

Changes in Alzheimer biomarkers tied to withdrawal of positive airway pressure for obstructive sleep apnea

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For patients with severe obstructive sleep apnea (OSA), withdrawal of positive airway pressure (PAP) is associated with changes in plasma Alzheimer disease biomarkers, according to a study published online June 13 in the *American Journal of Respiratory and Critical Care Medicine*.

Korey Kam, Ph.D., from the Icahn School of Medicine at Mount Sinai in New York City, and colleagues examined overnight changes in plasma Alzheimer disease biomarkers among individuals with severe OSA who are normally adherent to PAP at home. Blood collected in the evening and next morning was examined across a night of polysomnographically recorded sleep in 30 individuals with severe OSA during conditions of therapeutic PAP and off PAP (acute [withdrawal](#)).

The researchers identified significant differences in the overnight change in neurofilament light (NfL) and amyloid $(A\beta)_{40}$ between the conditions, with

a relative increase in NfL and relative decrease in $A\beta_{40}$ in association with PAP withdrawal. No difference was seen between the conditions for the change in T-tau or $A\beta_{42}$. Significant associations were seen for the number of sleep stage transitions and the amount of time below 90 percent oxygen saturation with NfL as a function of PAP withdrawal. No sleep or respiratory measures predicted overnight change in $A\beta_{40}$.

"Our findings add to a growing literature suggesting that untreated sleep apnea is poor for [brain health](#) and may increase risk for neurodegenerative [disease](#)," a coauthor said in a statement.

Several authors disclosed financial ties to the pharmaceutical and health care industries; two authors disclosed holding patents relating to OSA and continuous PAP.

More information: Korey Kam et al, Acute OSA Impacts Diurnal Alzheimer's Biomarkers Through Nocturnal Hypoxemia and State Transitions, *American Journal of Respiratory and Critical Care Medicine* (2022). [DOI: 10.1164/rccm.202202-0262LE](#)

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