

18/MHS07/012

Anatomy Assignment

Question: COVID-19 is the ongoing viral pandemic in the world and the reason you are at home. Discuss the anatomical implication of this virus on the respiratory system of humans.

Answer: Coronavirus was identified last year as a cluster of pneumonia cases caused by a new coronavirus. Doctors have discovered that it is a respiratory disease, the type that reaches into your respiratory tract, which includes organs such as lungs. It causes a range of breathing problems from mild to critical. It has been discovered that older adults and people with other health conditions like diabetes, heart disease and cancer may have more serious symptoms.

SARS-COV-2, which is the virus is part of the coronavirus family. When the virus gets in your body, it comes into contact with mucus membranes that line your nose, eyes and mouth. The virus enters a healthy cell and uses the cell to make new virus parts. It begins to multiply, and the new viruses infect nearby cells. Picture your respiratory tract as a system of branches, and where it all begins as the trachea/windpipe. It then splits into smaller branches in your lungs. At the end of each branch are tiny air sacs which is known as alveoli. This is where oxygen goes into your blood and carbon dioxide comes out.

The new coronavirus can infect both the upper and lower part of your respiratory tract. It travels down your airways. The lining can become irritated and eventually inflamed. It was discovered that in some cases, the infection can reach all the way down into your alveoli. COVID-19 is a new condition, and scientists keep learning more and more everyday about what it can do to your lungs. It is believed to have similar effects on your body with that of two other coronavirus diseases, such as Severe Acute Respiratory Syndrome(SARS) and Middle East Respiratory Syndrome(MERS).

In the Mild case

As the infection travels through your respiratory tract, your immune system begins to fight back. Your lungs and airways swell and become inflamed. This can start in one part of the lung and spread. 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. Doctors can see signs of respiratory inflammation on a chest X-ray or CT scan. On a chest CT, they may see something called "ground-glass opacity" because it looks like the frosted glass on a shower door.

In the Severe Case

About 14% of COVID-19 cases are severe, with an infection that affects both lungs. As the swelling gets worse, your lungs fill with fluid and debris. You might also have more serious pneumonia. The air sacs fill with mucus, fluid, and other cells that are trying to fight the infection.

This can make it harder for your body to take in oxygen. You may have trouble breathing or feel short of breath. You may also breathe faster. If your doctor takes a CT scan of your chest, the opaque spots in your lungs look like they start to connect to each other.

In the Critical Case

About 5% of total cases are critical, with an infection that can damage the walls and linings of the air sacs in your lungs. As your body tries to fight it, your lungs become more inflamed and filled with fluid. This can make it harder for them to swap oxygen and carbon dioxide. 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.