

## WHITE MATTER DEMENTIA

Cerebral white matter disorders affecting behavior and cognition are reviewed from the University of Colorado School of Medicine, and Denver VA Medical Center. Diffuse white matter pathology disrupts attentional systems, frontal lobe function, visuospatial skills, and emotional status, while sparing language abilities. White matter behavioral disorders have a greater capacity for recovery than gray matter disorders, possibly related to remyelination. However, a pure white matter disorder is uncommon, and gray matter is frequently implicated. The prototype white matter disease, multiple sclerosis, is frequently complicated by cognitive and emotional dysfunction. Other white matter disorders associated with dementia include metachromatic leukoencephalopathy, toluene-abuse leukoencephalopathy, AIDS dementia complex, traumatic brain injury, and hydrocephalus. Most white matter disorders are diffuse but some are focal, resulting in aphasia, alexia, agraphia, apraxia, agnosia, or akinetic mutism. The MRI and diffusion-weighted MRI may identify new examples of white matter involvement in behavioral disorders. (Filley CM. The behavioral neurology of cerebral white matter. Neurology June 1998;50:1535-1540). (Reprints: Dr Christopher M Filley, Behavioral Neurology Section, UCHSC B-183, 4200 East Ninth Ave, Denver, CO 80262).

COMMENT. The neurobehavioral disorder characteristic of white matter dementia is defined by deficits in sustained attention, memory retrieval, visuospatial skills, frontal lobe function, and emotional status, with preserved language and extrapyramidal function. Deficits in right frontal lobe function are explained by the relatively greater amounts of white matter in the right compared to left hemispheres.

## CARBON MONOXIDE COGNITIVE IMPAIRMENT

Neuropsychological tests were administered to 45 students exposed for 2 hours to carbon monoxide in low concentrations (mean, 61 ppm) from residential kerosene stoves and results compared to 47 nonexposed control students at the Hebrew, Haddasah, and Ben-Gurion Universities, Jerusalem, Israel. Venous blood carboxyhemoglobin levels ranged from 0.01 to 0.11. CO exposed students scored significantly lower on tests of memory, new learning ability, attention and concentration, tracking skills, visuomotor skills, abstract thinking, and visuospatial planning and processing. (Amitai Y, Zlotogorski Z, Golan-Katzav V, Wexler A, Gross D. Neuropsychological impairment from acute low-level exposure to carbon monoxide. Arch Neurol June 1998;55:845-848). (Reprints: Yona Amitai MD, Department of Pediatrics, Hadassah University Hospital Mt Scopus, Jerusalem 91240, Israel).

COMMENT. Low-level carbon monoxide exposure results in impairments of higher cognitive function similar to those previously reported in patients with moderate CO poisoning. Early symptoms of CO poisoning consist of headache and fatigue, followed by dizziness and syncope. Subtle signs of CO exposure may require psychological tests for their detection.

## VALIDITY OF DSM-IV ADHD CRITERIA IN YOUNGER CHILDREN

The validity of DSM-IV criteria for each subtype of ADHD was evaluated in 126 children, aged 4 through 6 years, and 126 matched controls at the University of Chicago. Children who met DSM-IV diagnostic criteria according to parent interviews and teacher reports differed from controls on a wide range of measures of social and academic impairment. Criteria for all three DSM subtypes were valid for identification of children with ADHD, aged 4 -6 years. (Lahey BB,