

# NENASim HPS Xtreme

SIMULATOR FOR NEONATAL TRAINING

## NENASim HPS Xtreme

The NENA-product line is composed of the ALS, the BLS Task Trainer, the HPS, the Neonatal and the Preemie. This brochure is on the Human Patient Simulator Xtreme, the HPS Xtreme.

### NENASim Human Patient Simulator Xtreme

The NENASim-HPS Xtreme is an advanced wireless scenario-based simulator. It simulates a baby from 0 to 6 months old. To be used for a full range of medical skills, procedures and team training. With the NENASim-HPS Xtreme - which includes our training software, the patient monitor and the baby simulator - predefined and customizable scenarios can be played out by medical teams.

### Design philosophy: realism in form and function

Realism is key in our design philosophy. Simulator training gives medical teams the experience, competence and confidence they desire. Realism adds to the quality and effectivity of training. Our NENASim is developed through extensive feedback programs to produce an engaging baby patient experience for medical professionals. Form and function come together in a realistic, interactive simulator, ready to be used in training for all levels of care.

### Simulator training

We can provide additional training modules for the medical departments and skills centers, both in-house and in training locations around the world.

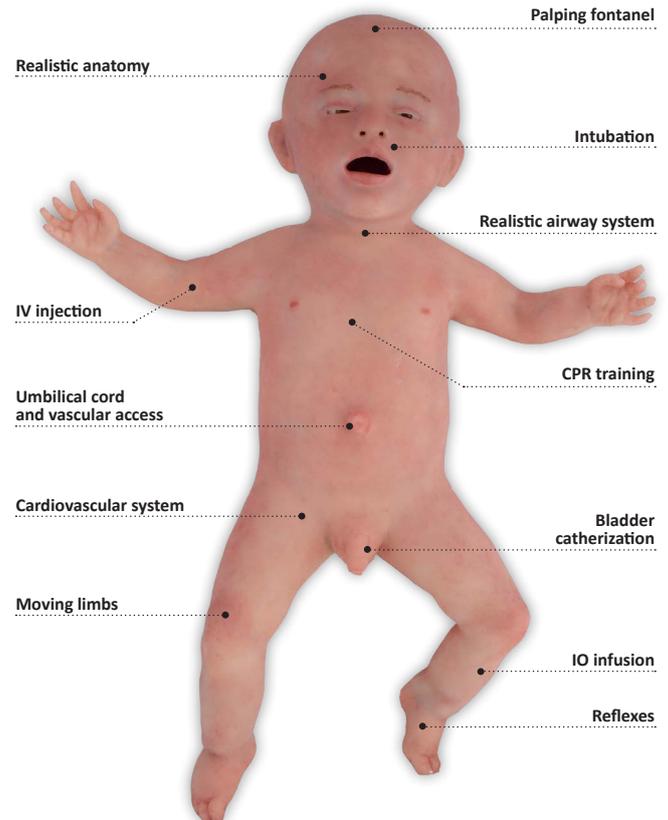
### Software included: Tutor, Scenario Editor, Patient Monitor, ECG and Sound Editor.

The NENASim HPS Xtreme is fully interactive and empowered by Windows to give the user full control:

- ▶ The patient monitor, which accurately replicates the graphs and values as shown on the tutor software, making any adjustments by the tutor directly visible.
- ▶ Tutor software for tracking, commenting and evaluating the full scenario.
- ▶ Possible to add three cameras.
- ▶ Scenario-editor for creating and editing your own scenarios. All parameters, responses and sequences can be adjusted within an easy-to-use program
- ▶ An ECG editor and sound editor. To add your own ECGs and sounds to scenarios we provide user-friendly editors.

"Training with the NENASim is the closest you can get to training with a real baby"

- Prof. Dr. Irwin K.M. Reiss,  
Erasmus MC, University Medical  
Center Rotterdam, The Netherlands



