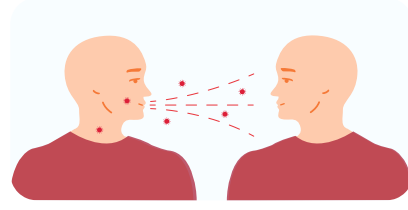


CORONAVIRUS AND HUMAN BODY

A COVID-19 Narrative

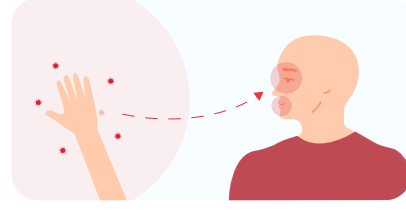
How Does COVID-19 Spread?

Direct Contact



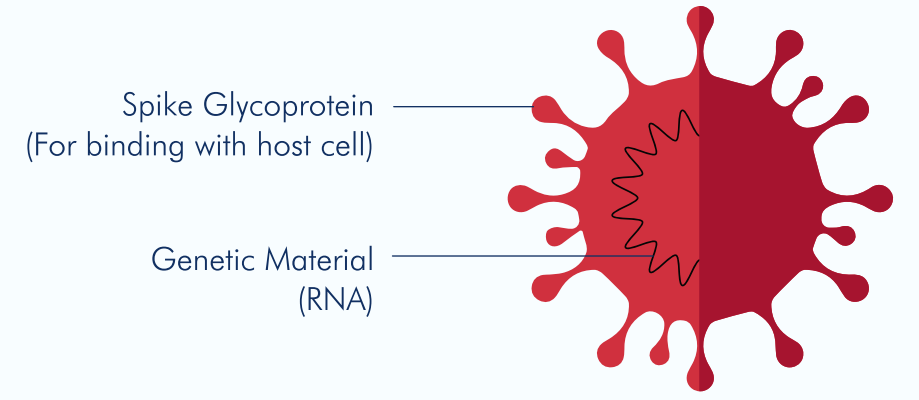
By being in close contact with COVID-19 patients

Indirect Contact

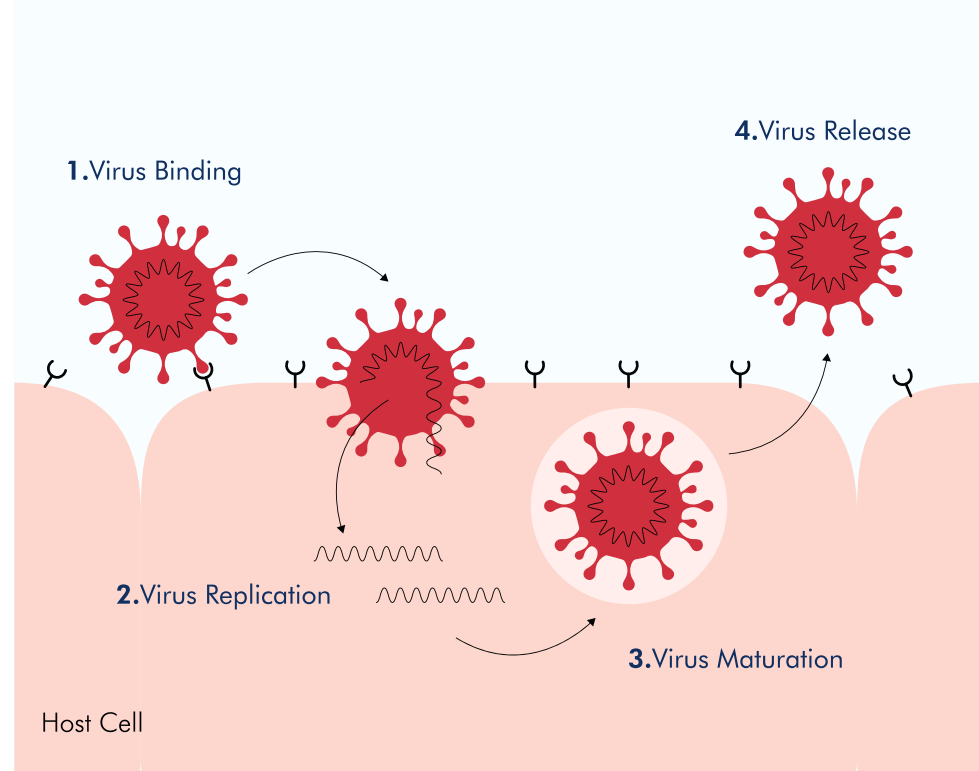


Touching any such infected surface and then touching one's mouth, nose or eyes

Structure of Coronavirus



Transmission of Coronavirus to Human Cell



1. Virus Binding

Spikes on the outer surface of Coronavirus are responsible for the attachment and entry of the virus to host cells. Then the virus inserts its genetic material into the host cell.

