

# Lusi™

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



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MADE IN SWITZERLAND

[www.neosim.ch](http://www.neosim.ch)





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  
lung  
recruitment  
strategies

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.

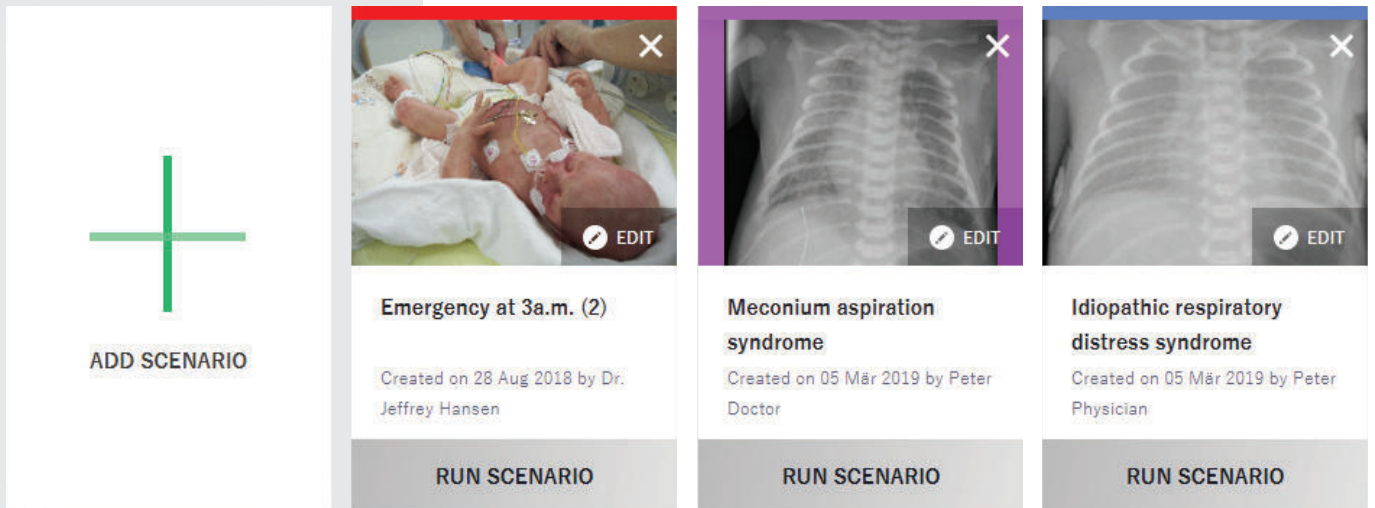
- MANAGE your scenario library
- RUN scenarios and store results
- EDIT cases and test them
- Show VITAL SIGNS in real-time
- CALIBRATE facility