## BENEFITS AT A GLANCE

- ▶ Perfect for training medical professionals, especially NICU-departments.
- ▶ Realistic skeleton, recognizable landmarks, accurate movement degrees, with a durable soft skin.
- ▶ Movement of limbs, head, eyelids, heart beats and breathing movements.
- ▶ Measurable effectivity and results of CPR.
- ▶ Pulse detectable in various places; axillary and femoral.
- ▶ Intubation through the anatomically realistic airway, Stethoscope simulator: detects location and emits suitable isolated sounds.
- ▶ Various parameters output on the patient monitor: ECGs, SpO<sub>2</sub>, CO<sub>2</sub>, ABP, CVP, PAP, PCWP, NIBP and TOF.
- ▶ Full scenario training: ready-made and user-friendly customizing, with strong feedback and review components. Ideal for individual skills-training and team training.
- ▶ A wide variety of vocal sounds: laughing, crying, hiccups, coughing, grunting and breathing.
- ▶ Full simulation of breathing patterns with different rates, depths and complications.
- ▶ Colorization of the skin in the cheek, chin and extremities, to simulate conditions like cyanosis, jaundice, paleness and redness.
- ▶ Wireless and tetherless control: able to be used everywhere.

The most realistic baby simulator with durable and life-like silicon skin

**Built-in AV recording solution:  
connect up to three cameras**

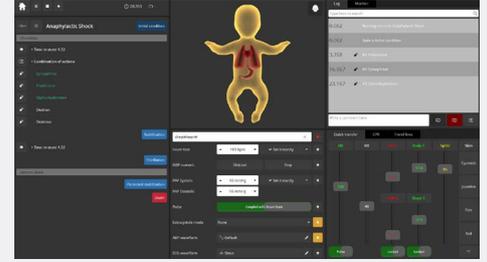
## NENASim HPS Xtreme FEATURES



**Auscultation of heart, lungs and bowels\***



**CPR application\***



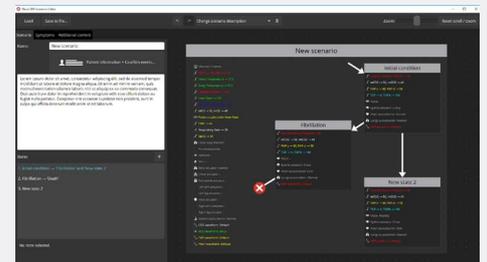
**Tutor Software\***



**Skin coloration: cyanosis, jaundice, pale and red\***



**Mask ventilation\***



**Scenario Editor\***

### Realistic anatomy

The NENASim is designed to most accurately resemble a baby. Being wireless and tetherless the baby can be used within and outside medical departments, even on the move. The durable skin is soft to the touch, easy to clean, and completely envelops the simulator. The inner parts are designed for realism: the human skeleton is recognizable. Landmark features like the ribs, sternum, fontanelles, collar bones, arm and leg bones, can be found and be used for medical procedures. The fontanelles can be set to different states. All joint types have accurate movement degrees.

The NENASim has realistic eyes, head and limb movement. It is capable of a variety of breathing patterns, with different rates, depth and complications. Sounds include the different breathing patterns, pulse, bowels, and vocal sounds like coughing, laughing and crying. It is possible to add own sounds.

Through the use of the stethoscope simulator many different sounds within the body can be traced, like heart, breathing, bowel and bruit sounds. These too can be added on.

### Cardiovascular system

The cardiovascular system of the NENASim simulates blood circulation. Vital signs, like blood pressure, pulse rate and respiratory rate are visible on the patient monitor and directly from the patient simulator. The NENASim has palpable axillary, femoral, fontanel and umbilical cord pulses, which are synchronized with the patient monitor. When applying CPR, the software shows feedback on the depth and frequency. The CPR compressions generate corresponding pulses, blood pressure waveforms, sounds and ECG.

### Realistic airway management

One of the most important aspects of pediatric care, which requires full understanding and expertise of the staff, is airway management. The NENASim has a realistic airway, with a tongue, vocal chords, trachea and esophagus, attached to two lungs. The NENASim allows training with endotracheal, nasotracheal and orotracheal intubation as well as mask ventilation and laryngeal mask insertion. Head tilt and chin lift can be trained, as well as performing the jaw-thrust maneuver. Pneumothorax can be performed, as well as chest tube insertion.

### Interactivity and responsiveness

All different parameters, motor functions, sounds and colorization, like cyanosis, jaundice, paleness and redness, can be set. The NENASim responds automatically and dynamically to actions taken by the user. They follow the conditions of the medical scenarios and can be individually selected by the user. The scenarios and individual settings can be set up wireless through easy-to-use software.

The colorization of the NENASim reacts upon the level of light in the room. The dilation of the pupils also respond to light. It has a foot reflex build in.

### Product training, service and guarantee

The NENASim is a complex product, we understand the need for a strong service component. Medical-X provides application training and guarantees the product for 1 year. Additional service packages can be provided for.