




COVID-19:

Epidemiology
Screening
Prevention

Arnav Agarwal

Resident Physician
University of Toronto

 @iArnavAgarwal

Overview

1. Who is at **risk**?
2. How is the virus **transmitted**?
3. What are common **signs and symptoms**?
4. What are **preventative measures** one can take?
5. Who and how should one get **tested**?
6. What do we know about **treatment**?
7. What **resources** can I access?

Who is **at risk**?

ADVANCED AGE

LUNG DISEASE

HEART DISEASE

DIABETES

IMMUNOCOMPROMISED

How is the virus **transmitted**?

Incubation Period



Typically 2-14 days.

Modes of Transmission

PERSON-TO-PERSON

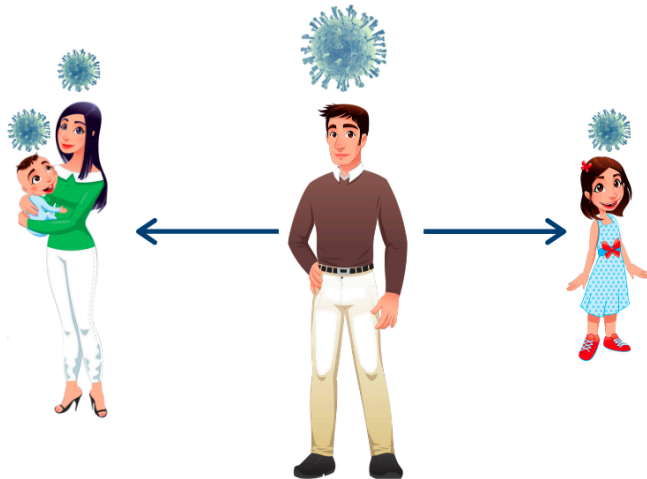
- Between people who are in close contact with one another (within 2m)
- Through respiratory droplets produced when an infected person coughs or sneezes

CONTAMINATED SURFACES

- Can become infected touching a surface or object that has the virus on it and then by touching one's own mouth, nose, or possibly eyes

Why is it relevant to **young individuals**?

