

Breathing problems during sleep linked to Alzheimer's

Oliver Moody, Science Correspondent

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Three out of ten men and one in five women are thought to have trouble breathing in their sleep REX FEATURES

Night-time breathing problems that affect as many as one in four adults can prevent the brain clearing out noxious waste proteins associated with Alzheimer's disease, researchers have said.

Doctors are experimenting with dental shields, compressed air masks and lifestyle changes in the hope that these simple steps will delay or prevent many cases of dementia, which is predicted to affect more than two million Britons by the middle of the century. Studies have pointed to a link between poor sleep and the onset of serious memory conditions.

Findings presented at the Alzheimer's Association international conference in London yesterday included the first strong evidence that sleep disorders can prevent the brain clearing out noxious proteins.

Scientists believe that cheap sleep therapies such as continuous positive airway pressure (CPAP) devices could stop these biological signs of Alzheimer's disease from building up, delay serious cognitive decline by several years and even prevent it altogether in some patients.

"Sleep disordered breathing is treatable in many cases," Dean Hartley, the Alzheimer's Association's director of science initiatives, said.

"Through early diagnosis and effective treatment there is the potential to improve cognition and possibly reduce dementia risk."

Three out of ten men and one in five women are thought to have some kind of sleep-disordered breathing. In the most common form, known as obstructive sleep apnoea, the throat muscles relax and block the airway for at least ten seconds at a time.

Michael Bubu, an applied health scientist at Wheaton College, Illinois, said this meant brain cells could not get enough oxygen, leading to an accumulation of the amyloid-beta and tau proteins that are the classic harbingers of Alzheimer's disease. Sleep apnoea also raises inflammation and stresses neurons so that they get worse at communicating with one another.

Three teams of researchers co-ordinated by Professor Bubu tracked 1,639 Americans aged from their late sixties to their early eighties. Nearly half had mild memory problems; of the remainder, 325 had been diagnosed with Alzheimer's disease and 516 were cognitively normal.

Those with sleep apnoea but not Alzheimer's developed amyloid-beta proteins at a much faster rate than those who did not have either condition, while sleep apnoea seemed to make no difference to the amyloid-beta levels in patients who already had Alzheimer's.

Another analysis showed that sleep breathing disorders in general were linked to a steep rise in amyloid-beta levels for people with normal cognition.

Professor Bubu said the results indicated that detecting and dealing with sleep apnoea could be a comparatively easy way to head off dementia. Most people with sleep apnoea do not know that they have the condition: studies suggest that 82 per cent of men and 93 per cent of women are undiagnosed.

“Altogether, our findings suggest that clinical interventions aimed at sleep apnoea, such as treatment with CPAP or dental appliances in cognitively normal and mild cognitive impairment patients, could possibly mitigate or slow the progression of cognitive impairment to Alzheimer’s disease,” he said. “Obstructive sleep apnoea is an issue of public health significance because it is highly prevalent, results in serious morbidity and significant mortality, and has an enormous socio-economic impact.”

Clive Ballard, a dementia researcher at the University of Exeter, who was not involved in the studies, said there was growing evidence that a range of sleep problems might lead to Alzheimer’s as well as predict it.

“The sleep area, and whether it’s cause or effect with dementia, is something that’s being very actively worked on,” he said. “There are some [animal studies] that are also beginning to suggest that it’s causative, but it’s still at a relatively early stage.”

LEADING ARTICLE

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11 comments

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R Morse

Damn - I can never remember if I've slept badly or not.

judy ludlow

two out of ten men and one in five women - why the difference - one in five is surely the same as two out of ten. A little point but I just wondered why.

Objective Observer

@judy ludlow ...probably because the article says three out of ten men. Did you not get enough sleep last night or are you a Trump voter :)

Objective Observer

Big business Alzheimer's with a lot of money to be made from "research". The summary finding from all these "professors" is that, if you are born, you breathe and live for a while doing all sorts of things you have a chance of getting Alzheimer's...

Simon

People like you caused Trump to win an election.

Jerzy Krystyn

@Simon Nah - the Trump voters are more intelligent

Colin Dutton

Two links above to the same 'Live Longer' piece. Someone's a bit forgetful.

Pankaj Oza

Professor Bubu?

David

@Pankaj Oza Professor Yaffle's sidekick ?

Nick Tilley

I would suggest that this is presented the wrong way round.

Those with mental health issues and those just old, do not sleep well, tending not to sleep for long continuous periods, unlike the typical continuous period of the divided sleep types experienced by the young, they tend to be separate periods of sleep types with waking periods between. It would seem that there is a correlation with sleep type and periods of total darkness, with some sleep types requiring it, resulting in a tendency for waking at dawn in old age, napping in daylight.

The suggestion that we somehow expel noxious protein in our sleep sounds like a concept from the nineteenth century... Sleep is for regeneration and rest, physical and mental, how exactly that works is unknown, I would suggest that 'radiation' is the answer, exposure being critical, too little results in issues as does too much, modern life and materials is causing many of the problems endemic in the west, by changing exposure from the normal levels that resulted in our being.

Mullard

In the past few days I have read about three causes of alzheimers: sleep apnoea, diabetes and stressful life events like divorce and parental alcoholism. Given that heredity, diet, lack of exercise and social isolation are also considered to be causes, the wonder is that anyone reaches old age without developing it. Perhaps this is what we should look for: the cause of NOT getting dementia.