

# News from Kaiser Permanente



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## **Innovative Sleep Shirt Brings Pediatric Sleep Studies Home for Patients** *Kaiser Permanente first in Colorado to use Vivometrics® LifeShirt® System*

**Denver** – An innovative approach to helping diagnose a child’s sleep problem is keeping patients home for these important tests rather than having them spend an anxious night at a sleep lab. Kaiser Permanente is the first health organization in Colorado to use the Vivometrics LifeShirt, the first non-invasive, ambulatory monitoring system that continuously collects, records and analyzes a broad range of cardiopulmonary parameters that will help physicians determine the need for surgery.

“Children can sleep peacefully in the comfort of their own beds, avoiding the unfamiliar surroundings of a sleep lab, said Neil Mills, coordinator of Kaiser Permanente’s sleep apnea clinic. “We get more accurate test results while the patients enjoy the freedom of movement in the safety and privacy of their own home.”

Before the use of the LifeShirt, children and adults undergoing a sleep study were required to travel to a sleep lab, be confined to a bed, be wired with numerous devices and be observed by a technician while they slept. The LifeShirt is a patient-friendly, fully mobile system that allows patients to remain home and sleep, while the uniquely designed LifeShirt gathers object information on obstructive sleep apnea that can help determine whether or not a child needs a tonsillectomy or adenoidectomy.

“Kaiser Permanente Colorado is providing state-of-the-art health care services for children,” said Douglas Studebaker, Senior Vice President Academic Research for Vivometrics. “Working together Kaiser Permanente and Vivometrics deliver a solution that improves both the patient experience and the quality of care.”

Users wear a lightweight, machine garment with embedded sensors that collect pulmonary, cardiac, posture and activity signals. Data collected by integrated peripheral devices measure blood pressure, blood oxygen saturation, periodic leg movement, temperature, cough and other parameters. An electronic diary captures subjective user input and all physiologic and subject data are correlated over time. The LifeShirt has received clearance by the Food and Drug Administration (FDA) and the European Agency for the Evaluation of Medicinal Products (EMEA).

Kaiser Permanente is a non-profit health plan and the largest private health care provider in Colorado. For the second year in a row, the National Committee for Quality Assurance has rated Kaiser Permanente among the top ten health care organizations in the country for clinical quality. Kaiser Permanente cares for more than 417,000 members in the Denver/Boulder and Colorado Springs areas. Kaiser Permanente physicians and care teams focus on prevention as well as curing disease, all in an effort to help patients live well and thrive.

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VivoMetrics, founded in 1999, provides ambulatory monitoring products and services for the collection, analysis and reporting of subject-specific physiologic data. Pharmaceutical companies use VivoMetrics' technologies to improve the speed and economics of clinical research. The company's offerings also enable academic researchers to discover new clinical signatures of disease, and U.S. Government agencies to protect the lives of military and civilian first responders.