

Demystifying COVID 19

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COVID 19 virus

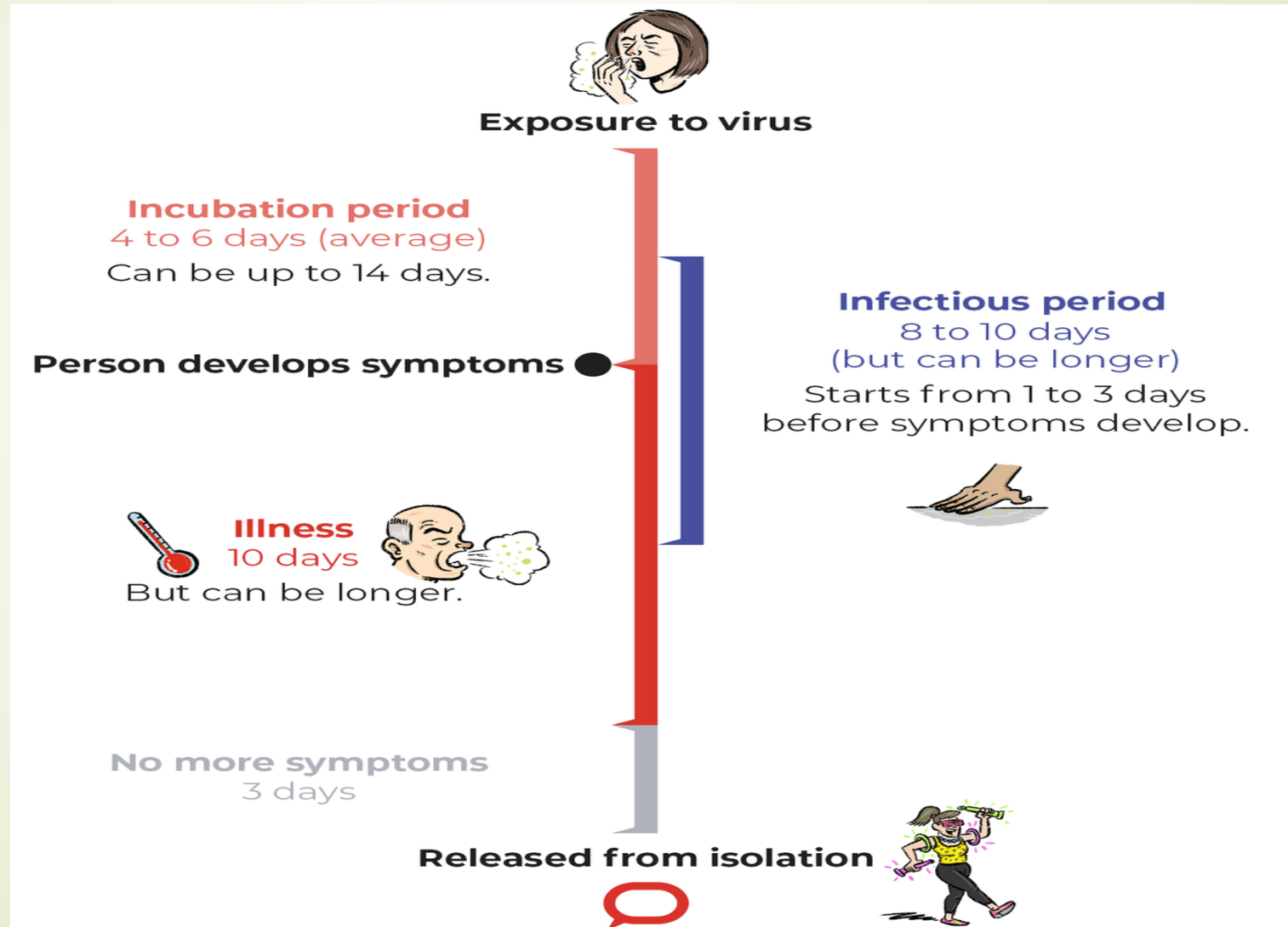
- ▶ It is human and animal pathogen
 - ▶ 6 version
 - ▶ 4 of them cause the common cold
 - ▶ 2 of them cause serious illness (SARS and MERS)
- ▶ In 2019 COVID 19 was found to cause a cluster of pneumonias in Wuhan
- ▶ it has rapidly spread to the entire world infecting ~100,000,000 people and killing over 2,000,000