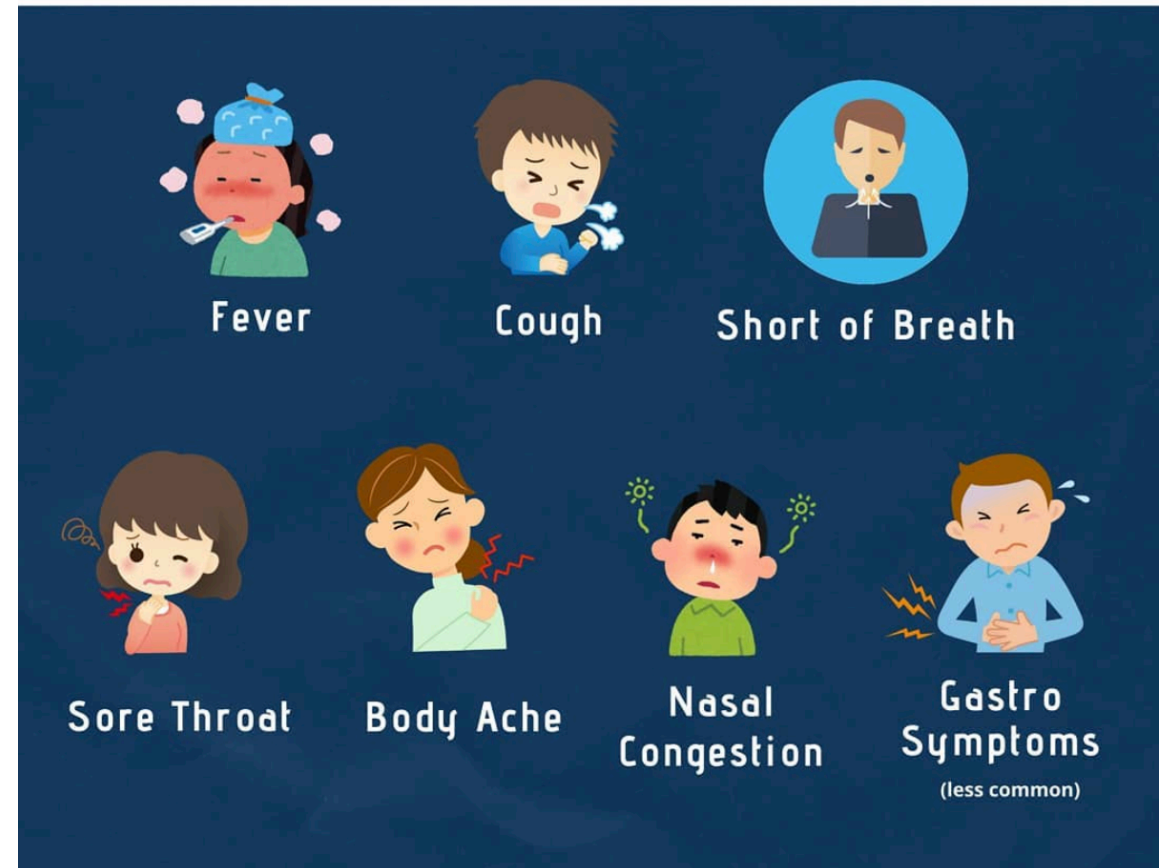
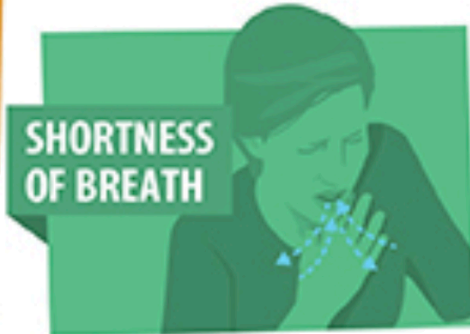
You could expose others in your family to the virus before becoming symptomatic.



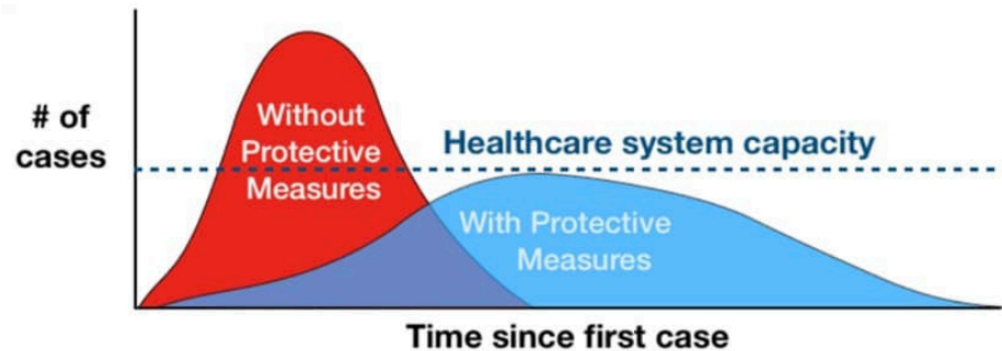
A simple cold for you, could be a lot worse for your grandparents.



What are **common signs and symptoms**?



