

Equipment That Is Used in the NICU



What types of equipment are used in the NICU?

Neonatal Intensive Care Units (NICUs) have complex machines and devices for the unique needs of tiny babies. The NICU can be overwhelming to a new parent. Learning about what to expect in the NICU can help ease your concerns.

Some of the equipment often used in the NICU includes:

- **Heart or cardiorespiratory monitor.** This monitor displays a baby's heart and breathing rates and patterns on a screen. Wires from the monitor are attached to adhesive patches on the skin of the baby's chest and abdomen.
- **Blood pressure monitor.** Blood pressure is measured using a small cuff placed around the baby's upper arm or leg. Periodically, a blood pressure monitor pumps up the cuff and measures the level of blood pressure. Some babies need continuous blood pressure monitoring. This can be done using a small tube (catheter) in one of the baby's arteries.
- **Temperature.** A temperature probe is placed on the baby's skin with an adhesive patch. A wire connects the temperature probe to the overhead warmer (incubator) to help regulate the heat needed to keep the baby warm.
- **Pulse oximeter.** This machine measures the amount of oxygen in the baby's blood through the skin. A tiny light is taped to the baby's foot or hand. A wire connects the light to the monitor where it displays the oxygen saturation or "sat." This refers to the amount of hemoglobin in the baby's red blood cells that is saturated with oxygen.
- **X-ray.** Portable X-ray machines may be brought to the baby's bedside in the NICU. X-rays use invisible electromagnetic energy beams to produce images of internal tissues, bones, and organs on film. X-rays are taken for many reasons, including checking the placement of catheters and other tubes, looking for signs of lung problems like respiratory distress syndrome or pneumothorax, and checking for signs of bowel problems.
- **CT scan.** A CT scan is a diagnostic imaging procedure that uses a combination of X-rays and computer technology to produce horizontal (axial) images of the body. A CT scan shows detailed images of any part of the body, including the bones, muscles, fat, and organs. CT scans are more detailed than general X-rays. CT scans are sometimes done to assess bleeding inside a baby's head. A CT scan is done in a special room, and the baby may need a sedative medicine so that they will be motionless for the exam.
- **MRI.** MRI is a procedure that uses a large magnet, radio waves, and a computer to make detailed images of organs and other tissues in the body. Like a CT scan, MRI is done in a special area of the hospital. It is often done to examine a baby's brain stem, spinal cord, and soft tissues. The baby will need a sedative medicine to lie still for the exam.
- **Nasogastric tube or orogastric tube.** These tubes are placed through the baby's nose or mouth into the stomach. The tube is held in place with special tape. An X-ray may be used to check the tube's placement. Sometimes babies in the NICU can't eat on their own and are fed through these tubes. Your baby may also have a feeding pump.
- **Endotracheal tube (ET).** This tube is placed through the baby's mouth or nose into the windpipe (trachea). The ET tube is held in place with special tape and connects to a mechanical breathing machine (ventilator) with flexible tubing. An X-ray is used to check the tube's placement. When a baby has an ET tube, the child is unable to make sounds or cry.
- **Respirator or mechanical ventilator.** This machine helps babies who can't breathe on their own or who need help taking bigger breaths. High-frequency ventilators give hundreds of very fast puffs of air to help keep a baby's airways open. Ventilators can also give extra oxygen to the baby.

- **Continuous positive airway pressure (CPAP).** Through a small mask around the baby's nose or small tubes that fit into the baby's nostrils, called nasal CPAP, this machine pushes a continuous flow of air to the airways to help keep tiny air passages in the lungs open. CPAP can give extra oxygen as well. It may also be given through an ET tube.
- **Extracorporeal membrane oxygenation (ECMO).** This is a special treatment for babies with respiratory disease that does not respond to maximum medical care. With ECMO, blood from the baby's vein is pumped through an artificial lung where oxygen is added and carbon dioxide is removed. The blood is then returned back to the baby. ECMO is used only in specialized NICUs.
- **Nasal cannula.** These small plastic tubes go into your baby's nose. Air and oxygen go through the tubes into your baby's lungs.
- **Intravenous line (also called IV).** This is a tube inserted with a needle into your baby's vein. A vein is a blood vessel that brings blood back to the heart. Your baby can get fluids, medicine, and blood through an IV.
- **Central line.** This is a small plastic tube that goes into a large blood vessel. Your baby gets medicine and fluids through the tube, and healthcare providers can draw blood out through the tube.
- **Arterial line.** This is a thin tube that goes into your baby's artery to check their blood pressure and measure blood gases.
- **Bili lights.** These bright lights shine on a baby to treat jaundice. Sometimes a bili blanket is used. This is a blanket with bili lights that is wrapped around the baby. Jaundice is when a baby's eyes and skin look yellow. A baby has jaundice when their liver isn't fully developed or isn't working. Treatment with bili lights is also called phototherapy. Babies can have this treatment for 3 to 7 days.
- **Incubator.** An incubator is a clear plastic bed that keeps your baby warm. You can touch your baby through holes (also called ports) in the sides of the incubator.
- **Radiant warmer.** This is an open bed with overhead heating to help keep your baby warm.

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