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

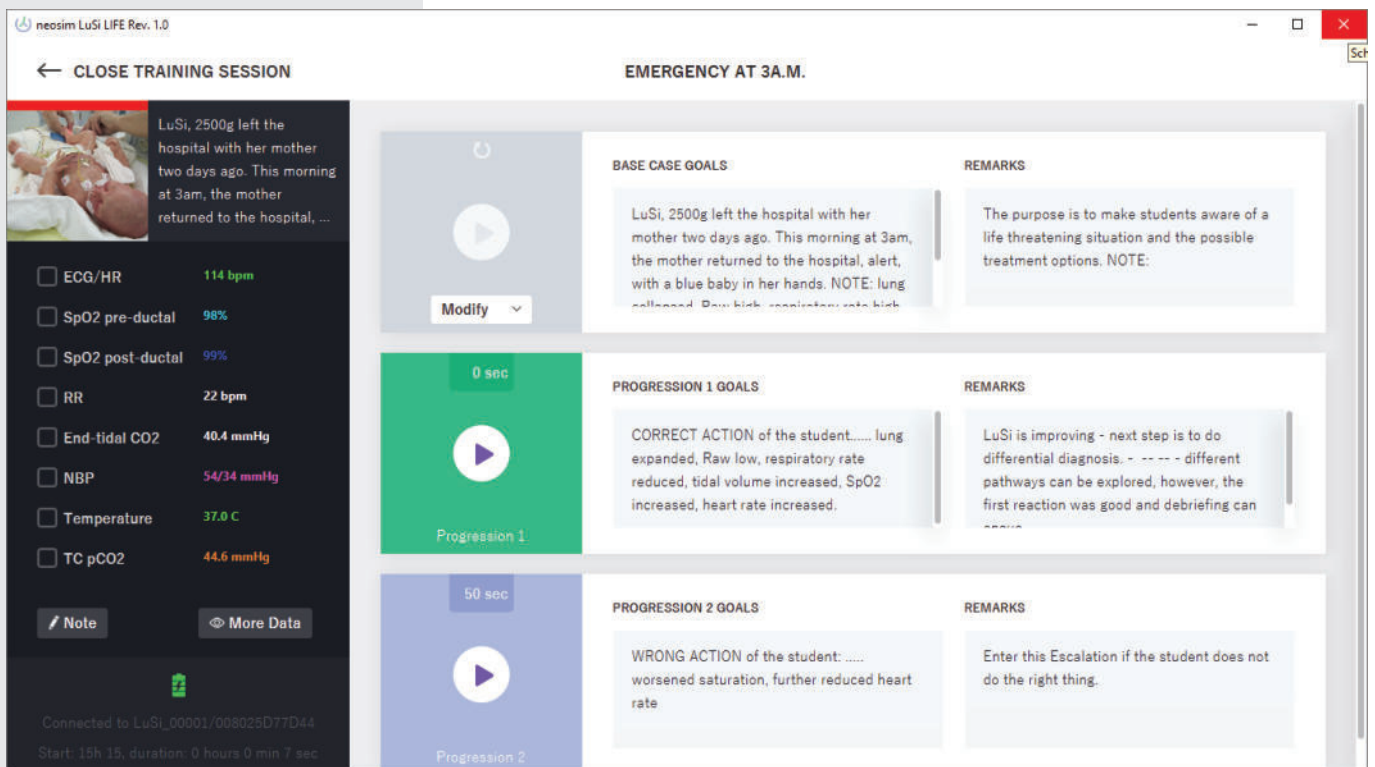


LuSi is  
autonomous





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

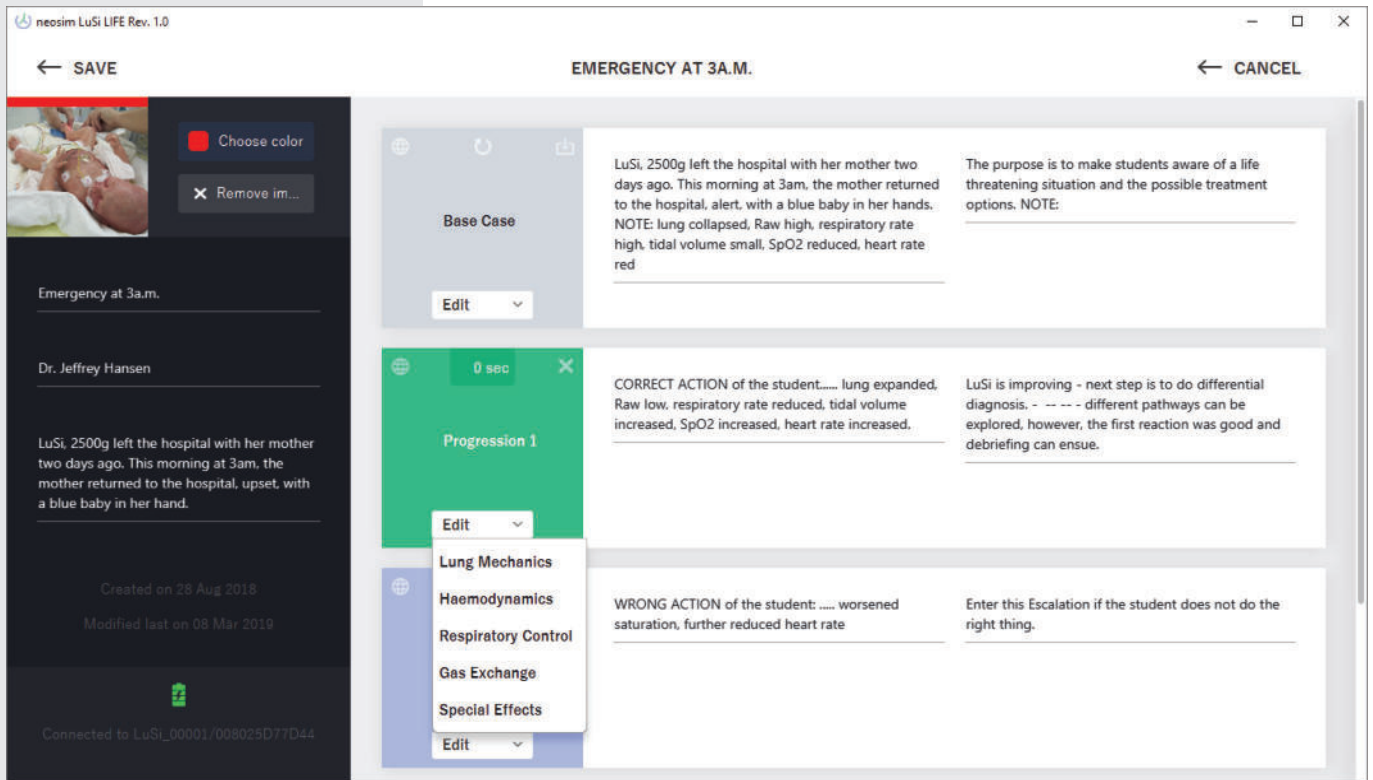


RUN SCENARIO mode to execute pre-set cases with one-click launch