



neonatal lung simulator, autonomous, high-fidelity
in the body of a 2500g silicone baby

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



LuSiLIFE is a touch-screen enabled, case building and execution program for LuSi

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

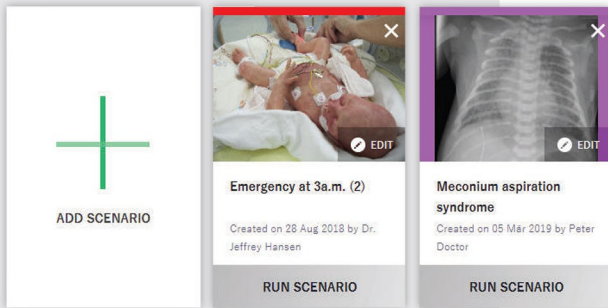
The design and selection of pathologies is controlled by LuSiLIFE, a touch-screen enabled, pathology building and execution program. Execution of pre-assembled cases, loading of patient case libraries, on-the-fly changes, notes-taking and complete data recording for later analysis.

LuSiLIFE provides scenario execution and design in one single package.

- MANAGE your scenario library
- RUN scenarios and store results
- EDIT cases and test them
- Show VITAL SIGNS in real-time
- CALIBRATE facility

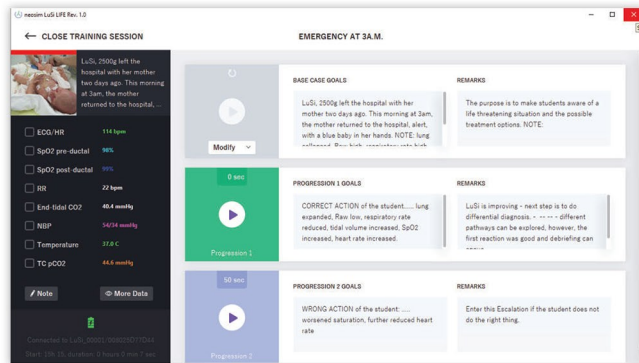
LuSiLIFE runs on any Windows based system and enables one-click execution of pre-assembled cases and scenarios





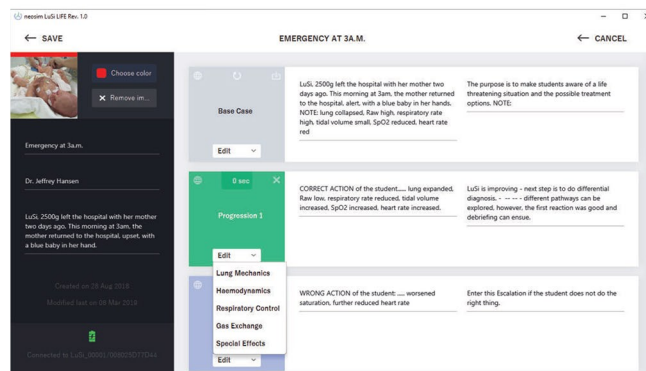
Scenario library manager to edit, run and add scenarios. Add pictures and colors for easy selection and recognition.

RUN SCENARIO mode to execute pre-set cases with one-click launch simulations from base-case through progressions and escalations



Start with the Base Case. Since LuSi responds to treatment, vital signs will change autonomously. Enable vital signs the learner measures to see the effect of treatment. Hide vital signs the learner does not measure to create suspense. Change parameters on the fly to adapt to certain situations.

EDIT mode to design and test cases, create and maintain your own patient library and test your scenarios before execution



Use the Edit drop down menu to access all parameters for

- Lung Mechanics
- Haemodynamics
- Respiratory Control
- Gas Exchange
- Special Effects.



More than 60 parameters govern the physiology of LuSi. Physiological gas exchange models can be made automatic or operator-determined.



Use the Vital Signs Monitor window to display the results of treatment in real-time.

Configure the monitor to match the device of your unit. Modify technical features of monitors, for example the rise time of capnometers, to teach potential and limitations for use in neonates.

LuSi is completely independent of any external control and reacts to therapy without operator intervention.

LuSi can be used in the hospital setting or out-of-hospital in any training facility because it does not need CO2 gas nor actual monitoring equipment. The vital signs parameters are calculated based on actually measured values such as pressure, flow and volume plus case-specific pathology like dead space, CO2 production and lung compliance.

LuSi comes plug-and-play including the baby, build-in re-chargeable batteries, battery charger, storage bag, technical support material and the PC based case-building and execution software LuSiLIFE with integrated vital signs display. Optionally, any size external monitor can be added to display vital signs.



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