

Neuropsychological function. All participants completed a neuropsychological test battery, developed to cover a broad range of deficits previously implicated in OSA (1). Alternate forms were used where appropriate. *The National Adult Reading Test (NART)* was used to assess premorbid intelligence. *The Digit Span (DS) Test* was administered to assess attention and working memory (2). Digit Span involves immediate verbal recall and subsequent manipulation of numbers. DS forwards requires the recall of a series of numbers in the same order that they are given. DS backwards requires recall of the numbers in the reverse order. The number of correct responses for each test was recorded. *The Controlled Oral Word Association Test (COWAT)* is a verbal fluency test that measures the number of words generated belonging to the same letter in 60 seconds. Three trials were presented to the participant, and age-adjusted values were calculated. *The Logical Memory Test* is a verbal test assessing immediate and delayed memory recall of a short story (3). *The Trail Making Tests A and B* (TMT A and TMT B) were used to assess visual-motor tracking and set-shifting. TMT A requires the participant to draw a continuous line that connects 25 circled digits in sequence. TMT B requires an alternation from number to letter (1-A-2-B-3-C etc.). Performance was measured by the speed at which the task is correctly completed in TMT A subtracted from TMT B in seconds. *The Stroop task* assessed cognitive flexibility and resistance to interference (4). The congruent test involves the words "RED," "GREEN," and "BLUE," printed in black ink, the second test involves the item "XXXX" printed in red, green, or blue ink, and the incongruent test involves the words "RED," "GREEN," and "BLUE" printed in incongruent colored ink. Time taken to read each page was measured and an interference score was calculated by subtracting the time taken on the incongruent test from the congruent test. The *Paced Auditory Serial Attention Task (PASAT)* assessed information processing and flexibility

(5). Participants listen to list of numbers spoken at set intervals through an audiotape, and asked to add the new digit to the number that was presented immediately prior to it.

Subjective and objective tests of daytime sleepiness and vigilance. The *Epworth Sleepiness Scale* (ESS; (6)) was used to assess the patients' level of subjective daytime sleepiness. The *Maintenance of Wakefulness Test* (MWT) was used to objectively assess the level of sleepiness (7) on the day following the PSG, and vigilance was assessed with the *Psychomotor Vigilance Task* (PVT; (8)), measured as attentional lapses (reaction times >500ms).

Mood and Quality of Life. Participants rated their general mood using the *Profile of Mood States* (POMS; (9)). The *Beck Depression Inventory II* (BDI; (10)) was used to assess depression. Quality of life was assessed using the *Functional Outcomes of Sleep Questionnaire* (FOSQ; (11)) and the *Short Form 36 health Survey* (sf36; (12)).

References

1. Bedard MA, Montplaisir J, Richer F, et al. Obstructive sleep apnea syndrome: pathogenesis of neuropsychological deficits. *J Clin Exp Neuropsych* 1991;13:950-64.
2. Weschler D. WAIS-R Manual. New York: The Psychological Cooperation, 1981.
3. Weschler D. Weschler Memory Scale. London, UK: The Psychological Corporation, 1998.
4. Golden CJ. Stroop color and word test: A manual for clinical and experimental uses. Chicago, IL: Stoelting Co., 1978.
5. Gronwall D. Paced auditory serial-addition task: a measure of recovery from concussion. *Percep Motor Skills* 1977;44:367-73.
6. Johns MW. A new method for measuring daytime sleepiness: The Epworth Sleepiness Scale. *Sleep* 1991;14:540-5.
7. Doghramji K, Mitler MM, Sangal RB, et al. A normative study of the maintenance of wakefulness test (MWT). *Electroencephalogr Clin Neurophysiol* 1997;103:554-62.
8. Dinges DF, Powell JW. Microcomputer analyses of performance on a portable, simple visual RT task during sustained operations. *Behav Res Meth Instrum Comput* 1985;17:652-5.
9. McNair D, Lorr M, Droppleman L. EdITS Manual for the Profile of Mood States. San Diego, CA: EdITS, 1992.
10. Beck A, Steer R, Brown G. Beck Depression Inventory-II Manual. San Antonio: The Psychological Society; 1996.
11. Weaver T, Laizner A, Evans L, et al. An instrument to measure functional status outcomes for disorders of excessive sleepiness. *Sleep* 1997;20:835-43.
12. McHorney CA, Ware JE, Jr., Raczek AE. The MOS 36-Item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Med Care* 1993;31:247-63.