How is COVID 19 spread

- Spread thru close contact from person to person
 - Spread can happen even for people near each other, up to approximately 6ft apart
 - Can be spread by people that are asymptomatic
 - Can be spread thru respiratory droplets (cough, sneeze, etc.), if absorbed thru mucus membranes(nose, mouth and eyes)
 - More contagious than influenza (less contagious than measles)
 - It can be spread thru airborne transmission
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What's COVID 19's incubation period

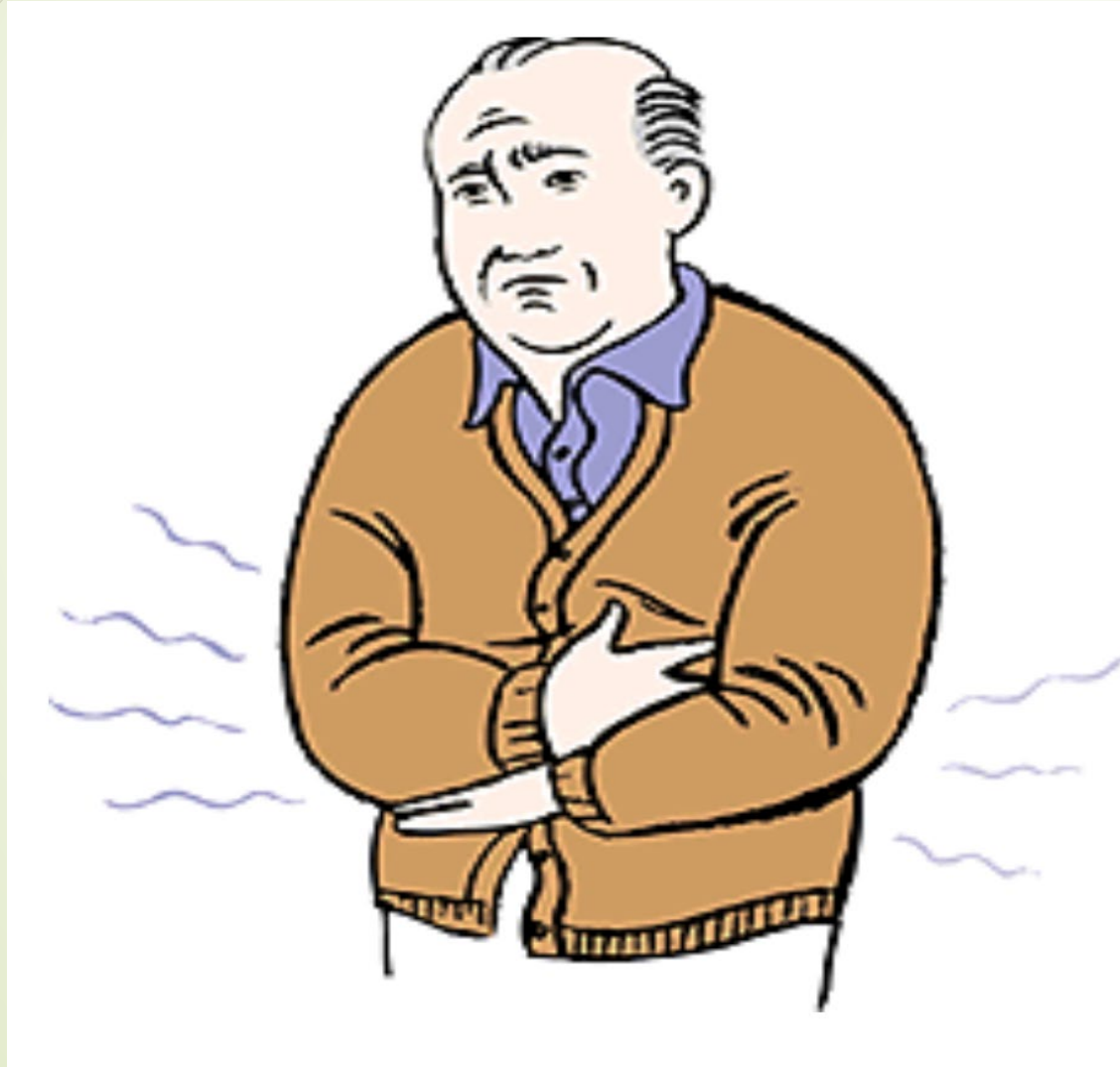




Testing for COVID 19

- ▶ Molecular test - swab
 - ▶ Diagnostic for active infection, most accurate
 - ▶ Examples: NAAT, LAMP or PCR test
- ▶ Antigen test – swab
 - ▶ Diagnostic for active infection, fastest processing, less accurate
 - ▶ False positives in areas with low viral load
 - ▶ False negative in areas with high viral load
- ▶ Antibody test - blood test
 - ▶ Proof of past infection, less accurate

Clinical Presentation





Clinical presentation of COVID 19

- ▶ Most common initial presentation:
 - ▶ Cough – 50%
 - ▶ Fever - 43%
 - ▶ Myalgia – 36%
 - ▶ Headache – 34%
- ▶ Less Common presentation:
 - ▶ Diarrhea – 19%
 - ▶ Sore throat – 20%
 - ▶ Loss of sense of smell/taste – 10%



Serious manifestation of COVID 19

- ▶ Pneumonia
 - ▶ Fever
 - ▶ Cough
 - ▶ Dyspnea
 - ▶ CXR: B/L infiltrates

- ▶ Acute respiratory distress syndrome (ARDS)
 - ▶ Most common cause of death
 - ▶ Leading cause of respiratory failure



Mortality of COVID 19 in US

- ▶ Confirmed deaths > 400,000
