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## **Frontal lobe-related cognitive functions in patients with sleep apnea syndrome before and after treatment.**

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Impairments of cognitive executive functions has been previously suspected to occur in Sleep Apnea Syndrome (SAS), as suggested by some neuropsychological studies. However such functions have not been assessed directly. In the present study, ten patients with SAS were evaluated with various focused frontal lobe-related tests in comparison with ten matched normal controls. Such tasks explored attention, short term memory spans, learning abilities, planning and programming capacities, categorizing activities and verbal fluency. Patients were found with a significant decreased ability to initiate new mental processes and to inhibit automatic ones in conjunction with a tendency for perseverative errors. They were also affected with deficits of verbal and visual learning abilities and they had reduced spans. Patients were submitted to continuous positive airway pressure (CPAP) and further reevaluated after 4-6 months of treatment. Patients were found to have normalized most of their cognitive executive and learning disabilities, except for all the short-term memory tests which remained unchanged. These findings are discussed in light of data from the literature concerning cognitive impairments described for patients with isolated daytime sleepiness versus hypoxemia, as illustrated in other pathological or physiological circumstances. The contribution of frontal lobe-related systems in short-term memory functions is also taken into account.

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