

WheezoMeter Takes the Guess Work Out of a Common Diagnosis

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Earlier this month, the U.S. Food and Drug Administration gave Australian/Israeli-based KarmelSonix Ltd. the nod to start marketing its WheezoMeter™, the handheld version of the company's PulmoTrack®, a computerized acoustic respiratory monitor used in health care settings to quantify wheeze and respiratory rates, including during sleep.

KarmelSonix Chief Marketing Officer and General Manager Noam Gavriely, M.D., tells DOTmed News that nothing else can do for asthma patients what the WheezoMeter™ can: measure one's "WheezeRATE™" a term defined by the company as the proportion of wheezing during a 30-second respiratory cycle. The technology is used by clinicians in Australia, Europe and Southeast Asia.

Gavriely, who treated asthmatics for 20-plus years in Illinois, says other devices on the market might detect "lung sounds but nothing has been totally focused on the asthma patient." This device operates using advanced signal processing algorithms that defend against false detection of ambient noise so it can deliver objective readings of wheeze presence and extent.

"Every doctor, every medical student, knows what a wheeze is but the quantitative aspect is new," says Gavriely. "This is a disease management tool that gives the clinician a new way of assessing the patient in ways that were not possible before," he says. "We could not quantify the [wheeze rate activity] before. It was virtually impossible."

Unlike standard lung functioning tests for asthmatics, such as spirometry, Gavriely says the WheezoMeter™, which also has an Auxiliary Infant Sensor, requires no patient effort. Plus, documenting and understanding a patient's WheezeRATE™, particularly before and after taking bronchodilator medications, allows health care providers to better evaluate and fine-tune treatment so they can help patients improve management.

The researchers of a 2008 study published in *Respiratory Care* on the technology's use in a pediatric intensive care unit in Massachusetts affirm, "Given the noisy PICU environment and clinicians' different abilities to detect and quantify wheeze, a computerized respiratory sound monitor could provide continuous noninvasive wheeze assessment, independent of staff." And that "The

PulmoTrack was better than the staff at detecting wheeze."

In September of this year, KarmelSonix also surveyed respiratory therapists, hospital managers and other clinicians in California, before FDA approval of the WheezoMeter™, and found that the majority of them expressed significant interest in using the tool as a regular part of their asthma-patient care strategy.

"The minute we got FDA approval, we started to get requests for orders," says Gavriely, adding that physicians, nurses, paramedics, technicians and other health care professionals will be the first to use the WheezoMeter™ on asthmatic patients.

Gavriely says the device should become available for home use next year, via prescription, and later purchased over the counter, "like a glucometer or blood pressure monitor."

KarmelSonix believes the handheld tool is not only an "excellent quality control measure" but that it could also prove to be a significant money-saver.

"Not being able to make an accurate and viable diagnosis is very costly," says Gavriely, noting that the average cost of asthma prescription medications per patient costs around \$1,600 a year.

According to an American Lung Association 2009 report, asthma ranks as one of the country's top 10 prevalent conditions that limit activity and it costs billions to treat. "Prescription drugs represent the largest single direct medical expenditure, at \$6.2 billion," the report states.

"[This technology] is a milestone for us and, hopefully, a new paradigm in asthma management."