2. Virus Replication

After the genetic material is released into the host cell, it takes control over the host's functions and replicates the genetic material.

3. Virus Maturation

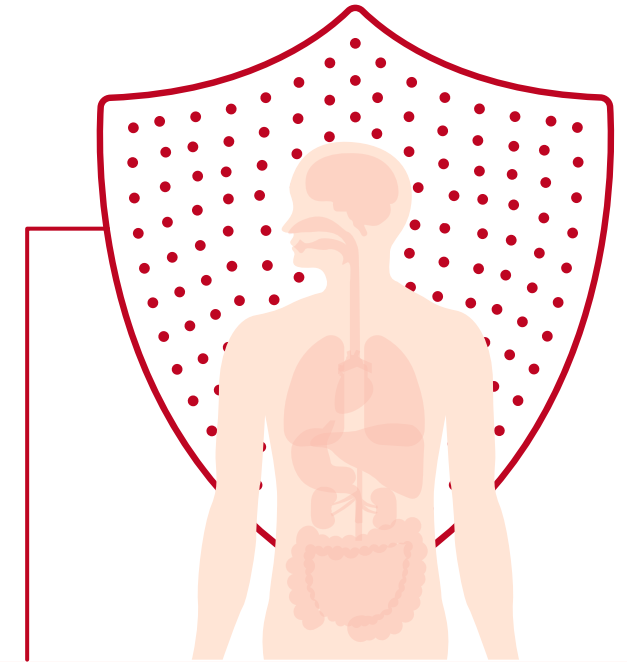
The replication of viral genetic material inside the host cell result in formation and assembly to release newly formed viruses.

4. Virus Release

The Coronavirus infected cell releases the newly formed Coronaviruses which in turn are responsible for infecting other healthy cells and multiply themselves.

Immunity Response to COVID-19

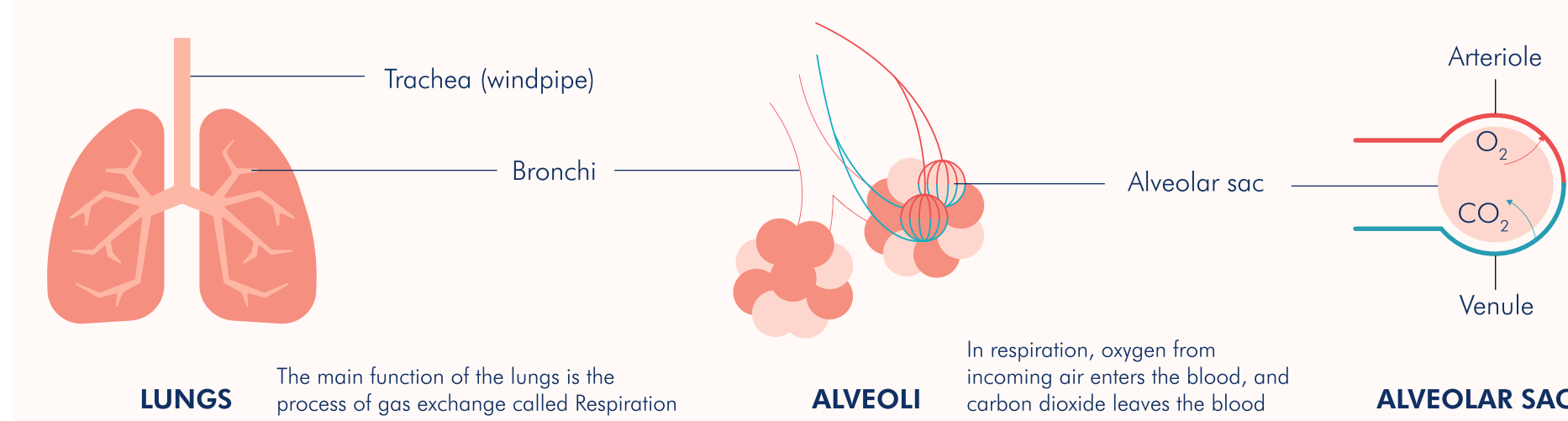
Sometimes the body's immune system overreacts during an infection. Excessive or uncontrolled levels of cytokines (small proteins against virus) are released which then activate more immune cells, resulting in hyperinflammation which along with killing the virus it also starts killing healthy cells.



