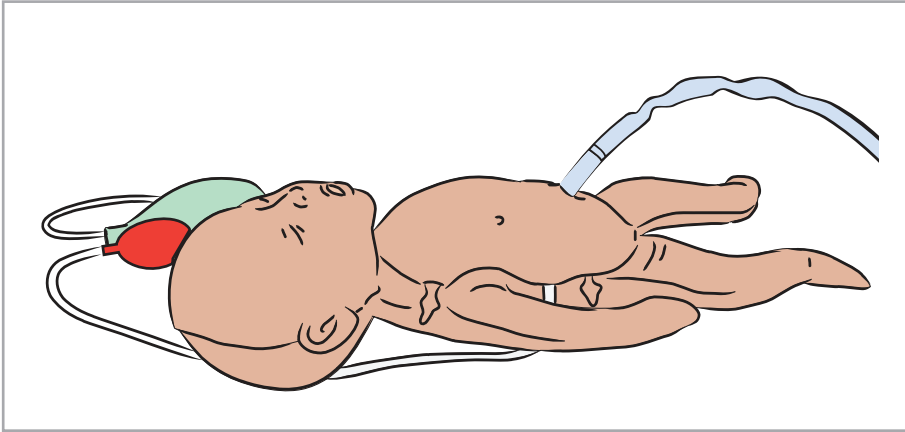


NeoNatalie

Newborn Simulator

Directions for Use



NeoNatalie is a newborn baby resuscitation simulator which can simulate presence or absence of essential vital signs such as crying, spontaneous breathing, palpable umbilical pulse and heart sounds and allows practicing both standard care and resuscitation of newborn babies. The simulator has the size and appearance of a newborn baby and comes with relevant training accessories and a pouch suitable for storage and transportation.

There is an urgent need to train millions of birth attendants in developing countries in effective newborn resuscitation techniques in order to achieve the UN Millennium Development Goal 4 of reducing infant and child mortality by 2/3 from 1990 to 2015. Laerdal hopes to contribute to such widespread training by providing the NeoNatalie Newborn Simulator and other NeoNatalie products on a not-for-profit basis to developing countries.

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To make NeoNatalie ready for use

NeoNatalie comes deflated and folded. She can be used when filled with either water (A) or air (B). When filled with water NeoNatalie has a normal body weight and the neck moves as is relevant for resuscitation. If water temperature is around 36 °C (98 ° F), the simulator's body temperature is also normal.

A. Fill with water, for extra realism



1. Pull out the filling extension from under the face skin. Open the valve. Apply your lips - or a bag-mask ventilation device for improved hygiene - to the valve and inflate until the body is partially inflated. (This will separate the foils and allow easy filling with water afterwards.)

2. Unscrew the filling cap. Place NeoNatalie across a chair or similar to provide support while filling with approx. 2 litres of water from a tap or suitable container. It may be practical to use a circular mask as a funnel. Return filling cap.

3. To fill with more water: Open the valve. Fill NeoNatalie Suction - or another suitable irrigation device - with water; and use this to insert additional water into NeoNatalie's body until the body feels firm.

4. Close the valve. Fold the filling extension forward and push it under the face skin until it clicks into the holder.

B. Or fill with air, for immediate readiness

Pull out filling extension from under the face skin. Open the air valve. Apply your lips - or a bag-valve ventilation device for improved hygiene - to the open valve. Inflate air until the body feels firm. Close valve. Bend the filling extension forward and push it under the face skin until it clicks into the holder.

Functions and features

Head, neck and airway

A soft face skin with mouth and nose is attached to the head with snap fasteners.

An air passage is provided from the mouth to the lung. The airway is closed when the head is flexed forwards or far backwards, and open when the head is slightly extended or in the neutral position.

Lung ventilation

When the airway is correctly opened, the lungs of NeoNatalie can be ventilated with

- (a) ambient air inspired by a bag-valve-mask resuscitator using a suitable mask size
- (b) exhaled air inspired mouth-to-mouth and nose, or mouth-to-mask

Each effective ventilation lifts the chest wall visibly. Expired air from the simulator escapes through the mouth, which causes the chest wall to fall to its original position. The simulator is not designed for exhaled air resuscitation (mouth-to-mouth/nose) when shared by more than one user; since this requires thorough cleaning between users, and also replacement of lung and airways.

Assessment of heart activity

When the simulation bulb set is attached, pressing the small red bulb rhythmically creates simultaneous

- (a) pulse beats in the sealed Umbilical Stump which extends from the mannequin (pulse beats can be felt when the stump is held between forefinger and thumb), and
- (b) heart sounds in the area between the chest nipples (auscultation possible using a stethoscope).

Binding/clamping and cutting the cord

To prepare for practicing cutting the cord, do the following:

1. Attach the connector end of the separate Umbilical Cord to the Umbilical Stump.
2. Apply an Umbilical Tie or Clamp around the cord, approx. 2 cm over and under the connector.
3. Simulate cutting the cord by detaching the cord at the connector, leaving the ties or clamps in place. (Actual cutting of the cord would quickly reduce the provided cord length.)

Chest compression

NeoNatalie features natural chest compliance allowing chest compressions to be practiced as recommended for newborn babies and infants. Each chest compression which depresses the center of the chest wall the recommended distance is recognized as acceptable, and immediately signalled by an audible click.

 *Note: Practicing chest compressions is not part of the Helping Babies Breathe training program.*

To simulate vital signs

To help learners recognize the newborn baby's condition during scenario training, a dual function squeeze bulb connected by a twin pneumatic tube to NeoNatalie allows the instructor or informed co-trainer to simulate spontaneous breathing, umbilical pulse and heart sounds. A separate squeeze bulb with a sound unit allows simulating birth cries.



Maintenance, storage and transport

To clean

Clean the simulator's exterior with a soft cloth wet in soapy water. Wipe dry with a clean cloth or paper towel.

 *Note: Do not use chlorine to clean the manikin as this will degrade the material.*

To store or transport

NeoNatalie can be stored or transported in all temperatures which are normal for people. If NeoNatalie is deflated, transport conveniently in its original cardboard box and storage pouch. If transport of water filled simulators is desirable, use the pouch or other suitable transport container.

To refill the manikin after storage

After longer periods stored with water, some water may evaporate and the manikin may appear slightly floppy or with less strong muscle tone. Simply replenish the manikin with water using the NeoNatalie Suction (see steps 3 and 4 on page 2).

To repair a leak

If a leak has developed, suspect incomplete closure of the filling cap, air valve, or a puncture in the body. Try to locate the puncture. Close the puncture with patch and glue from a bicycle repair kit.

Main units and accessories

Main units

NeoNatalie is available with a light or dark complexion in two models:

<i>Cat. no</i>	<i>Description</i>	<i>Cat. no.</i>	<i>Description</i>
104-10001	NeoNatalie Basic (dark)	104-10003	NeoNatalie Complete (dark)(US)
104-10002	NeoNatalie Basic (light)	104-10004	NeoNatalie Complete (light)(US)
		104-10005	NeoNatalie Complete (dark)
		104-10006	NeoNatalie Complete (light)

Accessories

Standard accessories in both Basic and Complete model

- Squeeze Bulb to simulate crying
- Umbilical Cord with 2 Umbilical Ties
- 2 Sheets to simulate towels
- Storage/Carrying Pouch
- Head Cap

Additional accessories available with Complete model:

- NeoNatalie Resuscitator
- NeoNatalie Suction
- Stethoscope

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