

New Sensor Technology

Sarah Bond
SLP Inc
St. Charles, IL
www.sleepsense.com

SLP continues its momentum with new sensor technology, an eye on the future, and sound advice for sleep labs looking to expand their market.

With the burgeoning awareness of sleep disorders has come a definitive need for physiological sensor equipment that can accurately measure conditions such as obstructive sleep apnea. With domestic headquarters in St Charles, Ill, and an international location in Israel, Scientific Laboratory Products (SLP) has gradually established a reputation for its innovative sensors, engineering, and technology.

Today, SleepSense products (a brand name of SLP) are distributed to sleep disorder centers worldwide, as well as to manufacturers of diagnostic systems for the recording of sleep studies. All SLP products are CE approved, FDA 510K approved, and the company is ISO 9001:2000 and ISO 13485:2003 certified. SLP is continuing to update the extensive SleepSense product line to include innovative sleep diagnostic sensor solutions at affordable prices.

SLP has released 4 new products that are durable and designed to help sleep labs comply with the new scoring guidelines. The SleepSense PTFlow sensor is a reusable thermal flow sensor that attaches to any brand of adult nasal cannula, allowing labs to comfortably test for pressure and thermal flow simultaneously. Two new pressure transducers were also released, both with adjustable snoring and flow components



PTFlow



AC Pressure/Snore Sensor.

to help labs test multiple channels comfortably for the patient. Another popular item released was the SleepSense Multi-RIP which is equipped with a SUM Channel. “The SleepSense RIP / Inductive system has the lowest startup cost available, and is now equipped with a SUM channel to combine chest and abdomen signals,” says Sarah Bond, **Director of Sales and Marketing for SLP Inc.** “With so many sensor solutions to meet the needs of sleep labs, and many more to come, SleepSense is helping sleep labs all around the world rest assured that their sleep studies will run smoothly.”

SLP sees the evolution of crucial sensor advances continuing to expand, with wireless and calibrated technology that could fundamentally change how data is collected. For our conversation with Sarah Bond, we asked about the influences that have shaped sensor technology, and what the future might bring.

HOW HAVE SENSORS EVOLVED AND WHAT WILL BE THE NEXT PHASE?

Sleep medicine is evolving at an unbelievable pace, and of course sensors have to keep up with increasing demands for accuracy, sensing modality, reliability, and cost. Take, for example, the effort sensors. They used to be simple piezo sensors, which are totally passive devices. Now the AASM dictates inductive sensors which are highly complex, very sensitive electronic systems. Continuing this trend, we believe the next phase may be either wireless sensors, or calibrated sensors which will eliminate the need for nasal flow sensors—or maybe even remote sensing of respiratory movement. The technologies are available, but they are still too expensive.

AMONG SLEEP LABS WHO USE YOUR PRODUCTS, WHAT IS THE BIGGEST MISCONCEPTION ABOUT SENSORS?

Sleep lab sensors are often regarded as “accessories,” and are generally selected based on price. As many sleep lab officials know, a good signal input is critical to a correct diagnosis, and although there is the ability to make adjustments to the way

the signal is processed, a bad signal or low quality sensor can have many negative effects on the accuracy of the study. High quality sensors that are comfortable for the patient help maintain the integrity of the study through a consistent high quality signal with little to no adjustments throughout the night. A high quality, durable sensor will ultimately save sleep labs money by having a low cost per use without interruptions throughout the night. SLP carries an extensive line of sensors at a very low cost per use and strives to continuously produce new and innovative solutions to ensure sleep labs receive the highest quality signal from our sensors that fit securely and comfortably on the patient.

HOW HAVE AASM GUIDELINES AFFECTED THE INDUSTRY OVER THE PAST FEW YEARS?

With regards to sensors, the AASM guidelines have recently recommended the use of certain sensor technologies for accredited sleep labs. Although these technologies are not necessarily new, such as inductance technology, it has inspired manufacturers of sensors to create innovative solutions which help labs meet these requirements with quality products at affordable prices. Inductive technology, for example is a more accurate way of testing respiratory effort, which delivers a higher quality signal with greater accuracy to diagnose patients.

SleepSense has had inductive technology available for years, and has perfected a cost effective system that is easy to use and provides a high quality signal. The guidelines have also inspired SLP to create products that add to patient comfort such as the new PTFLOW. The PTFLOW is a reusable thermal flow sensor that hooks directly onto any brand of nasal cannula. The design of this sensor provides optimal patient comfort because only the nasal cannula touches the patient. The sensor securely hangs on the cannula detecting thermal airflow throughout the night regardless of patient movement.

WE CONSTANTLY HEAR ABOUT LARGE NUMBERS OF UNDIAGNOSED PATIENTS. HOW CAN WE REACH THESE PEOPLE AND CONVINCING THEM TO GET TESTED?

Over the past several years, the general population has become even more aware of sleep apnea and the negative impact it has



Multi-Press AC/DC Pressure Transducer.



Multi-RIP SUM Module.

on their lifespan. We've seen sleep apnea mentioned in network television programs, movies, and countless articles. Now that there seems to be more awareness of sleep apnea and its effects, many labs have started to actively market their services to the general public, which has generated not only awareness but also interest in receiving a sleep study.

WHILE DIFFICULT TO PREDICT, HOW DO YOU THINK HEALTH CARE REFORM WILL AFFECT YOUR BUSINESS?

It's hopeful that the health care reform will give more uninsured patients insurance. There are many uninsured people in this country, a lot of which may have sleep apnea but can't afford the high costs for a sleep study. The reform could give people the insurance they need to get the treatments they deserve. SLP helps sleep labs diagnose sleep apnea by providing high quality sensors. With more of the public able to afford getting tested for sleep apnea, SLP will continue to help labs diagnose patients by providing innovative yet cost effective solutions for diagnostic sensors.

FOR SLEEP LAB DIRECTORS LOOKING TO GROW, WHAT ADVICE WOULD YOU OFFER?

Although there hasn't been a need to market directly to the public for some time because of physician referrals, labs that are starting to take an active stance to market directly to the public are receiving great results. The public is curious about sleep apnea and the effects it has on their lives. Becoming an information source for the community not only educates people on how severe sleep apnea can be; it creates community awareness of the facility and how it can help people. A lab that can market themselves as a community resource to people who show symptoms of sleep apnea has a great ability to generate continuous business throughout their community.