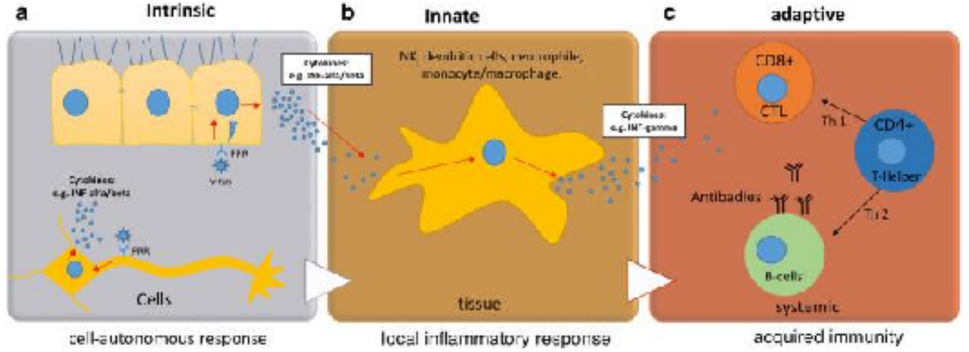
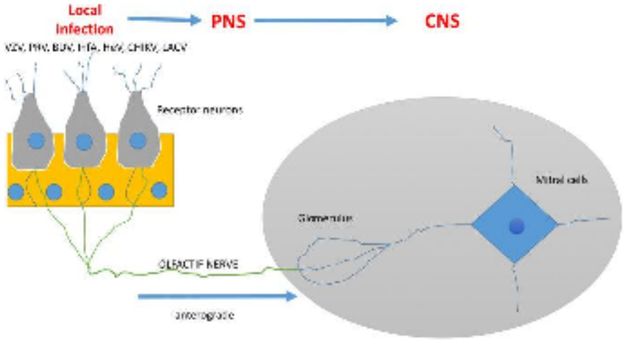
Neuroinvasion, neurotropic, and neuroinflammatory events or COVID-19

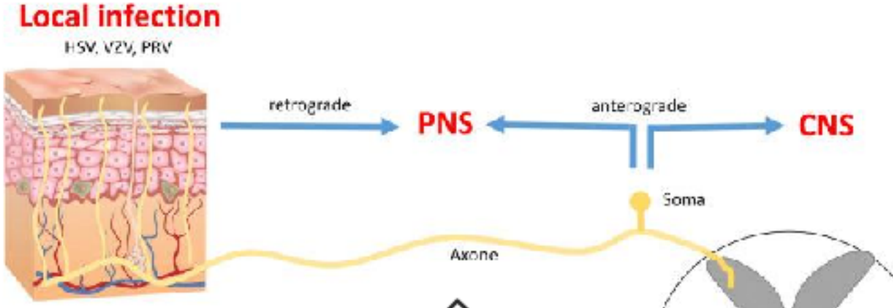
COVID-19 that causes infection of the respiratory tract and may lead to pneumonia and respiratory failure similar to SARS-CoV, which shows a neuroinvasive and neurotropic capabilities.



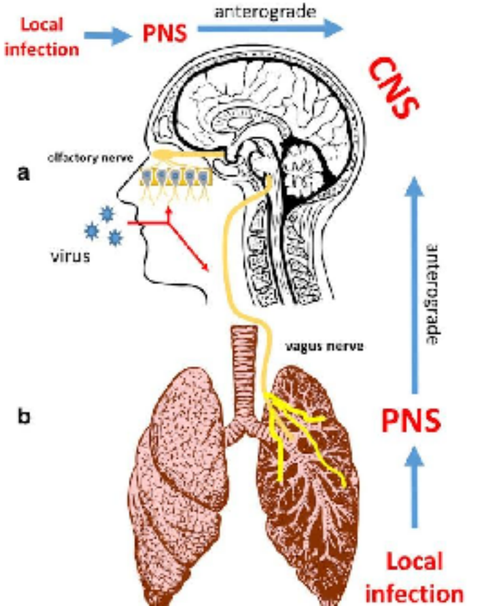
The virus can infect the PNS or CNS either by direct infection of nerve endings in the tissues and using axonal transport machinery to gain access to the CNS.



or by infecting cells of the circulatory system that ultimately carry the infection through the blood-brain barrier (BBB) into the CNS.



Some respiratory viruses spread from the lungs to the CNS through the vagus nerve.



Several viruses spread to the CNS by infecting the neuron receptor in the nasal olfactory epithelium to reach the brain by axonal transport along the olfactory nerve.

a) Several viruses spread to the CNS by infecting the neuron receptor in the nasal olfactory epithelium to reach the brain by axonal transport along the olfactory nerve.

b) Some respiratory viruses spread from the lungs to the CNS through the vagus nerve.