegeneration.

RESULTS

- Mild Behavioral Impairment (MBI), defined by the later-life emergence of persistent neuropsychiatric symptoms, has been proposed as an early stage of the AD continuum. [1]
- We investigated the biomarker profile of MBI and predictors of progression to AD compared with mild cognitive impairment (MCI).[1]

➤ MBI biomarker profiles fall between those of the cognitively normal and AD groups (similar to MCI).

- Alzheimer's Association (AARG-D).
- Texas Alzheimer's Research and Care Consortium (TARCC).

The diagram illustrates the distinction between Major Behavioral Inertia (MBI) and Major Cognitive Impairment (MCI). It is structured into two main columns, each representing a condition, with a central comparison symbol.

Left Column (MBI):

- Header:** MBI (Major Behavioral Inertia)
- Brain Illustration:** A purple brain icon.
- Symptoms:** Behavioral symptoms
- Driver:** Driven by inflammatory & vascular processes
- Biological Illustrations:** Three icons representing inflammation and vascular issues: a red blood vessel with a blockage, a pink cell with internal organelles, and a blue gear-like cell.

Center: A large "not equal" symbol ($\neq$) indicates that MBI is distinct from MCI.

Right Column (MCI):

- Header:** MCI (Major Cognitive Impairment)
- Brain Illustration:** An orange brain icon.
- Symptoms:** Cognitive impairment
- Driver:** Driven by genetic risk & neurodegeneration
- Biological Illustrations:** Two icons representing genetic risk and neurodegeneration: a blue DNA double helix and an orange neuron.

Bottom Summary:

- A green star icon is followed by the text: "MBI may represent a biologically distinct prodromal stage of Alzheimer's disease."

[1] Ismail Z, et al. Neuropsychiatric symptoms as early manifestations of emergent dementia: Provisional diagnostic criteria for mild behavioral impairment. *Alzheimers Dement*. 2016;12(2):195-202.

[2] Ghahremani M, et al. Exploring the association between mild behavioral impairment and plasma p-tau217: Implications for early detection of Alzheimer's disease. *Alzheimers Dement (Amst)*. 2025;17(2):e70119.