simulations from base-case through progressions and escalations

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.



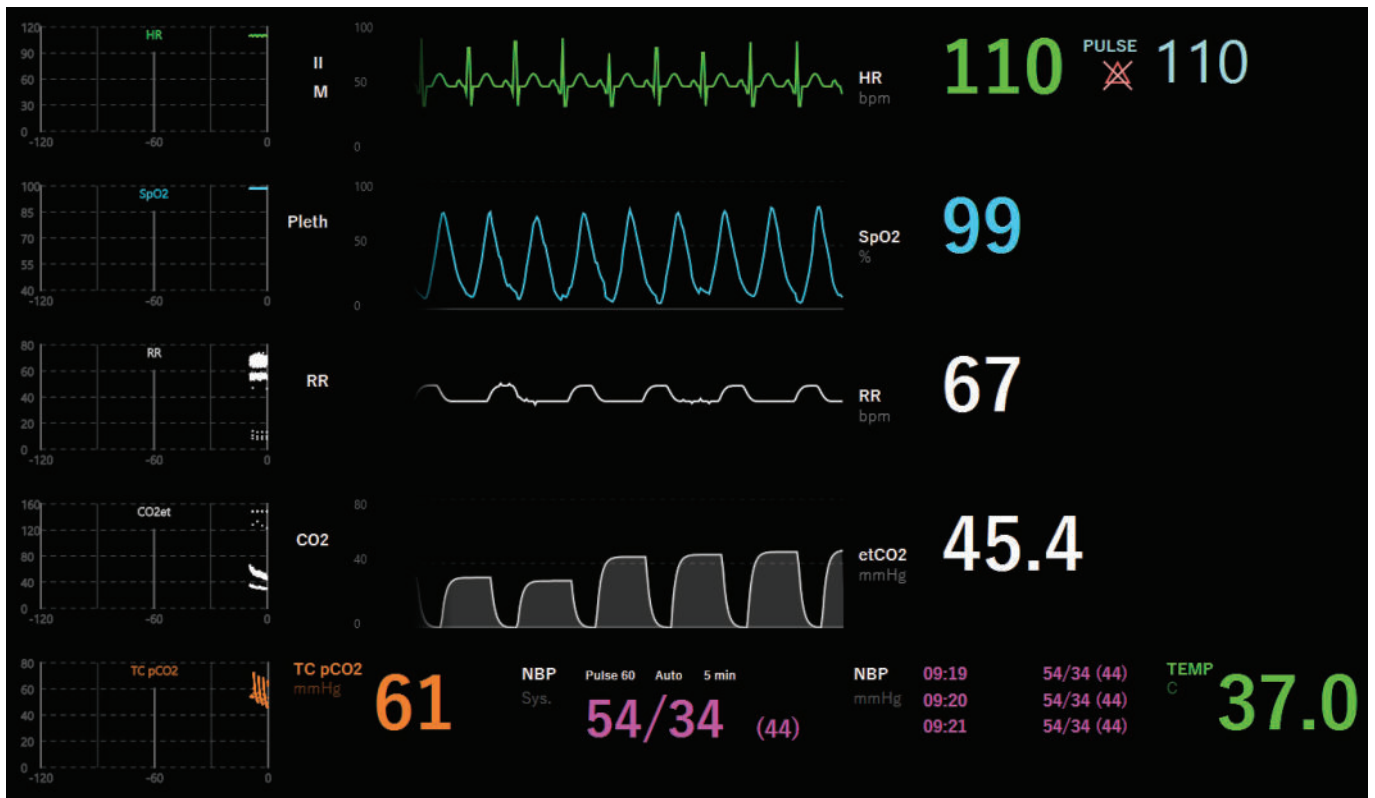
EDIT mode to design and test cases, create and maintain your own patient library and test your scenarios before execution

