

According to the World Health Organization (WHO), most people who contract COVID-19 only experience mild flu-like symptoms. Occasionally though, the infection can cascade into a severe case of pneumonia that can be lethal, especially for older people and those with underlying medical conditions.

The virus, officially named SARS-CoV-2, enters the body – generally through the mouth or nose. From there, the virus makes its way down into the air sacs inside your lungs, known as alveoli.

Once in the alveoli, the virus uses its distinctive spike proteins to “hijack” cells. The primary genetic programming of any virus is to make copies of itself, and COVID-19 is no exception. Once the virus’ RNA

has entered a cell, new copies are made and the cell is killed in the process, releasing new viruses to infect neighboring cells in the alveolus.

This process can occur initially without a person being aware of the infection, which is one of the reasons COVID-19 has been able to spread so effectively.

The process of hijacking cells to reproduce causes inflammation in the lungs, which triggers an immune response. As this process unfolds, fluid begins to accumulate in the alveoli, causing a dry cough and making breathing difficult.

For 80-85% of people infected by COVID-19, these symptoms will run their course much as they would with a case of the flu.

In 15-20% cases, the immune

system's response to inflammation in the lungs can cause what's known as a ["cytokine storm"](#). This runaway response can cause more damage to the body's own cells than to the virus it's trying to defeat, and is thought to be the main reason for why the conditions of young, otherwise healthy individuals can rapidly deteriorate.

If enough alveoli collapse, a patient to be placed on a ventilator for breathing assistance. Both acute respiratory distress syndrome (ARDS) and high-altitude pulmonary edema (HAPE) are being investigated as causes. At this stage, the surfactant that helps keep alveoli from collapsing has been diluted, and fluid containing cellular debris is impairing the gas exchange process that supplies

oxygen to our bloodstream. In the most severe cases, systemic inflammatory response syndrome (SIRS) occurs as the protein-rich fluid from the lungs enters the bloodstream, resulting in septic shock and multi-organ failure. This is often the cause of death for people who have succumbed to a COVID-19 infection.