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**DEPARTMENT: ANATOMY**

**MATRIC NUMBER: 18/MHS03/006**

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 human.

For most patients, covid 19 begins and ends in the lungs because like the flu, corona virus is a respiratory disease. They spread typically when an infected person coughs or sneezes, spraying droplets that can transmit the virus to anyone in close contact. Corona virus also cause flu-like symptoms, after the SARS outbreak, the World Health Organization reported that the disease typically attacked the lungs in three phases: viral replication, immune hyper-reactivity and pulmonary destruction. In the early days of an infection, the corona virus rapidly invades human lung cells.

The lung cells come in two classes: ones that make mucus and ones with hair like batons called cilia. Mucus helps protect the lung tissue from pathogens and make sure the breathing organ doesn’t dry out. The cilia cells beat around the mucus, clearing out debris like pollens and viruses. The virus infects and kills cilia cells, which then sloughed off and fills airways with debris and fluids, and that is when phase two and the immune system kicks in. When virus comes in, our bodies step up to fight the disease by flooding the lungs with immune cells to clear away the damage and repair the lung tissue.

When working properly, this inflammatory process is tightly regulated and confined only to infected areas but sometimes the immune system overacts and kills anything in their way including healthy tissue. During the third phase, lung damages continues to build which can result in respiratory failure. SARS punches holes in the lungs giving them a honeycomb like appearance. These holes create scars that protect and stiffen the lungs causing patients to often be put on ventilators to aid their breathing. Inflammation makes membranes between air sacs and blood vessels more permeable which can fill the lungs with fluids and affect their ability to oxygenate blood. In severe cases, you basically flood your lungs and can’t breathe and that causes death.