#FLATTENTHECURVE



Adapted from CDC / The Economist

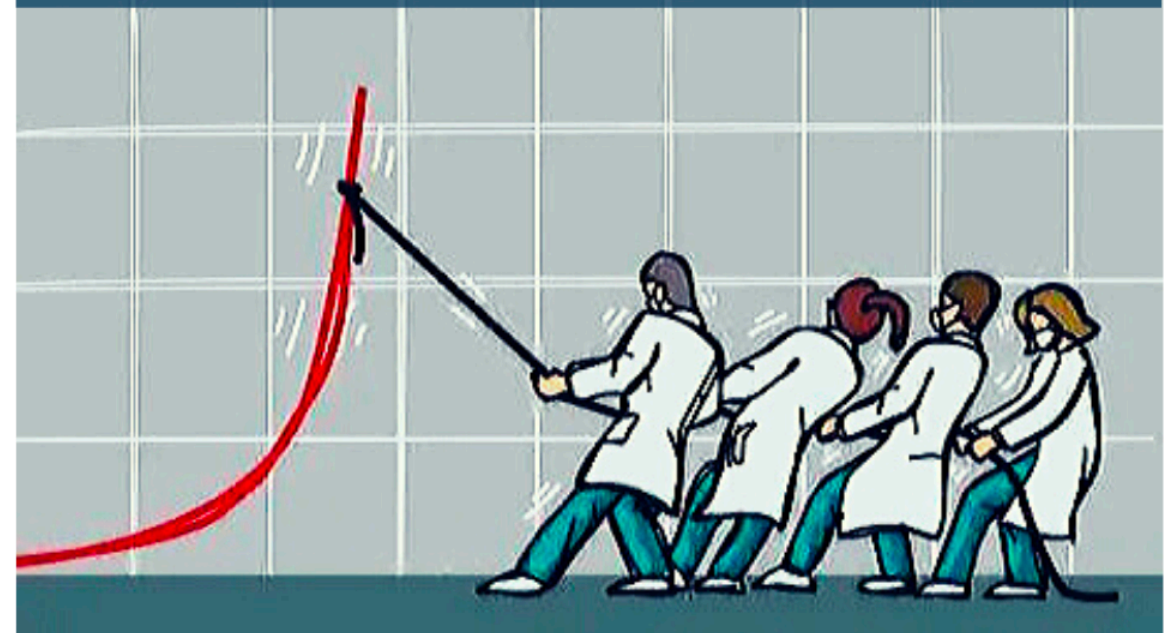
**WE MUST
SLOW DOWN
THE RISE IN
NUMBER OF CASES**

AND

**LOWER THE
TOTAL NUMBER OF
CASES AT ANY ONE
TIME**

HELP OUR
FRONTLINE WORKERS
FLATTEN THE CURVE

#flattenthecurve



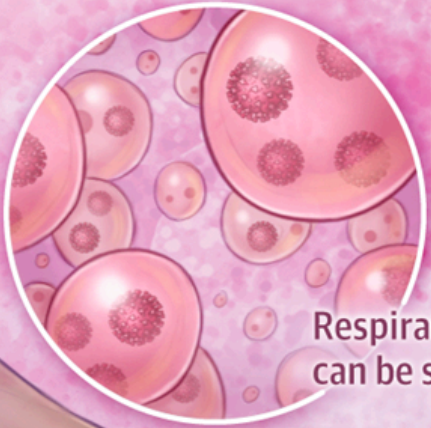
What are **preventative measures** one can take?

- **Wash your hands(!)**
- **Social distancing(!)**
- Assess your health risk
- Avoid facial contact
- Avoid hand contact
- Cover your cough
- Disinfect surfaces
- Use protective equipment appropriately
- Seek care as appropriate

Stopping the spread of COVID-19

COVID-19 is a respiratory infection caused by the SARS-CoV-2 virus, commonly called coronavirus. It causes various symptoms including fever, dry cough, shortness of breath, fatigue, and body aches that usually appear 2-14 days after exposure.

The virus can be spread via droplets from infected persons coughing or sneezing, and via contact with surfaces that have the virus-containing droplets on them.



Respiratory droplets containing the virus can be spread widely by sneezing or coughing.

Droplets containing the virus can transfer from a surface to your hands then to your face, causing infection.

To avoid spreading COVID-19

- Wash your hands frequently
- Do not touch your face with unwashed hands
- Regularly disinfect surfaces and items you might touch
- Distance yourself from those who are coughing or sneezing
- If you cough or sneeze, do so into your elbow
- Dispose of tissues after one use



how to wash your hands

1



WET

Wet your hands with clean, running water, turn off the tap, and apply soap.

