Better Sleep Hygiene Can Save Lives

Find out more about how researchers are uncovering the relationship between poor sleep and health conditions.

AUSTIN, TEXAS, UNITED STATES, December 21, 2022 / EINPresswire.com/ -- Inside The World Of Sleep Research – How Do Sleep Research Laboratories Conduct Their Studies?

Sleep researchers are trying to understand our growing problem with sleep – and the health implications of being sleep-deprived.

But it's a challenge because a significant number of us have more than one sleep condition (such as insomnia combined with restless leg syndrome or sleep apnea).

This makes it more difficult to identify whether any related health conditions (comorbidities) are causing sleep problems or the other way around.

To better understand what's going on, sleep researchers historically relied on written sleep logs, where patients self-reported the quality of their sleep. However, thanks to the widespread availability of smart wearable devices (such as an Apple Watch) with built-in accelerometers (or actigraphs as they are known in sleep lab circles) can measure the quality of sleep directly, including sleep latency (the time needed to fall asleep) and sleep disturbances.

As smart wearable devices proliferate, researchers can tap into larger actigraphy data sets to identify large trends.

But when it comes to understanding sleep issues for an individual, there is still the classic sleep lab setup where patients spend the night while lab technicians measure the patient's brain activity during sleep through sensors attached to the head and body. This approach, known as Polysomnography, or PSG, is more accurate, allowing researchers to measure real-time electrical

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activity in the brain, breathing rates, heart activity, as well as limb and eye movements.

But this PSG approach does have shortcomings.

There will always be a limit to the number of sleep lab beds available (due to cost constraints). Concerns also exist about whether patients present the same sleep behavior in a strange bed where they are wired up. However, as wearable devices (such as the Oura Ring, smart headbands, and earphones) become increasingly powerful and more widely available, sleep researchers are hoping to get more insight into the causes of sleep disorders and related health conditions.

Understanding The Purpose Of Deep Sleep – How Does It Help Protect The Brain?

Chronic sleep disorders can lead to serious health conditions, ranging from memory and learning problems, obesity, type 2 diabetes, and lowered mood states, to lower immune responses and reduced vaccine efficacy.

For healthy patients, productive sleep usually involves three to seven full cycles, each lasting between 90 and 110 minutes.

In each of these sleep cycles, we first "drift off" (NREM Stage 1), followed by a period with minimal eye movement and slower brain waves (NREM Stage 2), then we enter deep sleep, also known as slow wave sleep, where the brain wave activity slows the most, and the body performs many of its nightly recuperative processes (NREM Stage 3). To complete the sleep cycle, we begin to wake again as we enter REM sleep; this is where the muscles relax, the heart rate and blood pressure rise, and we experience the characteristic rapid, fluttering eye movements. This is when we often memorize and reprocess information as well as experience more intense dreams.

Shiftwork And Circadian Rhythms – How Much Sleep Do We Need And When?

On average, adults need between 7 and 7 ½ hours of sleep for optimal health – although the exact time needed varies by the individual (women need more than men, and older people less than younger adults). Sleep requirements can also vary depending upon whether you are wakeful in the mornings ("Larks") or prefer to go to bed late at night ("Owls").

Unfortunately, the demands of modern life often interrupt or cut short our natural sleep patterns, with many of us trying to get by with 6 hours of sleep or less – perhaps promising ourselves we will "catch up" on sleep over the weekend. Changing time zones (jet lag) and shift

work also interfere with our natural clock, the circadian rhythm.

Possible Connections Between Sleep Disorders And Conditions Such As Heart Disease

Sleep researchers are drawing a direct connection between sleep issues and cardiovascular disease, including hypertension (high blood pressure) and arrhythmias.

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Julia Solodovnikova
Formaspace
+1 800-251-1505
email us here
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