Alberta Children's Hospital

Tracheostomy and Ventilator Education Program

Module 4: Assessment

September 23, 2022

Alberta Health Services

Disclaimer

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Objectives:

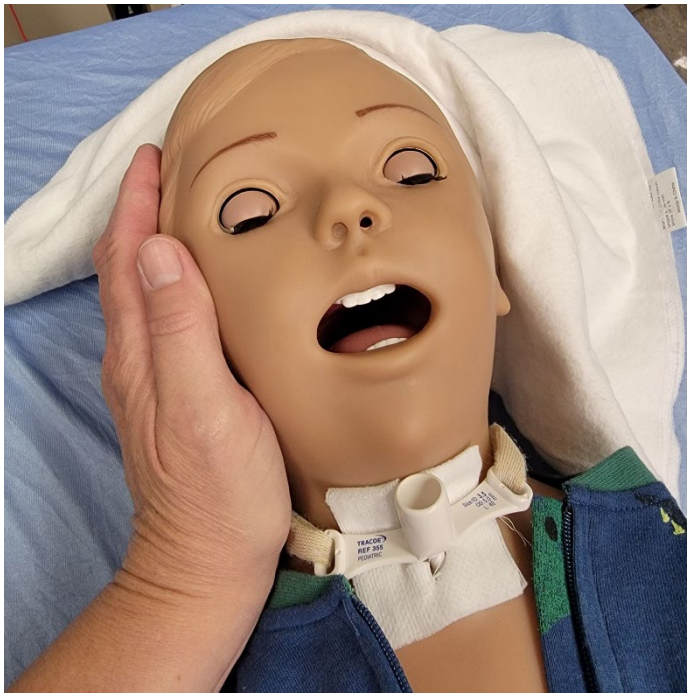
- Introduction to basic respiratory assessment skills
- Learn how to use these skills to assess if your child is unwell

Respiratory assessment

- It's important to always remember why your child has a trach
- Every child has their own baseline respiratory assessment that is their "normal" for them
- You will learn how to assess this for your child
- This will help you to identify when's something is not normal baseline or if they are having trouble breathing
- You know your child and you can tell when they are not themselves – always trust your instincts

Respiratory assessment

- Behavior
- Color
- Vital signs
- Breathing effort
- Signs of distress



Behavior

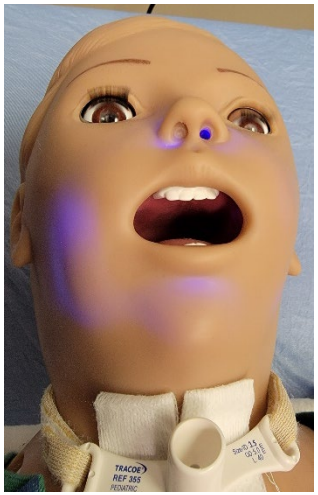
- You know your child so well that when something is not right or your child is “off” – you can tell
- A small change in behavior can indicate a respiratory issue
  - A child who is normally happy and chatty can become quiet or irritable due to feeling unwell or having trouble breathing

Behavior

- They may look frightened or upset or change their posture:
    - They may try to arch forward or sit up to help with their breathing
    - They may rock their body forward and backward to help with their breathing (anxious behavior)
    - They may bob their head forward or extend their neck to help with their breathing

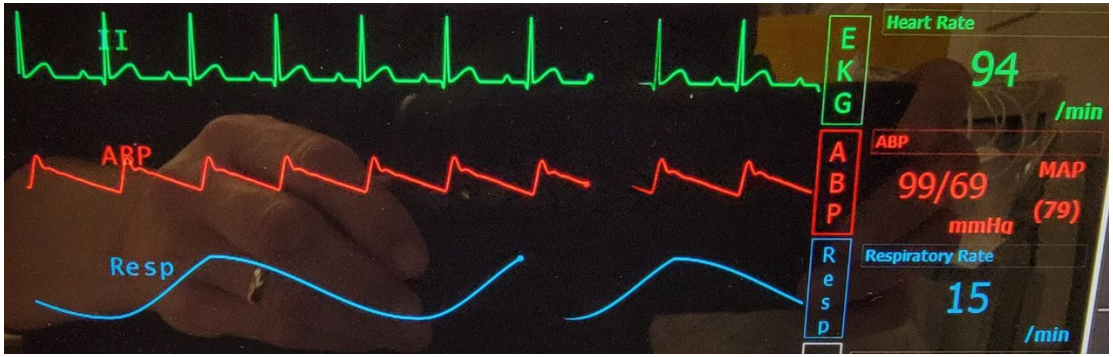
Color

- Color changes can occur when a child is experiencing trouble breathing
  - They may be paler than usual
  - They can turn reddish when they are working hard to breathe (and if angry, frustrated, feverish)
  - A dusky bluish color that can be seen around the mouth, nose and mucous membranes is called Cyanosis - this means there is less O_2 in the blood and is considered a “late” sign of respiratory distress (because it takes time to develop) and must be taken very seriously



Vital signs

- Vital signs are your child’s heart rate, blood pressure, respiratory rate and effort, and pulse oximetry that we regularly monitor to assess your child's baseline
- As part of learning how to care for your child, you will learn how to assess these as needed for your child