- ▶ Excess death rate ~ 400,000
- ▶ 2020 was the deadliest year for United States based on USA Today On 1/22/21



Other complications of COVID 19

- ▶ Cardiovascular: heart attacks, arrhythmia and shock
- ▶ **Thromboembolic events: DVT, pulmonary embolism, stroke**
- ▶ Neurological: encephalopathy
- ▶ Inflammation: cytokines release syndrome, Kawasaki disease (mostly in children)
- ▶ Secondary infections: bacterial and fungal infections



B L O O D T Y P E S




Blood type and COVID 19

- ▶ Patients with blood type O and Rhesus negative have lower risk of SARS CoV2 infection or severe disease (Ann Intern Med. 11/24/2020)
 - ▶ Based on retrospective study of 225,000 patients that tested positive between Jan 15th and June 30th
 - ▶ Type O had 2.1% chance of getting the infection (lowest out of all blood groups)
 - ▶ Rh- was protective as well
 - ▶ Type B+ had 4.2% chance (highest out of all blood groups)



Treatments

- Outpatient
 - Monoclonal antibody – decreases hospitalization
- Inpatient
 - Remdisivir – speeds recovery
 - Dexamethasone – decreases mortality in severely ill patients



Treatments that “May not” work

- ▶ Hydroxychloroquin – RA drug
- ▶ Convalescent plasma therapy in severely ill
- ▶ Lopinavir/Ritonavir – HIV med
- ▶ Tocilizumab – IL-6 inhibitor



Treatment that show promise

- ▶ Ivermectin
 - ▶ Colchicine
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Recovery from COVID 19

- ▶ Time to recovery is highly variable
 - ▶ Mild infections: less than 2 weeks
 - ▶ Severe disease: can be much longer (2-3 months)

