

Sleep Number Presents New Data from Its 360® Smart Beds at SLEEP 2021 Annual Meeting

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Real-world data from Sleep Number® smart bed sleepers shows a potential model for predicting and tracking COVID-19 infection using sleep and biometric measures.

Analysis of 18.2 million 360 smart bed sleep sessions finds heart rate variability differs with age, gender and day of the week.

MINNEAPOLIS--(BUSINESS WIRE)-- Today, **Sleep Number Corporation** (Nasdaq: SNBR), a leader in sleep health, innovation, science and research, presented data as posters from two new studies using its 360® smart bed at SLEEP 2021, the 35th annual meeting of the Associated Professional Sleep Societies, LLC from June 10 to 13. Data presented at the meeting show results of a predictive model of COVID-19 infection based on sleep metrics and results from a large study analyzing overnight heart rate variability (HRV), providing further evidence for the benefits of the 360 smart bed and SleepIQ® technology as potential devices for evaluating population health. The award-winning 360 smart bed and its operating system, SleepIQ technology, deliver individualized sleep health evaluations and outcomes by automatically sensing and effortlessly responding to the needs of sleepers, requiring nothing for the sleeper to wear or do. The 360 smart bed effortlessly adjusts throughout the night, digitally sensing each sleeper's movements and automatically adjusting the firmness to keep both sleepers comfortable. SleepIQ technology is embedded in every 360 smart bed.

This press release features multimedia. View the full release here:

<https://www.businesswire.com/news/home/20210609005533/en/>

Sleep Number data presented at SLEEP 2021 showed COVID-19 symptom worsening is associated with a significant increase in sleep duration, respiration rate, heart rate, restful

“The research findings from these two new studies,

time, and motion, and a decrease in sleep quality. This symptom progression model was built to predict the probability of symptoms onset and duration. Some probability peaks predate the COVID-19 pandemic, suggesting that our model system can detect respiratory illnesses that are not caused by SARS-CoV-2, such as influenza. (Graphic: Business Wire)

presented at SLEEP 2021, add to the growing body of scientific research from our Sleep Number 360 smart bed,” said Annie Bloomquist, Chief

Innovation Officer, Sleep Number. “The 360 smart bed is an innovative device that offers proven quality sleep, an accurate, longitudinal data collection platform and the ability to understand real-world sleep behaviors. These data and insights are informing the development of meaningful sleep solutions.”

Longitudinal, unobtrusive, and ecologically valid sleep metric estimation from a smart bed to predict the pathology of COVID-19 (Congress Abstract ID: 651)

Viral respiratory illnesses such as COVID-19 may impact sleep duration, quality, and cardiorespiratory function. An analysis of real-world data collected from COVID-19 positive (n=122) and negative (n=1,603) 360 smart bed sleepers was conducted to build a predictive COVID-19 model based on unobtrusive sleep metrics. Sleep duration, sleep quality, restful sleep duration, time to fall asleep, respiration rate, heart rate and motion level obtained from ballistocardiography data from January 2019 to October 2020 were measured in the analysis.

In the COVID-19 positive group, worsening of symptoms was associated with an increase in sleep duration, average breathing rate, average heart rate and a decrease in sleep quality. For those in the COVID-19 negative group, no significant disruptions in sleep and cardiorespiratory metrics were observed. The evaluation of the predictive model resulted in cross-validated area under the receiving-operator curve (AUC) estimate of 0.84 ± 0.09 , similar to values reported in wearable sensors. The closer an AUC value comes to 1.0, the more accurate the model becomes. When the data set was expanded beyond the initial self-reported dates of symptom onset in the COVID-19 positive group, the AUC estimate improved to 0.93 ± 0.05 .

To our knowledge, this is the first study to evaluate real-world, longitudinal data collected unobtrusively and non-invasively during sleep, using a smart bed platform. The sleep metrics measured with the 360 smart bed are a unique source of long-term health data with the demonstrated potential to predict and track the development of symptoms associated with COVID-19 and likely other respiratory disease. Sleep Number is working on expanding these capabilities to detect symptoms for illnesses such as the common cold, Influenza and SARS.

Overnight heart rate variability depends on age, gender, and day of the week: a field observation using the 360 smart bed platform (Congress Abstract ID: 249)

HRV, the variation in time between heartbeats, is commonly used to assess the activity of the autonomic nervous system (ANS), which unconsciously regulates certain essential bodily functions including breathing, heart rate,

blood pressure and others. Changes to ANS function, reflected in HRV, can result from factors including lifestyle, aging, cardiorespiratory illnesses, sleep state and physiological stress. HRV is lower under situations of stress, either emotional or physical, and is higher in relaxed states. While there is broad interest in researching HRV, few studies to date have established normative overnight HRV values for a large population.

An analysis of overnight standard deviations in normal-to-normal (SDNN) heartbeat intervals from 18.2 million sleep sessions from 379,225 Sleep Number 360® smart bed sleepers was conducted to better understand population-level HRV changes. Higher SDNN numbers generally correlate with better health and cardiac response to stress, and lower SDNN numbers are an indicator of unhealthy cardiac activity. Results of the analysis found significant cross-sectional associations between overnight SDNN and age, gender and day of the week. For sleepers under 50 years old, SDNN declined at a rate of about 2.1 milliseconds/year, then leveled off for sleepers aged 50-65, and increased slightly thereafter. Women under 50 showed lower, more slowly declining SDNN values than men, but this trend reversed for sleepers over 50. Additionally, SDNN values were generally highest over the weekend and lowest at mid-week. SDNN values for women followed a U-shaped pattern, starting high in the beginning of the week, dipping mid-week, then increasing through the weekend, whereas values for men followed an L-shaped pattern, starting high in the beginning of the week, but quickly fell and stayed low through the week.

These results show measuring overnight SDNN data using the 360 smart bed may be a useful, ecologically valid device for evaluating population health models reliant on heart rate variability.

To view our posters and learn more about our innovations in sleep health, science and research, visit: www.sleepnumber.com/science.

About Sleep Number

Individuality is the foundation of Sleep Number. Our purpose driven company is comprised of over 5,000 passionate team members who are dedicated to our mission of improving lives by individualizing sleep experiences. We have improved over 13 million lives and are positively impacting society's wellbeing through higher quality sleep.

Our award-winning 360® smart beds are informed by science. They learn from over one billion sleep sessions of highly-accurate, real world sleep data – the cumulation of 10 billion hours' worth - to automatically adjust to each sleeper and provide effortless comfort and proven quality sleep. Our 360 smart beds deliver individualized sleep health reports and insights, including a daily SleepIQ® score, and are helping to advance meaningful sleep health solutions by applying sleep science and research.

For life-changing sleep, visit SleepNumber.com or one of our approximately 600 Sleep Number® stores. More

information is available on our **newsroom** and **investor relations** sites.

Forward-looking Statements

Statements used in this news release relating to future plans, events or performance such as plans to expand our capabilities to detect symptoms for illnesses such as the common cold, Influenza and SARS and references to developing a potential model for predicting and tracking COVID-19 infection using sleep and biometric measures are forward-looking statements subject to certain risks and uncertainties. Additional information concerning these and other risks and uncertainties is contained in the company's filings with the Securities and Exchange Commission (SEC), including the Annual Report on Form 10-K, and other periodic reports filed with the SEC. The company has no obligation to publicly update or revise any of the forward-looking statements in this news release.

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