

**Editors' Note:** Dr. Gutmann, in response to Dr. Holloway's "Reflections for October," shares his own story of an inspiring patient with amyotrophic lateral sclerosis. Dr. Holloway responds by quoting Albert Schweitzer: "Every patient carries his or her own doctor inside." Dr. Nasreddine et al., in reference to the population-based study of the Montreal Cognitive Assessment by Dr. Rossetti et al., draw attention to the stricter exclusion criteria used in their original study of the screening tool. The WriteClick submitters question whether the rate of mild cognitive impairment will be underestimated if community-based samples are used to establish norms. The authors, Dr. Rossetti et al., recognize the controversy around what constitutes a "normal" population in neurocognitive testing. They caution that the recommended cutoffs from the original study may not apply in ethnically diverse samples or those with fewer years of education.

*Megan Alcauskas, MD, and Robert C. Griggs, MD*

#### REFLECTIONS FOR OCTOBER

**Ludwig Gutmann, Morgantown, WV:** Dr. Holloway's reflection of removing the ventilator from a patient with terminal amyotrophic lateral sclerosis (ALS) was touching and thoughtful.<sup>1</sup> Patients with ALS, faced with their mortality and knowing there is no hope of ameliorating their disease, often wrestle with the meaning of life. Frequently, as in Holloway's patient, they meet the challenge with bravery and courage and, in the process, have a profound impact on their physicians.

Holloway's story reminded me of one of my patients with ALS. For the past few years, his severe speech disturbance has prevented any coherent verbal communication; he barely swallows; and has no use of his arms. He is totally dependent on his wife for all his daily activities. Yet, as an avid football fan, he dutifully trudges down and up the stadium steps of Mountaineer Field on fall weekends, his paralyzed arms hanging loosely at his side, and spends weeks in Florida during his father's winter fishing trip. We sit near each other at the games and he always has a cheerful greeting for me. He has taught me that life

can be fun and fulfilling even when there's so much you cannot do.

**Author Response: Robert G. Holloway, Rochester, NY:** I thank Dr. Gutmann for his comments. The strength of the human spirit soars. Albert Schweitzer said, "Every patient carries his or her own doctor inside." If our interactions with patients perfectly align each and every medical decision made with their underlying preferences, values, hopes, and dreams, then we have succeeded as a profession. This is patient-centered care in the purest sense; the pinnacle of high-quality medical care.

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1. Holloway R. Patients who never leave us. *Neurology* 2011; 77:1496-1498.

#### NORMATIVE DATA FOR THE MONTREAL COGNITIVE ASSESSMENT (MOCA) IN A POPULATION-BASED SAMPLE

**Ziad S. Nasreddine, Natalie Phillips, and Howard Chertkow, Montreal:** Rossetti et al.<sup>1</sup> reported a population-based study of scores on the Montreal Cognitive Assessment (MoCA) in Texas. Compared to our study<sup>2</sup> in Montreal, the Caucasian group of normal controls in the Rossetti et al. study was considerably younger (52.9 vs 72.8 years) and had slightly lower mean MoCA scores (25.6 vs 26.9). In the other ethnic groups, they found substantial effects of age and education on their MoCA scores.

Subjects in our study were excluded if they had subjective complaints of memory loss, systemic illness, drug or alcohol use, or any abnormality on in-depth neuropsychological assessment, neurologic examination, and brain imaging studies. Had the same strict criteria been applied to the community subjects in Rossetti et al., their results may have matched our own. Knowing that half of elderly individuals have some sort of brain pathology at death,<sup>3</sup> we would hesitate to apply norms derived from a community sample rather than subjects with stricter criteria of admission to a normative comparison group.

We will undoubtedly underestimate the rate of mild cognitive impairment caused by vascular or de-

generative disease if lower cutoff scores on the MoCA are applied.

**Author Response: Heidi Rossetti, Charlottesville, VA; Laura Lacritz, Munro Cullum, and Myron Weiner, Dallas:** There is ongoing debate about what constitutes the “best” normative comparison group for neurocognitive tests, with some advocating that screening out common illnesses results in “supernormal” samples that may not represent the general population. We did not address this issue, but presented community-based population norms<sup>1</sup> and excluded subjects with subjective cognitive complaints.

This suggests that the recommended cutoff score derived from the original well-educated Canadian sample<sup>2</sup> may require adjustment for dissimilar individuals. Using the suggested cutoff of 26, half of our large sample would fall in the mild cognitive impairment (MCI) range, which is misleading.

Neuropsychological tests commonly utilize demographically adjusted norms, and the provision of data from representative populations can increase a screening measure’s utility, as is done for the Mini-Mental State Examination.<sup>4</sup> Furthermore, the rela-

tively high failure rate on some MoCA items in our sample suggests that certain items may be culturally biased, have poor psychometric properties, or both, in populations that differ from the original study.

Our investigation was not intended to examine the MoCA’s diagnostic utility or determine cutoff scores for MCI, but our findings suggest the need for caution when applying proposed cutoffs in lower education or ethnically diverse samples, which is important given the MoCA’s increasing use in a variety of settings.

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## Normative data for the Montreal Cognitive Assessment (MoCA) in a population-based sample

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