This overreaction of the body's immune system called a **cytokine storm**. This can be severe or life threatening and lead to multiple organ failure.

Covid 19 primarily infects the lungs in the affected individuals and in severe cases causes death due to ARDS (Acute Respiratory Distress Syndrome) and Pneumonia.

Functioning of Human Lungs



LUNGS The main function of the lungs is the process of gas exchange called Respiration

ALVEOLI In respiration, oxygen from incoming air enters the blood, and carbon dioxide leaves the blood

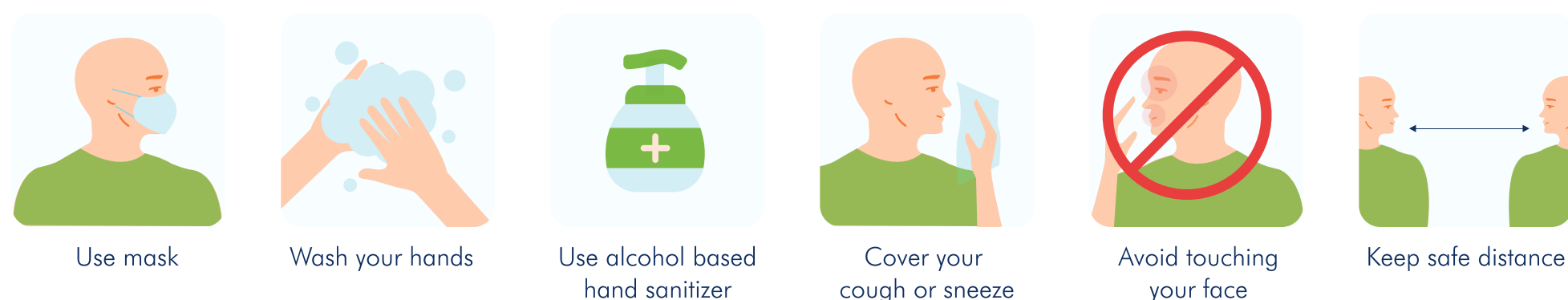
ALVEOLAR SAC

Phases of COVID-19

People with COVID-19
80%

Well Functioning Immune System		Slightly Overreacting Immune System		Overreacting Immune System	
MILD	MODERATE	SEVERE	CRITICAL	14%	6%
<p>Lungs Condition</p> <p>Virus is still in Upper Respiratory Tract and is yet to reach the Alveoli</p>	<p>Lungs Condition</p> <p>Virus reached the Alveoli and is ready to attack the Lung cells</p>	<p>Lungs Condition</p> <p>Fluid containing cellular debris is impairing the gas exchange process that supplies with oxygen</p>	<p>Lungs Condition</p> <p>Fluid containing cellular debris is aggravating the gas exchange process</p>		
<p>Symptoms</p> <p>Fever Dry cough Tiredness Slight breathlessness Muscle pain Headache Sore throat Diarrhoea</p>	<p>Symptoms</p> <p>Fever Dry cough Tiredness Breathlessness Muscle pain Headache Sore throat Dry mouth Diarrhoea Nausea</p>	<p>Symptoms</p> <p>Fever Extreme Breathlessness Chest, tummy or back pain Tight chest Lacking desire to eat or drink Seeming confused Bluish lips or face</p>	<p>Symptoms</p> <p>Severe pneumonia ARDS (Acute Respiratory Distress Syndrome) Sepsis (other bodily organs stop working)</p>		

Prevention of COVID-19



References

- <https://www.latimes.com/science/story/2020-02-29/how-this-coronavirus-kills-its-victims>
- <https://www.nationalgeographic.com/science/2020/03/covid-overview-coronavirus/>
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-by Kanchan Pathak