COVID-19 AND YOUR LUNGS

COVID-19 is a viral respiratory disease. It infects and starts reproducing in your respiratory tract, which starts with your nose and mouth, going down your throat and bronchus. Think of your respiratory tract as an upside-down tree. The trunk is your trachea, or windpipe. It splits into smaller and smaller branches in your lungs. At the end of each branch are tiny air sacs called alveoli. This is where oxygen goes into your blood and carbon dioxide comes out.

The new coronavirus can infect the upper or lower part of your respiratory tract, traveling down your airways. The lining can become irritated and inflamed. In some cases, the infection can reach all the way down into your alveoli. As the infection travels your respiratory tract, your immune system fights back. your lungs and airways swell and become inflamed.

About 80% of people who have COVID-19 get mild to moderate symptoms. You may have a dry cough or a sore throat. Some people have pneumonia, a lung infection in which the alveoli are inflamed. About 14% of COVID-19 cases are severe, with an infection that affects both lungs, the swelling worsens, and accumulations of fluid and debris impair breathing. In critical COVID-19 (about 5% of total cases) the infection can damage the walls and linings of the air sacs in your lungs. You might have severe pneumonia or acute respiratory distress syndrome (ARDS). In the most critical cases, your lungs need help from a machine called a ventilator to do their job.

COVID-19 Complications

Acute respiratory distress syndrome (ARDS) is a life-threatening lung condition that prevents enough oxygen from getting to the lungs and into the blood due to a buildup of fluid in the air sacs (alveoli). The level of oxygen in the blood can stay dangerously low, even if the person receives oxygen from a breathing machine (ventilator).

People are placed on ventilators when they cannot breathe on their own, this is to make sure the person is getting enough oxygen and is getting rid of carbon dioxide. A ventilator is a machine that breathes for you or helps you breathe. It is also called a breathing machine or respirator.

The ventilator:

- Is attached to a computer with knobs and buttons that are controlled by a respiratory therapist, nurse, or doctor.
- Has tubes that connect to the person through a breathing tube. The breathing tube is placed in the person's mouth or in an opening through the neck into the windpipe (trachea). This opening is called a tracheostomy. It is often needed for those who have to be on the ventilator for a longer period of time.
- Makes noise and has alarms that alert the health care team when something needs to be fixed or changed.
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A person receives medicine to sedate them, so they remain calm and comfortable while on a ventilator. The medicine may cause people to be too sleepy to open their eyes or stay awake for more than a few minutes.

People cannot talk because of the breathing tube. When they are awake enough to open their eyes and move, they can communicate in writing and sometimes by lip reading. People on ventilators will have many wires and tubes on them. This may look scary, but these wires and tubes help to carefully monitor them. Some people may have restraints. These are used to prevent them from pulling out any important tubes and wires.