2



LATHER

Lather your hands by rubbing them together with soap. Lather backs of your hands, between your fingers, and under your nails.

3



SCRUB

Scrub your hands for at least 20 seconds. Hum the "Happy Birthday" song from beginning to end twice.

4



RINSE

Rinse your hands well under clean, running water.

5



DRY

Dry your hands using a clean towel or air dry them.

HAND WASHING TECHNIQUE

SOURCE: CENTERS FOR DISEASE CONTROL (CDC)

STAY HEALTHY

KNOW WHEN TO

WASH YOUR HANDS

WASH YOUR HANDS OFTEN, ESPECIALLY DURING THESE KEY TIMES WHEN YOU ARE LIKELY TO GET AND SPREAD GERMS

BEFORE, DURING, AND AFTER PREPARING FOOD

BEFORE EATING FOOD

BEFORE AND AFTER CARING FOR SOMEONE AT HOME WHO IS SICK WITH VOMITING OR DIARRHEA

BEFORE AND AFTER TREATING A CUT OR WOUND

AFTER CHANGING DIAPERS OR CLEANING UP A CHILD WHO HAS USED THE TOILET

AFTER BLOWING YOUR NOSE, COUGHING, OR SNEEZING

AFTER TOUCHING AN ANIMAL, ANIMAL FEED, OR ANIMAL WASTE

AFTER HANDLING PET FOOD OR PET TREATS

AFTER TOUCHING GARBAGE

Protect others from getting sick

When coughing and sneezing **cover mouth and nose** with flexed elbow or tissue



Throw tissue into closed bin immediately after use

Clean hands with alcohol-based hand rub or soap and water after coughing or sneezing and when caring for the sick



Protect others from getting sick



Avoid close contact when you are experiencing cough and fever

Avoid spitting in public



If you have fever, cough and difficulty breathing **seek medical care early** and share previous travel history with your health care provider



What are **preventative measures** Canada/Ontario has taken?

- Avoiding large gatherings
- Banning non-essential travel
- Closing borders
- Restricting non-essential services
- Public education (e.g. social distancing)

Who should get **tested**?

| | Self-monitoring | Self-isolation | Isolation |
|------------------------|--|---|---|
| Clinical status | No symptoms + Possible exposure | No symptoms + Possible exposure | Symptoms needing tx |
| What to do | Monitor x 14 d Safe practices | Stay at home Avoid contact | Stay at home Avoid contact |
| When to do so | Close contact with elderly or medically vulnerable | Close contact with exposure Recent travel | Diagnosed case Pending results Public health advice |

- If symptomatic needing assessment – first line care:
 - Assessment centres
 - Virtual clinic visits
 - Telehealth

Not enough resources to swab everyone!

Swabs are reserved for high-risk patients

- Symptomatic and contact with COVID-19 positive patient
- Admitted to hospital
- Long-term care or retirement home residents
- First Nations living on a reserve
- Healthcare workers

*There may be exceptions to this as determined by Public Health

**Most of us will have
mild symptoms and
can fight the virus
on our own!**



If you need further guidance go to:
ontario.ca/coronavirus

or call:

Public Health COVID-19 Hotline (905-974-9848)
Telehealth Ontario (1-866-797-0000)
Your Family Doctor

What do we know about **treatment?**



Supportive care:
standard of care.



Vaccine:
under development.



Antiretrovirals (lopinavir and ritonavir):
recently found to not be effective.



Chloroquine and hydroxychloroquine:
early promise.

What **resources** can I use?

- World Health Organization (WHO) hub
- Centers for Disease Control (CDC) guidance
- Telehealth
- Virtual clinics and assessment centres
- Self-assessment tool (Toronto version)
- Peer-reviewed literature



Thank you!

Please feel free to reach out with questions and ideas.

Email address: arnav.agarwal@mail.utoronto.ca

Twitter: @iArnavAgarwal

Note: this information does not constitute formal medical advice.

Acknowledgements: Angela Khanna - @conquercovid19