Heart rate 

- Your child has a normal heart rate range for their age and condition – you have seen them on the monitors in your child's room
- Your child's heart rate will change for many reasons:
  - When asleep, upset, excited, unwell, eating
- Knowing your child's heart rate when they are stable will help alert you when their heart rate is changing
- Ask your health care team to help you learn how to assess your child's heart rate

Blood pressure

- Your child has a normal blood pressure range for their age and condition – you have watched your healthcare team take these measurements when assessing your child
- Blood pressure doesn't normally change much from baseline but can be affected by medications
- We don't normally show families how to take a blood pressure but if it's required for your child, you will be taught how to assess blood pressure

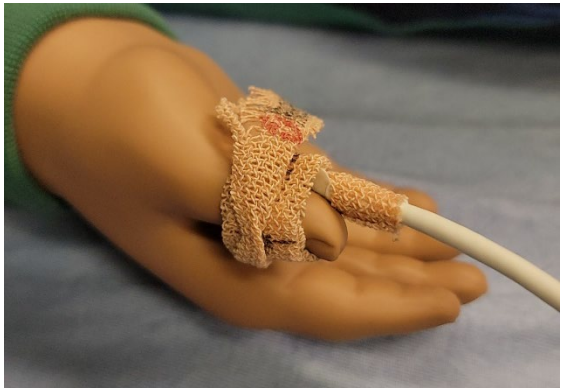
Respiratory rate

- Your child has a normal respiratory rate range for their age and condition
- Respiratory rates vary widely for children when they are eating, crying, sleeping, upset, or when having trouble breathing
- Knowing what your child's usual respiratory rate will alert you when their respiratory rate changes
- Ask your health care team to help you learn how to assess your child's respiratory rate

Respiratory effort

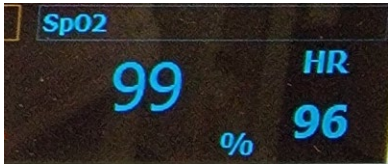
- Breathing does not require much effort in a child with no respiratory or cardiac conditions
- Your child may have a condition where their breathing effort is normally high or becomes high quickly with trouble breathing
- Knowing what your child's normal breathing looks like will help you understand when their effort is higher or they are working harder to breathe
- Ask your health care team to show you how to assess your child's respiratory effort

Pulse oximetry



- Using an pulse oximeter, we can place a probe on your child's fingers or toes and monitor the amount of O_2 in your child's blood without taking blood
- Hospital pulse oximeters are always checked for accuracy as they can be affected by movement or cold hands/feet
- Normal O_2 levels in most people are above 90%, but this value can be affected by many factors

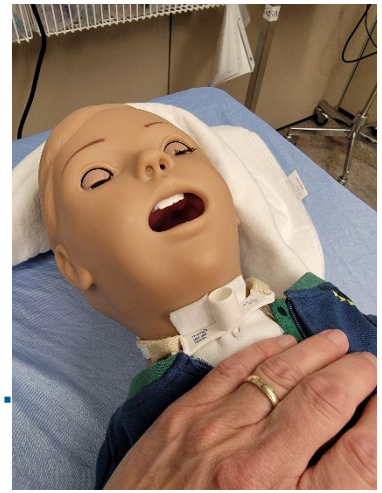
Pulse oximetry



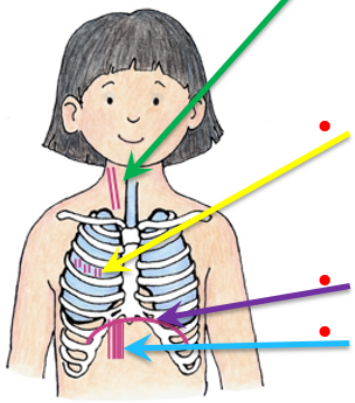
- We use these monitors to trend your child's O_2 levels and to monitor O_2 therapy when in use
- We do not send home pulse oximeters with children and will not show you how to use them
- Your child will be assessed by your Home Care team once home with their applicable devices

Breathing effort

- As you have learned before, breathing effort is normally very low – we don't usually have to work hard to breathe
- If your child has increased breathing effort, you might notice:
  - Position changes to help with trouble breathing
  - Nasal flaring or mouth breathing to increase airflow
  - Changes in color
  - Faster breathing
  - Faster heart rate



Breathing effort



- Sternocleidomastoids/scalenes: *Helper or accessory muscles* above the clavicles around the neck that can help with rib cage movement
- Intercostals: *Helper or accessory muscles* between the ribs that can help with rib movement
- Diaphragm: The *main muscle* of breathing
- Abdominals/oblique's: Belly muscles that can help the diaphragm pull the rib cage up and down

- If your child is working hard to breathe, you may see the helper or accessory muscles working to help the diaphragm move
- These muscle movements are called retractions and take energy to move which can tire your child out
- You may hear rattles or wheezy breathing

Breathing effort and respiratory distress

- Any of these increased signs of breathing effort mean your child may be in respiratory distress
- If your child is having trouble breathing, you can call your CCAN team for help - they may tell you to come to the Emergency Department or to call **911**
- You may assess that your child has a blocked or dislodged trach tube causing respiratory distress – follow your Emergency Algorithms that you have learned and clear the blockage or change the trach
- You may also have inhaled medications to give your child
- Always call **911** if this is an emergency

Summary:

- This module has provided a basic introduction of respiratory assessment skills, and to assess when your child is unwell
- If you have concerns or questions, please talk to your healthcare team