



## Swedish sleep tracker platform enables automatic early detection of future covid outbreaks

*Analysis of aggregated coughing data from Sleep Cycle clearly shows a connection with the Omicron outbreak in the U.S. in November last year*

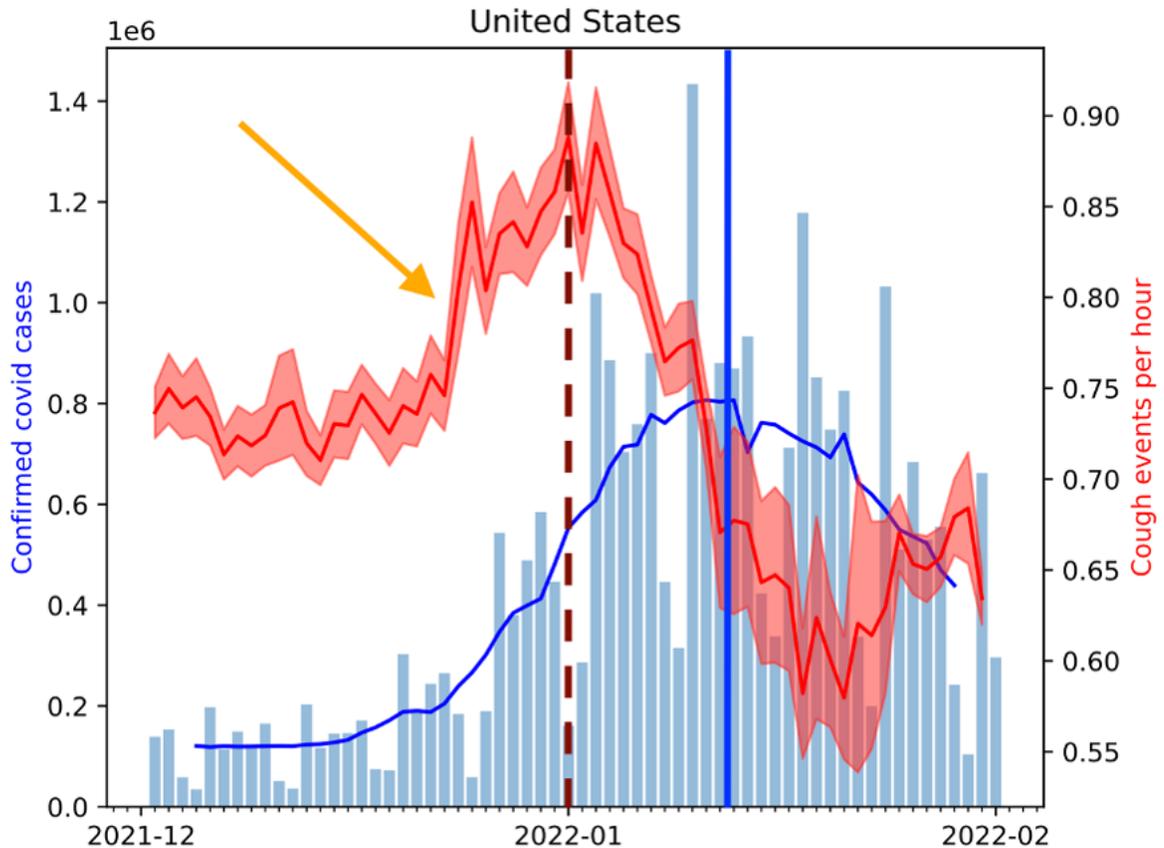
GOTHENBURG, Sweden - June 22, 2022 - Sleep Cycle, the world's most popular sleep solution, has found a way to automatically detect symptoms that can be linked to covid outbreaks\* at an early stage. With Sleep Cycle's sound-detection sleep tracking feature, it has been possible to analyze the coughing frequency during sleep in hundreds of thousands of American users during November last year. By correlating coughing with confirmed Omicron outbreaks in the United States, a direct link was found that revealed the outbreaks long before they were recorded in official statistics. As a result, this poses new opportunities to quickly identify and act on the risks of potential future outbreaks, without the need for time-consuming data collection projects.

Sleep Cycles' patented sound-detection-based algorithm and sleep tracker analyzes the sounds that occur when the user sleeps, with the aim of helping them understand how they can improve their sleep quality. Some examples of sounds that are captured and analyzed are movements, breathing, snoring, sounds from fans and pets and sleep talking. Sleep Cycle currently has over two million active users in over 150 countries.

"As we can automatically collect and compile aggregated data from the users who have chosen to share it, we can continuously present frequency curves for a country or region, for example." says Mikael Kågebäck, CTO at Sleep Cycle. "These insights can be of great importance for the successful management of potential future covid outbreaks."

It was in connection with Sleep Cycle's analysts linking sleep data from 100,000s of daily U.S. users with the number of confirmed Omicron infections in the U.S. during the period of the Omicron outbreak in November 2021 that Sleep Cycle discovered that there was a direct correlation. The discovery has been compiled in a report by Mike Gradisar and Daniel Sääf, Head of Sleep Science and Data Scientist, respectively at Sleep Cycle.

"With over two million users worldwide using the Sleep Cycle app at the same time, it provides an anonymous, but effective, overview of the population's health. The potential for future prevention of the spread of the disease is unlimited." says Mike Gradisar, Head of Sleep Science at Sleep Cycle.



### Highly effective to collect cough data at night

Analysis of such data can have great social and economic significance as the data can be used by organizations to identify future covid outbreaks in different parts of the world at an early stage.

"There has been a lot of research on how to quickly detect potential future covid outbreaks." Mikael Kågebäck continues. "However, most previous research has been based on data collected manually, which makes it both expensive and time-consuming to carry out. As we already have huge amounts of coughing data, and automatically get more for each night that passes, we can at an early stage identify deviations that indicate when it is time for relevant authorities to act.

Sleep Cycle shares its aggregated data anonymously and for the benefit of the research community. Today the company has several collaborations with universities around the

world. With a database of over half a billion nights of audio-based sleep data, it is a great and vast asset.

"We spend an average of 8 hours per day with our users and we are constantly getting better at analyzing data and developing new features founded on AI-based analysis. In addition to sleep tracking and analysis, we are currently investing heavily in the development of functions linked to snoring and coughing. The results we saw from comparing coughs with Omicron outbreaks speaks to the strength of our data. In the future, we foresee launching features that can indicate to our users whether they are showing early stages of, for example, colds or diseases linked to conditions such as snoring, says Carl Johan Hederoth, CEO of Sleep Cycle.

\*Kuhlman C, et al. (2022). Breakthrough infection with SARS-CoV-2 Omicron variant despite booster dose of mRNA vaccine. SSRN. Retrieved from: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3981711](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3981711), 29 april, 2022

For more information on Sleep Cycle, please go to: <http://www.sleepcycle.com>.

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### **About Sleep Cycle**

With millions of active users and over 400 million nights analyzed in more than 150 countries, Sleep Cycle is the leading sleep tracker application and one of the most widely used solutions worldwide to improve sleep health. Sleep Cycle's mission is to improve global health by empowering people to sleep better. Since its launch in 2009, Sleep Cycle has helped millions of people understand their sleeping habits and improve their sleep. Sleep Cycle is one of the world's most comprehensive sources for statistics, frequently contributing to sleep research by collaborating with renowned universities and research facilities worldwide. Sleep Cycle is regularly featured in notable media outlets covering the product and the company's released Sleep reports. Sleep Cycle (<https://www.sleepcycle.com>) is listed on Nasdaq Stockholm under the ticker SLEEP. The head office is located in Gothenburg, Sweden.

