

Getting to Know Your Immune System & the Coronavirus

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Immune system 101

- The Immune system is a complex network of cells and proteins
- Its function is to help the body fight infection
- The main parts of the immune system are:
 - \circ white blood cells, antibodies,
 - lymphatic system,
 - \circ spleen, thymus
 - bone marrow

How does the body fight a bacterial infection vs. viral infe

- Pathway to entry:
 - **Bacteria** Cuts, contaminated food or water, touching contaminated surfaces.
 - Bacteria invades the body outside the cell
 - Viral Is spread from via person to person contact (or rarely animal-to-person contact)
 - Viruses invade the inside of cells
- Body's Immune Response:
 - Bacteria The body fights bacterial infection by increasing local blood flow (inflammation) and sending in cells from the immune system to attack and destroy the bacteria. The Immune system also send antibodies to attack the bacteria. Antibiotics work by disrupting the growth and replication processes of the bacteria.
 - **Virus** It is more difficult for the immune system to fight viral infection since virus' hide inside cells.
 - Special immune cells called T-lymphocytes are sent to destroy viral infected cells



What is the Coronavirus?

- The 2019 Novel Coronavirus, or **2019-nCoV**, is a new respiratory virus first identified in Wuhan, Hubei Province, China.
- It is common in animals. However, it rarely, infects people. Some cases of the 2019-nCoV suggests an animal to person transmission
- The virus is most commonly spread via person to person contact similarly to Virus such as MERS or SARS
- The incubation period ~5 days

Frequent Symptoms

- Fever (83–98%), cough (76%–82%), and myalgia or fatigue (11–44%)
- Early sore throat in some
- Less common sputum production, headache, and diarrhea.
- Fever pattern not fully understood; may be prolonged and intermittent.



How is it different from other viruses?

Differences from Influenza:

- Influenza rate 3% and 11%, of population, CDC estimates between 9.3 million and 49 million illnesses each year in the United States since 2010
- Death Rate is Higher with Coronavirus
- Children younger than 18 are more than twice as likely to develop a symptomatic flu infection than adults 65 and older
- Seasonal incidence fall winter (dec feb)
- Diff strains H3N2, h1n1, A & B
- Vaccines, dx rapid kits, anti virals



Transmission of the Virus

Main transmission of the virus is close contact:

a) approx 6 feet (2 meters) + prolonged exposure time

b) direct contact with infectious secretions

c.) Any person in close contact with + 2019nCoV (history of travel from Hubei Province, or mainland China) within 14 days of symptom onset

Risk Factors:

- Older patients (65+ years)
- Young children (less than 1 years old)
- Those with chronic medical conditions
- Those who are immunocompromised



Treatment and Prevention

<u>Treatment</u>

• No vaccine or specific treatment; care is supportive.

Prevention

- Best prevention avoid exposure to virus
- Prevent spread by
 - Wash your hands often with soap and water
 - Avoid touching eyes, nose, and mouth with unwashed hands.
 - Avoid close contact with sick people.
 - Stay home when sick.
 - Cover mouth when coughing or sneezing with tissue, then throw the tissue in the trash.
 - Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe.

Support / Boost up your immune system

- Get Plenty of Rest
- Diet
- Excercise Regularly