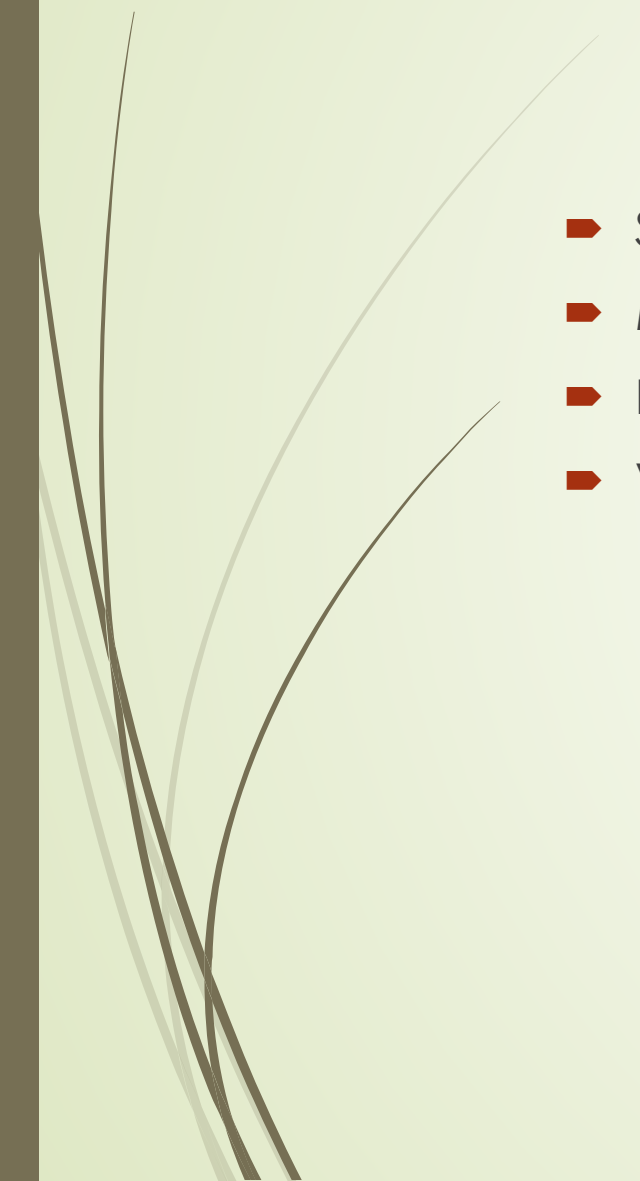


COVID 19 sequela

- Fatigue
 - Shortness of breath
 - Chest pain
 - Cough
 - Cognitive deficit
- 



COVID 19 prevention

- Social distancing
 - Masks
 - Hygiene
 - VACCINES
- 

MAKE A DIFFERENCE DURING THE COVID-19 PANDEMIC



Wear a Mask and Avoid Crowds



Maintain distance

Save PPE for Those on the Front Lines

The general public *should* wear cloth face coverings



Follow Food Safety Guidelines



Donate Blood and Plasma



Report Fraudulent COVID-19 Tests, Vaccines and Treatments



COVID 19 vaccines

- Types
 - COVID m-RNA Vaccines
 - Pfizer-BioNtech
 - Moderna
 - Viral vector COVID vaccines
 - Astrazeneca





Vaccine Myths



- The m-RNA vaccines will change our DNA
- We can get the infection from the vaccines
- It can cause infertility
- If I already had COVID, then I don't need the Vaccine
- Researchers rushed the development of the vaccine so its safety and effectiveness can not be trusted
- Getting COVID 19 vaccine means I can stop wearing my mask
- The side effects of COVID 19 vaccines are dangerous
- The technology of m-RNA vaccine is brand new





How do we end this pandemic

- ▶ We need to reach HERD immunity
 - ▶ ~ 10% of US population has gotten the infection thus far
 - ▶ We need ~ 70%-80% of the population to get vaccinated
 - ▶ We need 1.5 million vaccinations daily
 - ▶ Obstacles:
 - ▶ Limited supply
 - ▶ Many non-believers in the vaccines
 - ▶ Uncertainties in duration of the protection
 - ▶ Vaccines are not 100% effective
 - ▶ Vaccinated individuals can still carry the disease and infect others not immune
 - ▶ Virus mutation



New strain of COVID virus

- ▶ There are multiple, and the most concerning as of today are:
 - ▶ UK strain
 - ▶ More contagious (up to 70% more transmissible), possibly more deadly (30% higher risk of death-weak evidence)
 - ▶ Pfizer vaccine still effective
 - ▶ South Africa strain
 - ▶ More contagious, maybe be able to evade antibodies (makes vaccines less effective)
 - ▶ Moderna vaccine appears to still be effective
 - ▶ Brazil strain
 - ▶ Similar to the South African strain

Life after pandemic

- ▶ This shall pass
- ▶ Corona virus 19 will most likely never be eradicated
- ▶ COVID can morph into a seasonal disease
- ▶ As exposure increases the “NOVEL” corona virus can become an “ENDEMIC” virus, similar to the common cold
- ▶ Moderna is working on booster shots directed at the new variants – which will most likely will be ongoing

