

Alzheimer's research increasingly focused on links to sleep and other behaviors

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Sleep and other behavioral topics are growing within Alzheimer's disease

research, according to a new report released today by Elsevier, a global information analytics business specializing in science and health.

To coincide with World Alzheimer's Month, Elsevier analyzed Alzheimer's research published since the 1970s offering a comprehensive view of the landscape of Alzheimer's research worldwide for the past 50 years.

The study reveals that behavioral topics such as sleep is an important and emerging topic for Alzheimer's research; scientists exploring this connection are developing new theories on the early warning signs of this disease, which could help interrupt its progression¹. The prominence of research on the relationship between sleep and Alzheimer's is growing alongside interest in dominant topics such as the amyloid- β protein. Other prominent behavioral research topics include learning and gait.

"Using our research analytics platform SciVal, which computes granular bibliometric analyses from Scopus data, we're able to drill down deep into sometimes hidden clusters of citation activity within Alzheimer's research," said Maria de Kleijn, SVP, Elsevier Analytical Services.

"Although the portion of papers that focus on the relationship between sleep and Alzheimer's is relatively small, citation activity within that cluster tells us that it could be where research is heading in the future."

Findings also show that among the research that mentions sex or gender terms for [human subjects](#), the number of publications mentioning a single sex has a small discrepancy—30 percent mention males exclusively; 26 percent mention females exclusively; and 44 percent of studies on humans mention both sexes.

In contrast, based on animal models, more Alzheimer's research is conducted using male subjects rather than female subjects: male subjects were included in 87 percent of the studies and used exclusively in 62

percent; whereas female subjects were included in only 37 percent of the studies and used exclusively in just 14 percent.

The report also identified two main clusters of Alzheimer's research: one related to the [molecular mechanisms](#) involved in generating toxic entities in cells; and the other related to research with human subjects, specifically, clinical research, epidemiology and population health research. These two clusters are not linked by any terms, which suggests there are no major bodies of research connecting this basic science and research involving humans at this time.

"It is particularly interesting to see that the field is quite split into two separate fields with few mechanistic studies utilizing human subjects. I think this is probably changing with MRI of living patients and brain tissue use (electron microscopy examination of postmortem brain)," said Louise Serpell, Professor of Biochemistry at the University of Sussex. "The use of pluripotent stem cells may help to bridge the gap between living human studies and biochemical and neuroscience mechanistic studies."

Other findings highlighted in the report:

- The United States is the top producer of Alzheimer's disease research, with 16,238 published articles. This is more than double the output of the second highest contributor, China.
- Sweden is the top country for Alzheimer's disease research in terms of its relative activity i.e. based on the size of its portfolio compared with global averages, reflecting the high priority of this research in countries where the lifespan is longer and Alzheimer's has more impact.
- The percentage of academic-corporate collaboration in the UK, Germany and France also exceeds that seen in the US.
- Research on the disease represents 0.35-0.4 percent of all

research done globally in the past 5 years (2013-2018), with 50,614 items published in this period.

More information: Alzheimer's disease research insights: impacts, trends, opportunities. [elsevier.com/research-intelligence/resource-library/alzheimers-disease-research-insights](https://www.elsevier.com/research-intelligence/resource-library/alzheimers-disease-research-insights)

Provided by Elsevier

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