

# Impaired Graphesthesia May Signal Early AD

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BAL HARBOUR, FLA. — Impaired graphesthesia, a prevalent finding among patients with mild cognitive impairment, may be an early sign when considered with memory loss that a patient has preclinical Alzheimer's disease, according to a study.

Mild cognitive impairment (MCI) is generally accepted as a precursor to Alzheimer's disease. Some neurologists screen MCI patients with a graphesthesia test, Edward Zamrini, M.D., said in an interview.

Graphesthesia is the sense by which people identify figures or numbers drawn on their hands with a dull-pointed object.

In an assessment for graphesthesia, people hold one hand out in front of them as if reading from it with the hand's long axis perpendicular to the midline axis of the body. While the patient's eyes are closed, the neurologist traces a number "1" on the patient's palm, asking the patient to identify the number out loud. Then the physician traces a second number on the patient's palm before repeating the process on the other hand.

Patients have two chances to identify the number correctly. If they fail to do so, they may be diagnosed with impaired graphesthesia.

Dr. Zamrini and his colleagues assessed more than 200 consecutive new patients at the Memory Disorders Clinic at the University of Alabama, Birmingham. Researchers identified patients by medical records between May 2001 and November 2002.

Investigators took a detailed history, noted medications, and performed a thorough neurologic and cognitive assessment.

Examinations included light touch, pinprick, joint and position sense, vibration sense, and a Mini-Mental State Examination (MMSE). Patients were 58% female and 83% white, and their mean age was 68 years.

Results were presented during a poster session at the annual meeting of the American Neuropsychiatric Association.

A total of 41 of the participants had MCI, 74 had Alzheimer's disease, and 96 were not diagnosed with either condition and were considered the control group. The control group included patients who had vascular dementia, frontal lobe dementia, and other non-Alzheimer's dementias.

The prevalence of impaired graphesthesia was 54% in the MCI group, 79% in the Alzheimer's group, and 33% in controls. The finding of higher impairment in the MCI patients, "even compared with other dementia patients, suggests that what I am catching is an early form of Alzheimer's disease, not only a memory loss," said Dr. Zamrini, a neurologist at the University of Alabama.

After incorporating such an exam into his practice, "I observed a disproportionately high number of my patients with MCI that have impaired graphesthesia," he said.

"It's just one more piece of evidence in support of the diagnosis of preclinical Alzheimer's disease, but you have to have the memory loss, too," Dr. Zamrini said. If additional studies support impaired graphesthesia as a predictive variable, it would be the first physical sign of preclinical Alzheimer's disease.

Although Alzheimer's disease affects memory areas first, the parietal lobes are a "close second," Dr. Zamrini said. The parietal areas are important to interpreta-

tion of senses, including graphesthesia.

Mean MMSE scores were 28 for the MCI group, 21 for the Alzheimer's disease group, and 26 for controls. The researchers grouped patients according to whether their MMSE score was 24 or greater or less than 24 to determine the effect of cognitive impairment on graphesthesia performance. There were significant differences in prevalence of impaired graphesthesia for participants scoring 24 or greater: 51% of the MCI group, 74%

of the Alzheimer's group, and 24% of the control group.

The differential diagnosis for impaired graphesthesia should include stroke and severe sensory loss, Dr. Zamrini said.

It is easier for specialists to diagnose Alzheimer's disease than mild cognitive impairment because there are many reasons for memory loss.

"Graphesthesia testing may help us in the future with that distinction," Dr. Zamrini said. ■



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