Ventilator Weaning

Ventilator weaning is a process of shifting the breathing function from the machine to the patient. The goal is to get the patient back to breathing on his or her own. The weaning process is gradual and takes place over time. Drake Center successfully weans more patients and does so over a shorter period of time than the national average. We do this by carefully managing the ventilator weaning process.

How The Weaning Process Works

At Drake Center, a lung specialist, referred to as a pulmonologist, and the respiratory therapist coordinate the weaning process working with the doctors, nursing staff and other health care providers. The following are the steps we take to wean a patient from a ventilator.

Step 1– Determine the patient's readiness. Before a patient can be weaned from a ventilator, the medical condition that led the patient to being connect to a ventilator must be treated. When a patient is considered stable, the weaning process can begin.

Step 2– Discuss the weaning plan with the patient and his or her family. Address any concerns and explain what the patient is likely to experience as he or she attempts to breathe without the support of the machine.

Step 3– Complete an initial assessment to determine the appropriate protocol for each patient.

- If the patient is not breathing well, we begin with what is called **volume support**. This means, the patient attempts to breathe on his or her own, however, if not enough air is inhaled, the machine will provide the additional air that is needed up to a pre-set limit. This ensures a patient gets adequate air. If a patient does well on the volume support protocol, after a 24 hour period, we begin implementing the pressure support breathing.
- If the patient is breathing well according to specific criteria, we begin what is called **pressure support** breathing. This means the patient attempts to breathe on his or her own, however, to reduce any stress, the machine supplements the normal breathing so as to reduce the work associated with breathing. Each day, the amount of pressure is reduced and the patient takes on more of the work to breathe himself/herself.

Regardless of whether a patient is on pressure or volume support, an important part of the weaning process is to build the patient's confidence, strength and endurance. If, at any time, during the weaning process a patient feels anxious, or any of the vital signs indicate distress or fatigue, we stop the test and resume the ventilator-assisted breathing. Signs of distress may include increased heart rate, increased blood pressure, perspiration, muscle strain and low oxygen levels.

Step 4– Document the respiratory rate (frequency of breaths), and the amount of air inhaled and exhaled. Once a patient demonstrates the ability to sustain breathing on his or her own, the patient is taken off the ventilator. When the ventilator is disconnected, oxygen may be provided directly through the trach tube to help a patient breathe.

Step 5– Once a patient demonstrates the ability to breathe on his or her own through the trach, the next step is to put a cap on the end of the trach tube so the patient begins to breathe through his or her nose and mouth. At this point a patient may still receive oxygen.

Step 6– After a patient demonstrates the ability to successfully breathe through the nose and mouth the next step is to decannulate. Decannulate means to remove the trach tube out of a patient's neck.

Factors That Affect Weaning

The following are factors that may delay the start of the weaning process or that may complicate or delay the ability for a patient to successfully be weaned.

- **Cardiovascular** – Ability for the lungs and heart to work together to make sure the oxygen gets into the blood stream so the body is able to function
- **Complications** – A common concern is ventilator-associated pneumonia (VAP)
- **Other** – The medical condition, excessive secretions, fluid in the lungs (know as aspirations), a problem with the muscles used to breathe, or upper airway obstruction
- **Psychological Readiness** – The motivation and confidence of a patient to begin the weaning process
- **Respiration** – Process of inhaling and processing oxygen, and exhaling CO2
- **Volume** – Amount of air a patient is able to inhale and exhale

Drake Center
151 W. Galbraith Road
Cincinnati, Ohio 45216-1096
513-418-2500
www.DrakeCenter.com