Breathing Issues with Neuromuscular Disease

When you have a neuromuscular disease, it is common to have breathing problems. This occurs because the muscles involved in breathing slowly weaken. These muscles include the diaphragm, the intercostals, and the abdominal muscles. See the picture and list below that explain where these muscles are and what they do.

**Diaphragm**
It is the muscle under the lungs. It moves down and contracts when breathing in (inhaling). It relaxes and moves up when breathing out (exhaling).

**Intercostal Muscles**
These are muscles between and on top of the ribs. They are used when you breathe in and out.

**Stomach (abdominal) Muscles**
These are the muscles below your diaphragm. You use them when coughing and when breathing hard. These muscles also help with forced breathing and coughing. Coughing helps to move mucus up and out of our lungs.

**Effects of Weakening Muscles**
As these muscles weaken, breathing becomes harder. Coughing and swallowing may be harder. The respiratory therapist will help you get equipment to make it easier to clear your lungs of secretions and help you breathe more easily.

Swallowing food and choking may also be a problem. Your swallow and speech specialist can teach you ways to get the food you need and reduce your choking risk. Even with this help, it is best to have family members and friends trained to do the Heimlich maneuver.

**Heimlich Maneuver for Choking**
A choking victim can't speak or breathe and needs your help right away. **Do not slap the victim's back.** This could make matters worse. Follow these steps to help a choking victim:

1. From behind, wrap your arms around the victim's waist.
2. Make a fist and place the thumb side of your fist against the person’s belly, below the ribcage and above the navel.
3. Grasp your fist with your other hand and press into the upper belly with a quick upward thrust. Do not squeeze the ribcage.
4. Repeat until the object is coughed or spit out.
The Heimlich can also be done if the person is lying flat as shown in this picture.

Assisted Cough
In an assisted cough, another person pushes on your chest to help you cough. An assisted cough is done while you are sitting up in a bed or chair. Follow these steps for doing assisted cough:

1. Your caregiver places the heel of one hand just above your navel. The other hand is placed on top of the first hand.
2. You take a deep breath and hold it.
3. You cough while your caregiver pushes upward and under the ribcage, one time.
4. It may take practice to coordinate the cough with the motion.

Assisted Cough Machine
The assisted cough machine helps to clear secretions from your lungs. When you breathe in, the machine gives you air to help expand your lungs. When you breathe out, the machine pulls the air out of your lungs. This helps make your cough stronger and more effective.

Portable Suction Machine
When you have a neuromuscular disease, it is common to have weakness in tongue muscles. This makes it impossible to move mucus to spit out. A portable suction machine can be used at home to help to help remove mucus.
**Noninvasive Ventilation**
As your disease worsens, your breathing can become more difficult. Your doctor will order the use of a type of noninvasive or invasive ventilation. Noninvasive means nothing is inserted into your mouth or throat. This can be done with noninvasive positive-pressure ventilation (NIPPV). The NIPPV machine gives you a deeper breath through the mask, which makes your breathing more comfortable. A mask is placed over your nose and held in place by a head strap.

**Tracheostomy**
Sometimes, a more permanent type of ventilation is needed. Tracheostomy is an option that requires surgery to create a permanent opening in the neck to the windpipe (trachea). A tube into the opening lets air in.

A valve keeps the opening of the tube closed during the day, which allows you to speak and breathe normally.

At night, you open the valve so that air can go around the blockage in your throat and into your lungs while you sleep.