
Being Weaned Off a Breathing Machine (Ventilator)

A ventilator is a machine that helps a person breathe when they are too ill to breathe on their own. A breathing tube carries oxygen from the ventilator to the person. The breathing tube may be put in the mouth, nose, or a hole in front of the neck. The tube goes down their throat and into their windpipe (trachea). While on a ventilator, the person can't speak. This is because the breathing tube passes between the open flaps of the voice box in the throat.

When a person is on a ventilator, they are often given medicine to make them sleep. The medicine eases the discomfort of the tube. When it's time to try breathing without the ventilator, the healthcare team goes through a process to make sure it's safe and the person is as comfortable as possible. This sheet can help you understand how it's done.

What you can do to help

If you are allowed to be in the hospital room with your loved one, stay calm. Ask the healthcare team where to stand or sit. Follow all their instructions. You may be asked to hold your loved one's hand or speak to them as they wake up and do the breathing test. You can say comforting words to reassure your loved one. This can help them through the stress and confusion of waking up from sedation with a breathing tube in place.

Spontaneous awakening trial (SAT)

Weaning a person off a breathing machine begins with a spontaneous awakening trial (SAT). When on a ventilator, the person is usually given medicine to make them sleep. When it's time to try weaning off the machine, the first step is stopping this medicine. The person will still be on the ventilator. They will still be on medicine for pain. The healthcare team will ask the person to do four things:

- Open their eyes.
- Look at a certain person in the room.
- Squeeze someone's hand.
- Stick out their tongue.

The healthcare team then makes sure your loved one can go without sedation for 4 hours or more without problems such as anxiety, agitation, or pain. The team keeps a close eye on the monitors that show things such as heart rate, breathing rate, and other information to see how well they are adapting. They look for signs of problems, such as:

- Breathing rate of 35 breaths per minute or less for 5 minutes or more
- Oxygen saturation (SpO2) of less than 88% for 5 minutes or more
- Sudden irregular heart rhythm
- Fast or slow heartbeat
- A lot of sweating

- Trouble breathing
- Lower belly moving in instead of out when the person takes a breath

If the person has any of these problems, the sedation is started again. It will be started at a lower dose and increased as needed. But if your loved one doesn't have these problems, the next step is a spontaneous breathing trial (SBT).

Spontaneous breathing trial (SBT)

The next step is a test for breathing with a smaller amount of oxygen support. The ventilator is not disconnected, but the settings may be changed to let the person start breathing on their own. They will remain on the same ventilator, but with less support.

The healthcare providers watch closely for up to 2 hours or more to see if there are signs that your loved one is having too much trouble breathing naturally. These are similar to the signs noted in the SAT test above. If your loved one needs to go back on sedation for the time being, the SAT and SBT process will likely be tried again the next day. If the person passes the breathing trial, the next step is removing the breathing tube.

Removing the breathing tube

Removing the breathing tube from the throat is called extubation. First, the healthcare team adjusts the bed to put the person in a more upright position. They will then ask them to take a deep breath and then breathe out or cough. The tube is quickly removed as they breathe out or cough. They may cough more after the tube is removed.

After the tube is removed, the person will still have oxygen support. This is done through an oxygen mask or small plastic prongs that rest in the nostrils and send oxygen. They may also be placed on a CPAP or BiPAP machine if they still need extra support.

Taking it step by step

The breathing trial is done to help make sure the person is definitely ready to be off the ventilator. It's OK if the process needs to be repeated on another day. It's more important to make sure they're ready. And it's sometimes hard for the healthcare team to know when the person is truly ready. If they're not, the tube may have to be put back in place after it's removed. The healthcare team works to make sure this doesn't need to happen. But sometimes it does.