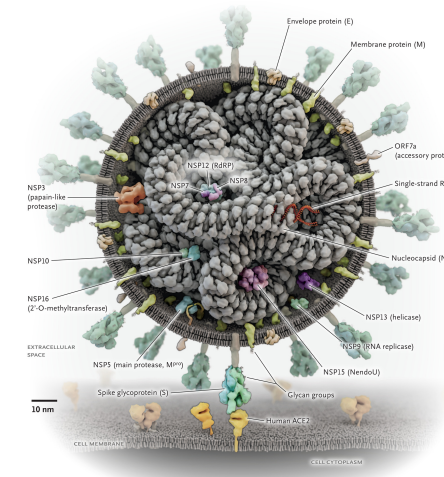


# Minimizing droplet and airborne transmission of SARS-CoV2



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# How are infectious viruses transmitted?

## Transmission routes

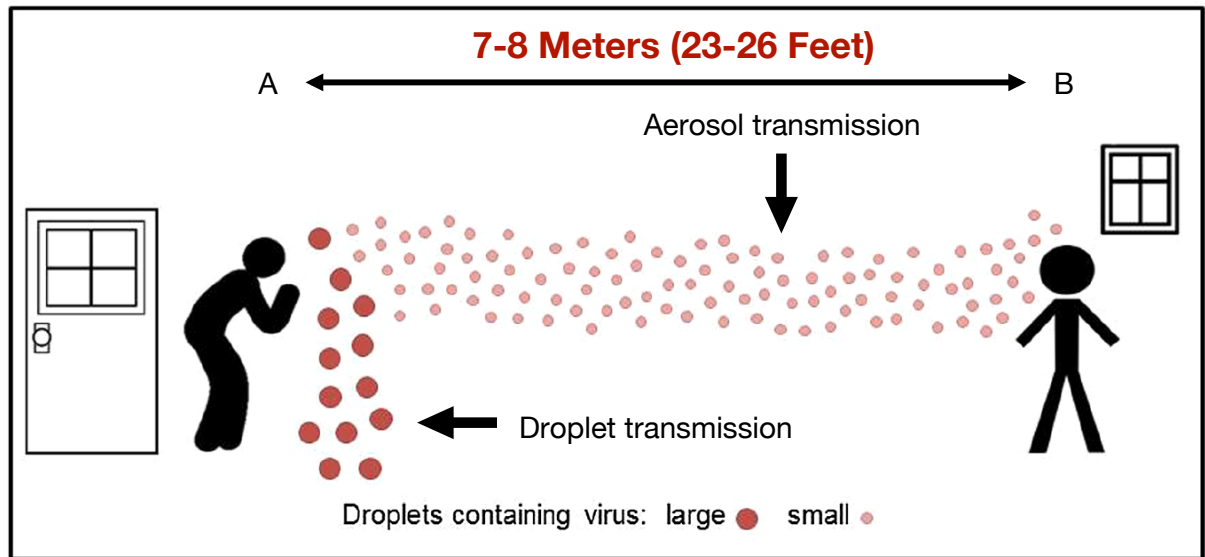
- Close contact

(1) droplets (sneezing, coughing, singing, talking, exhaling)

(2) touching surfaces where contaminated droplets were deposited (door knob, icon, spoon, red cloth)

