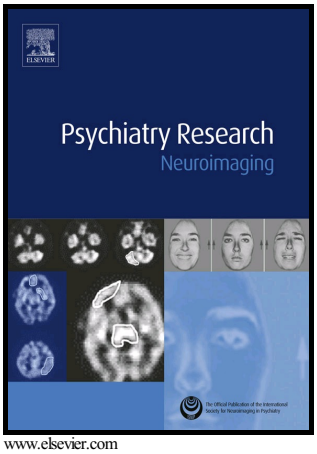

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Odor Identification Deficit in Mild Cognitive Impairment and Alzheimer's Disease is Associated with Hippocampal and Deep Gray Matter Atrophy

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Abstract

Even in early stages, Alzheimer's disease (AD) is associated with olfactory deficit. We assess the association of volumetric differences in subcortical deep gray matter (DGM) structures and odor identification deficit (OID) in subjects with amnestic mild cognitive impairment (aMCI), AD and normal controls (NCs), and relate findings to the current gold standard right sided memory measure, visual reproduction. Eighty subjects (19 aMCI; 42 AD; 19 NC) were included in this study. We obtained olfactory testing and normalized structural brain volumes from 3T T1 MRI scans. Associations between MRI, olfactory- and memory impairment were studied using Pearson- and partial-correlation adjusted for age. AD patients had significantly higher olfactory deficits, lower visual reproduction scores, and reduced brain volumes (p<.05). Within aMCI,