



RESPIRATORY SUPPORT FOR YOUR BABY

At St. Joseph's Hospital NICU

RESPIRATORY THERAPIST (RT)

- A specialist trained to help with managing your baby's breathing needs
- Your baby's respiratory care team consists of more than 20 dedicated respiratory therapists who work in conjunction with your baby's NNP and/or MD to provide all the therapies listed below
- We are present in the NICU 24 hours a day to assist with all bedside cares, participate in rounds and attend deliveries
- We look forward to caring for your new baby!

IMPORTANCE OF OXYGEN FOR YOUR BABY

- Tissues, organs and cells in the body need a constant supply of oxygen to work properly. Oxygen gets into our bodies through nose and mouth then into the lungs. The lungs then pass the oxygen into the bloodstream through tiny air sacs called alveoli. Many full term and premature babies born at higher altitudes (such as Colorado) require supplemental oxygen following birth
- The following are examples of the many therapies we can provide to assist your baby's breathing while in the NICU

LOW FLOW NASAL CANNULA (LFNC)

- Oxygen delivery through tubing/prongs that sit just inside your baby's nose
- LFNC delivers 100% oxygen but in very small amount, hence low flow



HEATED HIGH FLOW NASAL CANNULA (HHFNC)

Delivers oxygen through a heated and humidified system using nasal prongs that sit inside your baby's nose.

Delivers some distending pressure that helps keep lungs open

Delivers titrated amount of oxygen



- Delivers both oxygen and consistent distending pressure - positive end expiratory pressure (PEEP) – the pressure that helps keep lungs open
- Uses thicker prongs fitted in your baby's nose.
- The system is held in place using a hat and an adhesive mask & mustache.
- Baby is breathing on his/her own

BUBBLE CONTINUOUS POSITIVE AIRWAY PRESSURE (BCPAP) WITH HUDSON PRONGS



BUBBLE CPAP WITH RAM CANNULA

- Ram cannula – a type of high flow cannula that can be connected to CPAP or breathing machine - delivers oxygen and some distending pressure
- Baby is breathing spontaneously





DIFFERENT TYPES OF VENTILATORS

NON-INVASIVE MECHANICAL VENTILATION (NIMV)

- Breathing support that uses a ventilator (breathing machine)
- Delivers oxygen and positive pressure with the addition of extra breaths to stimulate your baby's own breathing
- Uses thicker prongs fitted in your baby's nose.
- The system is held in place using a hat and an adhesive mask & mustache.
- See BCPAP



NAVA (NEURALLY ADJUSTED VENTILATORY ASSIST)

Can be done Invasive (while intubated with a breathing tube) or Non-Invasive using the Hudson Prongs

Provides similar support as NIMV

The baby will have a special catheter to sense electrical impulses from the diaphragm, which can also be used for feeding.

Reducing support is done by reducing the NAVA level

The NAVA level can range from 0-5 and is usually weaned by 0.3-0.5 depending on the baby

The higher the NAVA level, the more support is given to the baby

When the NAVA level is at 0.5 or below, usually babies transition to BCPAP



INVASIVE MECHANICAL VENTILATION (IMV)

If your baby is unable to keep breathing spontaneously a special tube – endotracheal tube (ETT) - is placed through the vocal cords into the lungs

The ETT is connected to a breathing machine (ventilator)

The ventilator provides full/partial breathing support based on your baby's breathing needs

Multiple types of ventilators can be used to fit each baby's specific breathing needs



HIGH FREQUENCY OSCILLATOR VENTILATOR (HFOV)

- This mode of ventilation is used with the ETT (endotracheal tube or breathing tube)
- It works by delivering hundreds of tiny breaths into the lungs instead of how the traditional ventilator works with more regular inhalation and exhalation
- There is a visible wiggle or shake in the chest and abdomen
- It can help improve oxygenation and gas exchange





CARES AND HOLDING WHILE YOUR BABY IS ON RESPIRATORY SUPPORT

- It is encouraged for you to continue to participate in cares and hold your baby when they are on respiratory support.
- Your baby's care team will work with you to develop a plan & time for holding skin to skin that will be the safest and most beneficial for you both.