

Patent issued to device with potential to detect early symptoms of Alzheimer's, cognitive impairment

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The University of Maine was recently issued a patent, US 10,244,977, for a device that detects brain injury by measuring sleep movement

patterns. This technology will be licensed by Activas Diagnostics, a UMaine spin-off company.

The invention is a fitted mattress sheet equipped with more than a dozen sensors that will allow it to gather information about a person's sleep-wake and respiratory patterns while a person is sleeping in the comfort of their own home rather than in a sleep study facility. The SleepMove monitoring system has the potential to detect early symptoms of mild cognitive impairment and Alzheimer's Disease.

The UMaine inventors are Marie Hayes, professor of neuroscience, and Ali Abedi, assistant vice president for research, and professor of electrical and computer engineering. Together, they formed Activas Diagnostics to commercialize the [technology](#). The company has already received Maine Technology Institute funding and last year was awarded \$1 million from the National Institutes of Health Small Business Innovation Research (SBIR) program to continue product and market development. Activas Diagnostics is located in the UpStart Center for Entrepreneurship and participates in UMaine's business incubation program. The company currently has 10 employees.

"Activas Diagnostics' sleep technology will improve the safety and comfort of home sleep studies for older adults. Our 'under the sheets' mattress offers standard actigraphy and novel metrics associated with sleep quality and cognitive loss in early Alzheimer's and other neurological diseases," says Hayes.

"We are excited that these faculty researchers have decided to start a company to commercialize this technology in Maine that will employ scientists, engineers and businesspeople" says Jake Ward, UMaine vice president for innovation and economic development.

Through the funding they have received and the licensing opportunity,

their next steps are to complete the ongoing clinical sleep study to test this technology. The results from the home sleep studies on early Alzheimer's will allow them to then seek approval from the U.S. Food and Drug Administration. The impact of this project reaches beyond Alzheimer's research.

"The real-world experiential learning opportunities provided to UMaine students through this collaboration makes them highly desirable for future employers, while they are fulfilled knowing that their research is helping enhance quality of life for older adults," says Abedi.

Provided by University of Maine

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