

SleepImage Keeps it Simple

With cardiopulmonary coupling (CPC) technology, the makers of SleepImage are reaching a diverse audience of clinicians and patients who want and need a better way to measure sleep quality.

When clinicians of various stripes are able to set aside turf wars and reimbursement concerns, it turns out that many want a simple, low-cost, and objective way to measure sleep quality. David Baker, president and CEO of SleepImage, knows this because he has talked to countless members of the medical community while traveling in the United States and beyond.

Enthusiasm among so-called “integrative docs” has been particularly high, with NDs, DCs, and other complementary practitioners embracing the notion that good sleep is critical to overall health. “They really understand what SleepImage can do for their patients,” says Baker, an engineer by trade who many know as the former CEO of Embla® Sleep Diagnostics. “These docs know that patients will pay for a test to look at overall sleep quality if it means validating the extent of their problem, which may or may not require a PSG or Home Sleep Test, which most of the time is really just a Home Apnea Test since they primarily focus on apnea.”

Many of these cash-savvy patients pay out of pocket because they want to find out what is “really wrong” with them. Thanks to a holistic perspective, integrative and even traditional docs are bringing sleep into the conversation because they increasingly view sleep as a vital sign of human health and now have a way to measure it simply and easily.

CPC Technology Drives Data

At the core of the diminutive SleepImage device is proprietary cardiopulmonary coupling (CPC) technology that measures sleep quality through breathing and heart rate patterns known to indicate stable, healthy sleep versus unstable, unhealthy sleep. During healthy sleep, the heartbeat and respiration have a very characteristic pattern and “couple” together giving a very clear “Image” of healthy sleep.

Unhealthy and unstable sleep is very evident on this Image, as the heart rate and respiratory rate are coupled with one another. SleepImage measures the coupling

and displays this information in a graph that gives clinicians a simple picture or image of patients’ sleep quality. The graph is essentially a data-driven scale called the Sleep Quality Index™ (SQI).

The first real clinical evaluation of SleepImage was done in 2005 by Robert Thomas, MD, MMSc, and fellow researchers at Beth Israel Deaconess Medical Center, a teaching school of Harvard University. Since then, numerous other studies have demonstrated the clinical validity of CPC.

The sheer volume of validation studies is made possible by the existing technologies that work well with CPC. “Because we are using ECG, a measure that is commonly used among many sleep labs, we can actually look at anonymous data from thousands of patients from partnering sleep labs,” explains Baker. “Running our algorithm through the existing data that sleep labs collected allows us to do far more research.”

In addition to the vast adult population that can readily use SleepImage, a pediatric doctor in Oklahoma is looking at using SleepImage on pediatric patients—including those with disabilities such as Down’s Syndrome. Its design is unobtrusive, making it an ideal choice for this patient population. “The science behind SleepImage is solid,” says Baker, “and it has a broad spectrum of application.”

Sleep Clinic or Apnea Lab?

David Baker believes that the much-hyped estimates of undiagnosed sleep apnea patients are real. Patients are out there, and they are suffering from more than just sleep apnea. And while SleepImage identifies apnea, it is more concerned with the overall picture that encompasses additional sleep-related disorders—as well as the business side of running a sleep lab.

Astute marketing of screening services to referral sources can potentially generate numerous additional patients. Identifying more patients who require full

PSG is one possible consequence of additional screening. Validating the necessity of re-titrating (post therapy) is yet another possibility. Ultimately, sleep lab administrators who seek to expand the pool of patients can partner with a wide range of sleep specialists for a multi-disciplinary approach.

As a crucial element of overall wellness, Baker and Kristen Hitner, Marketing Director at SleepImage, also believe that sleep quality can continue to work its way into corporate programs designed to foster healthier employees. “Occupational health is a growing trend,” says Hitner. “Fortune 500 companies are more and more interested in employee wellness programs, and we are going to target the companies that wish to test sleep as part of those programs.”

“Truck drivers get a lot of attention, but the reality is that with truck drivers it is usually only apnea that is being looked at,” adds Baker. “But proper sleep is not just about upper airway resistance. Everybody is going to sleep poorly for lots of different reasons. SleepImage is one of the only devices that actually measures whether or not a person is sleeping well—whether it was because of pain, apnea, or insomnia.”

“SleepImage will help identify sleep disruption, and most importantly help people manage it,” continues Baker. “A far better measure for any occupational health efforts, whether it’s a truck driver, ship’s captain, or airline pilot.”



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SleepImage in use



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