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 CO<sub>2</sub> 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, CO<sub>2</sub> 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.

## 1001

LuSi neonatal autonomous physiological lung simulator, consisting of

- LuSi baby, the neonatal lung simulator in the artfully painted body of a 2500g, 51cm long baby, born at GA36 weeks
- Realistic face to connect to nCPAP, high-flow oxygen or invasive ventilation (intubation)
- Teatherless, bluetooth control, battery operated (rechargeable)
- 8 NiMH batteries built into the baby body, 8.4V, 2Ah, 16.8Wh
- Battery charger, 100-240V, 50/60Hz, 18V, 2.2A, Energy efficiency Level VI
- Convenient and robust storage case
- Adjustable FRC, Crs, Raw, lung collapse, lung recruitment
- Upper and lower inflection points
- Fully programmable spontaneous breathing, inspiratory pressure, timing, waveforms
- Integrated programmable physiological model to create response to treatment
- Technical support software built into LuSi
- Operator's manual
- Pre-configured patient case library
- 1 year limited warranty

## 1002

LuSiLIFE Basic Plus: case and scenario building and execution software, comprising

- MS Windows based scenario editor
- Patient case editor with real-time exploration capability
- Simulation scenario execution with full on-the-fly control of parameters
- Configurable vital signs monitor with numeric data and trend curves
- Calibration tool for quality assurance and control

LuSiLIFE Advanced: advanced case building and execution software, comprising

- Pre-ductal SpO<sub>2</sub>, post-ductal SpO<sub>2</sub>, plethysmogram real-time curve
- ECG real-time curve and heart rate with trend
- Blood pressures, sys, dia, mean NIBP
- Real-time capnograms with end tidal CO<sub>2</sub> with trend plus transcutaneous PCO<sub>2</sub>
- Respiratory impedance real-time monitor with respiratory rate
- Body temperature display
- Wireless display adapter

## OPTIONS

- LuSi on-site installation and training
- Extended warranty
- Mail-in service and repair option
- LuSi IT bundle: LuSiLIFE pre-installed on Lap-Top computer plus on-site installation

Pre-configured patient library based on Donoghue V: The neonatal chest. Paediatrics Today 2016;12 (1):16-29

REQUEST A QUOTE BY E-MAIL:  
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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. LuSi is a trademark of neosim AG. Copyright neosim AG. Specifications are subject to change without notice.



Swiss Made



CE marked



Approved wireless operation