



VIVONOETICS

Vivonoetics is a physiological data monitoring company offering VivoSense®. The leading choice for researchers in physiological monitoring and analysis software for body-worn sensor systems.

VIVOSENSE®

1. IMPORT: VivoSense® supports most commercially available sensors and file formats. VivoSense® also allows customized imports for novel data formats.



2. INTEGRATE: VivoSense® provides tools to synchronize and merge data from multiple sensor sources into a single analyzable VivoSense® file.



3. ANALYZE: VivoSense® includes built-in algorithms to generate over 100 published and validated algorithms. Users may also include their own analysis or published algorithms in VivoSense®.



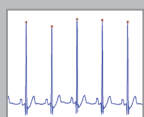
6. SHARE: Researchers use VivoSense® as a robust commercial platform to share results and tools with their collaborative partners.



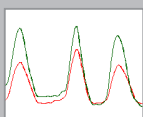
5. DISCOVER: The VivoSense® framework allows users to discover and generate new indices of physiological states.



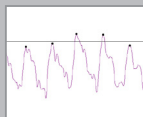
4. VISUALIZE: VivoSense® provides intuitive visualization of multiple time synchronized data channels.



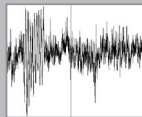
ECG/HRV



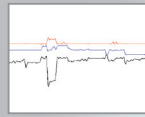
RESPIRATION



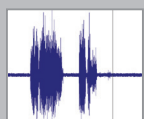
PPG



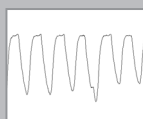
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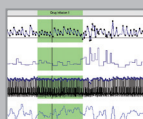
ACTIGRAPHY



EMG



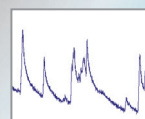
BLOOD
PRESSURE



DIARY
EVENTS



AUDIO



GSR

CASE STUDIES

Vivonoetics provides affordable software customization services to create and implement new algorithms and functionality in VivoSense®.

STUDY 1: IMPORT, SYNCHRONIZATION AND MERGE

A Vivonoetics customer requested **analysis** of respiratory inductance plethysmography data alongside spirometric data, captured simultaneously with separate sensor systems. VivoSense® was used to **import** this data and intelligently **synchronize and merge** the separate sensor data into a single file. Spirometry data was then used to accurately calibrate the plethysmographic signals to study exercise induced breathlessness in COPD subjects.

STUDY 2: COMPLEX RESPIRATORY ANALYSIS, VISUALIZATION AND DISCOVERY

A Vivonoetics customer investigating non-invasive diagnosis of infant asthma measured respiratory signals and used VivoSense® Complex Respiratory Analysis

Module to **analyze and visualize** a variety of VivoSense® generated respiratory metrics. Subsequent statistical analysis was used to **discover** that measures of phase relationship showed promise in objective identification of airway limitation in this population.

STUDY 3: HEART RATE VARIABILITY PHYSIOMETRICS

A Vivonoetics customer developing a “guilty knowledge” test using wearable heart rate monitors implemented the Heart Rate Variability Module in VivoSense® to reliably remove artifact from the measured data. The data was used to **derive** a series of indices representing autonomic tone.

STUDY 4: DISCOVERY, CLASSIFICATION AND SHARING

A Vivonoetics customer interested in developing a novel **index** of acute stress recorded several

time **synchronized** physiological channels. The VivoSense® Classification module was used to identify relevant VivoSense® metrics and intelligently combine these to develop a single new **index**. VivoSense® was used to **share** this index with research partners to reliably reproduce and test this **discovery** in their own studies.

