Autonomous Human Lung Simulators

real-time artificial intelligence

LUSI

TESTCHEST®

Autonomous human lung simulators- real-time artificial intelligence for high quality respiratory therapy training and education.

- Clinical training on mechanical ventilation for hospitals, simulation centres, universities
- Design support and testing of respiratory devices for manufacturers, test-houses, biomedical engineering
- Quality assurance for hospitals and manufacturers of respiratory care devices

Autonomous human lung simulators allow to accurately follow the actions of the ventilator and gain an understanding of the dynamics of closed loop control as if there was a patient - but without harming a patient.

Autonomous human lung simulators allow clinicians to expose the workings of their intensive care ventilators and respiratory support devices - and to improve the management of patients.

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neosim

Models based on scientific literature, for example Latzin et.al. Lung Volume, Breathing Pattern and Ventilation Inhomogeneity in Preterm and Term Infants. PLoS One 2009:4/2 e4635

LuSi is loaded with sensors to enable the physiological response that make it so unique

Wireless operation makes LuSi completely tetherless and independent for hours of operation

Autonomous lung simulator to train clinicians in the assessment of pulmonary function and the application of respiratory therapy without risk to patients:

- application of NCPAP
- high-flow oxygen therapy
- invasive ventilation
- high-frequency ventilation
- effects of surfactant therapy
- interpretation of ventilator data
- ventilator alarm setting
- interpretation of vital signs

LuSi responds to treatment without operator intervention and can simulate pathologies like RDS, lung collapse, weak muscular activity, pneumothorax, airway obstruction, etc.

LuSi responds to lung recruitment strategies

TESTCHEST®

Respiratory Flight Simulator for Intensivists

Autonomous Human Lung Simulator for Pediatrics & Adults

TestChest consists of two bellows driven by a linear motor; alveolar pressure, airway pressure and ambient pressure sensors as well as a temperature sensor, oxygen measurement and volume measurement drive real-time outcome measures like SpO2 and etCO2 driven by treatment.

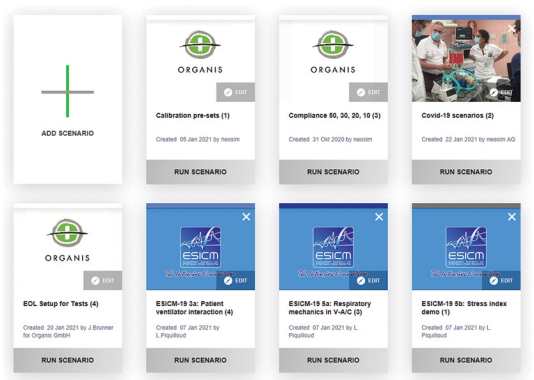
Intuitive
The high-end lung simulator is an easy tool to use for training on ventilation management. It supports any kind of artificial respiration in anesthesia, intensive care, emergency medicine and home care.

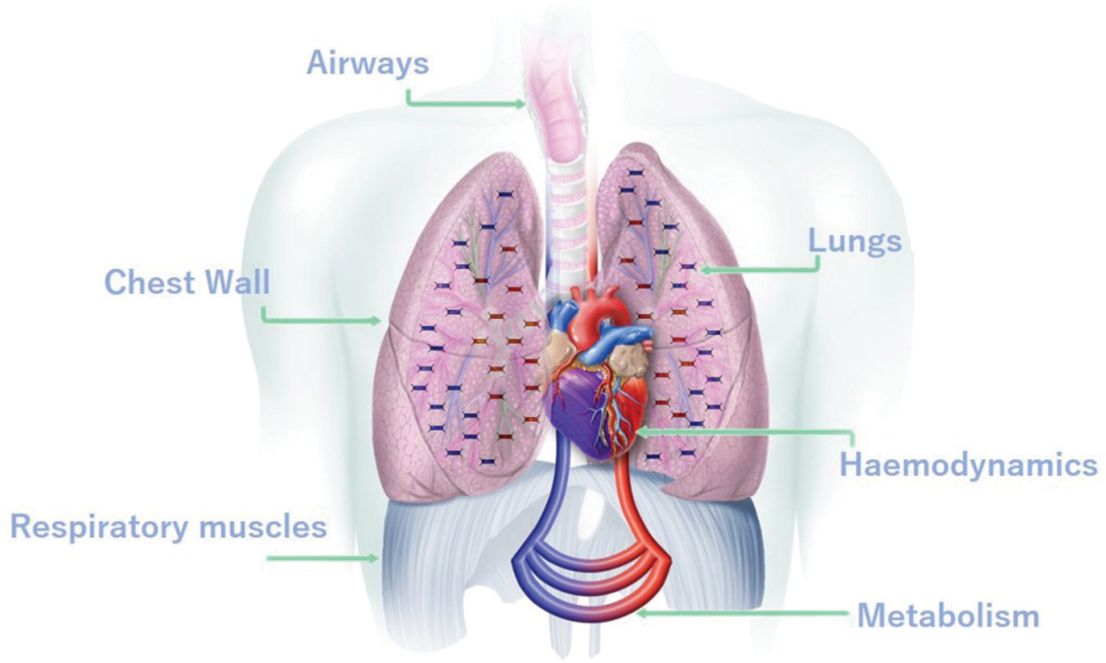
Realistic
TestChest® combines the simplicity of a physical model with the sophistication of advanced mathematical modelling to provide a complete solution for a real patient's conditions. TestChest® is capable of replicating pulmonary mechanics, gas exchange and hemodynamic responses of healthy and pathological adult.

Self-contained
TestChest® dimensions fit on any bed and it is fully self-contained. It is a stand-alone skill training station and can be easily connected with an intubation head. The latter adds more realistic features to the respiratory simulation (NIV, intubation).

Programmable
TestChest® is programmable and can be remotely operated to simulate in an unprecedented way the evolution of diseases as well as the recovery process. It allows the operator to control respiratory rate and depth to simulate complex breathing patterns and thus allows the evaluation of specific pathological alterations.

Active Learning
TestChest® is the key to modern learning concepts like Problem Based Learning. It facilitates active application of learning concepts of care and promotes a deeper assimilation in a controlled environment.





Algorithms are based on actual human physiology.

Simulator responds autonomously to interventions made.

Works with actual ventilation devices, both non-invasive & invasive, any make, any mode.

TECHNICAL SUPPORT: available through your distribution and service partner or directly from neosim.
REPAIR: neosim offers repair services and parts.
About neosim: we are dedicated to create the most realistic lung simulators. neosim is family owned and operated.
OTHER PRODUCTS: neosim is authorized distributor of TestChest, the leading lung simulator for adults.

REQUEST A QUOTE BY EMAIL:

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neosim

Swiss Made

CE marked

Approved wirless operation