Sleep problem linked to changes in hallmark Alzheimer's protein

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Researchers in the US have found a link between the sleep disorder, obstructive sleep apnoea, and levels of a protein involved in Alzheimer's disease. Their findings are published today in the *American Journal of Respiratory and Critical Care Medicine*.

Obstructive sleep apnoea (OSA) involves periods of disordered breathing, which occur when a person's upper airway closes during sleep. Sleep problems including OSA have previously been linked to an increased risk of dementia and signs of the Alzheimer's protein, amyloid, building up in the brain. The evidence is less clear about whether sleep problems lead to an increased risk of Alzheimer's, or if very early Alzheimer's changes might cause disrupted sleep.

Scientists worked with 208 people between the ages of 55 and 90 who did not have dementia. The participants provided information about their quality of sleep and snoring history, and were monitored over two nights for signs of OSA with a home sleep recording device. The study also involved memory and thinking tests; a lumbar puncture, so that scientists could analyse levels of amyloid in the spinal fluid; and a PET brain scan to show any areas of amyloid build-up in the brain. Researchers compared participants' results in these tests at the beginning of the study to those they collected two years later.

Scientists found that OSA was common, affecting 53% of the people in the study. Results from the tests showed that people who had more severe sleep apnoea at the start of the study had indications of more amyloid build up in the brain, but they found no relationship between OSA and participants' performance in memory and thinking tests.

Dr Rosa Sancho, Head of Research at Alzheimer's Research UK, said:

"Obstructive sleep apnoea can get in the way of getting a good night's sleep, and may have wider implications for your health. This study adds to existing evidence of a relationship between sleep problems and Alzheimer's-related changes in the brain, but it doesn't tell us if people went on to develop Alzheimer's and whether treating sleep apnoea could help reduce the risk of Alzheimer's disease later in life.

"Even though this research linked sleep disruption to Alzheimer's changes two years later, this is too short a time frame to get a good sense of cause and effect. Alzheimer's changes can develop in the brain for well over a decade before symptoms show, and future studies will need to explore this relationship over a much longer period of time."

Provided by Alzheimer's Research UK