- Inhalation

(3) small aerosolized droplets

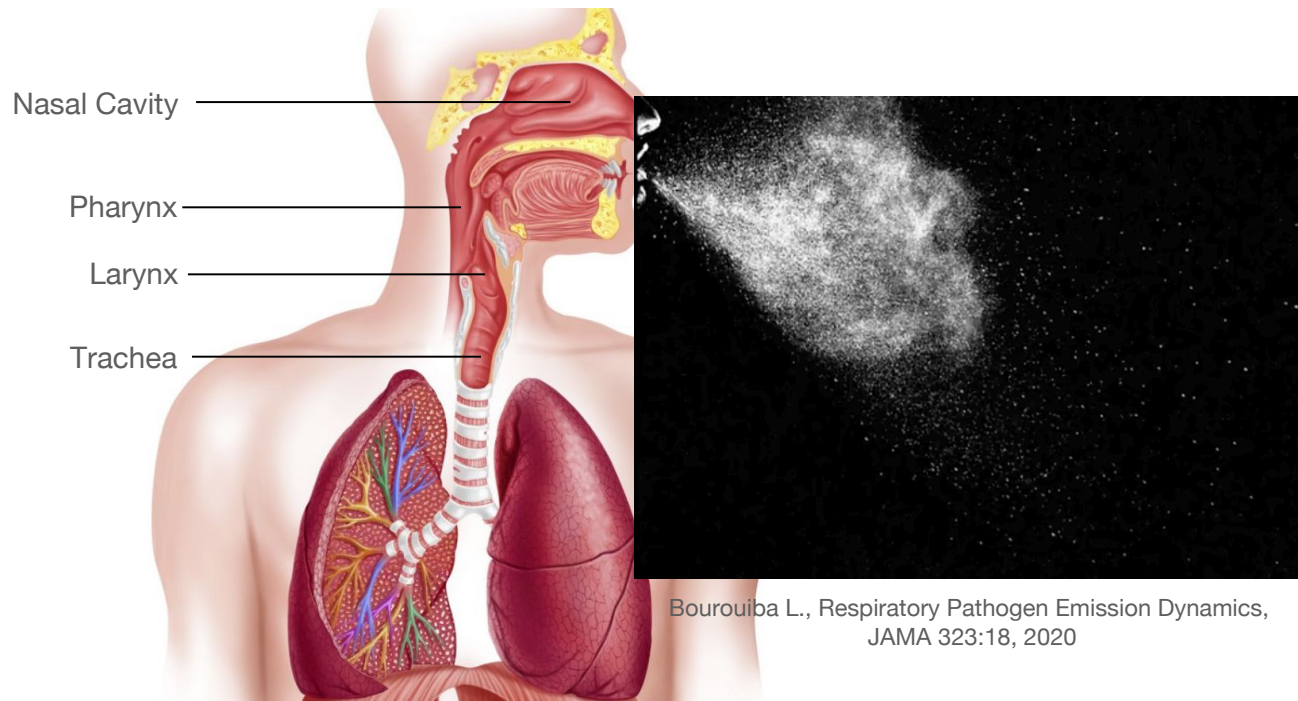


Morawska L. and Can J., "Airborne transmission of SARS-CoV2: The world should face the reality", *Environmental International*, 139; 105730, 2020

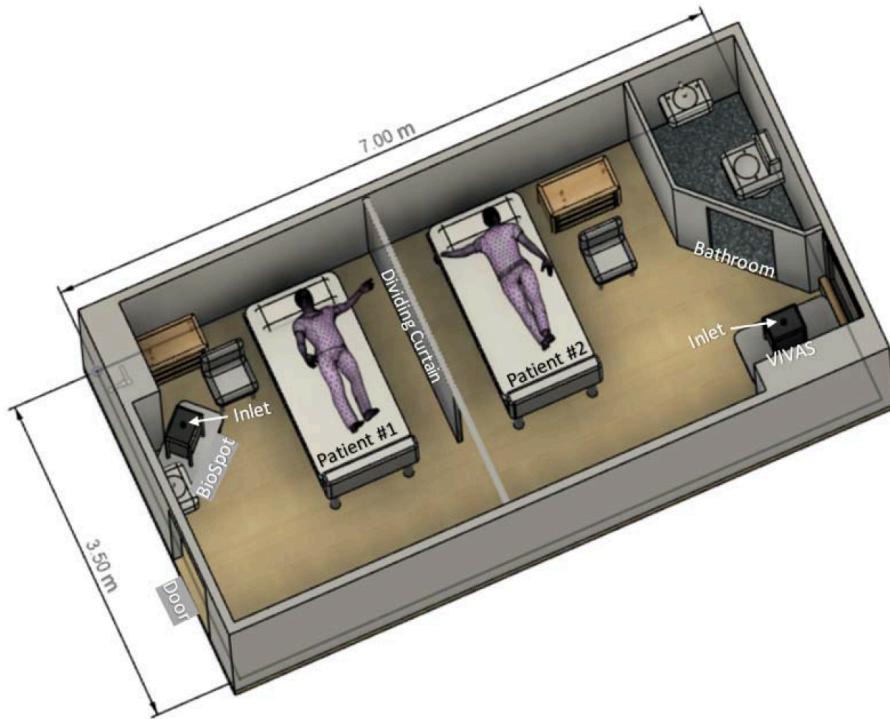
Bourouiba L. "Turbulent gas clouds and respiratory pathogen emissions: potential implications for reducing transmission of COVID-19". *JAMA* 323:18, 2020

# Process of aerosolization

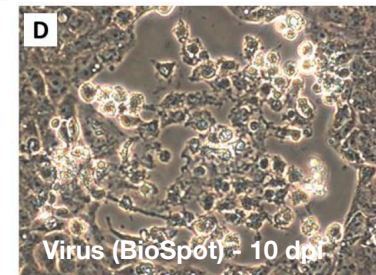
## Expiratory activities



# Facing reality: infectious SARS-CoV2 found in the air



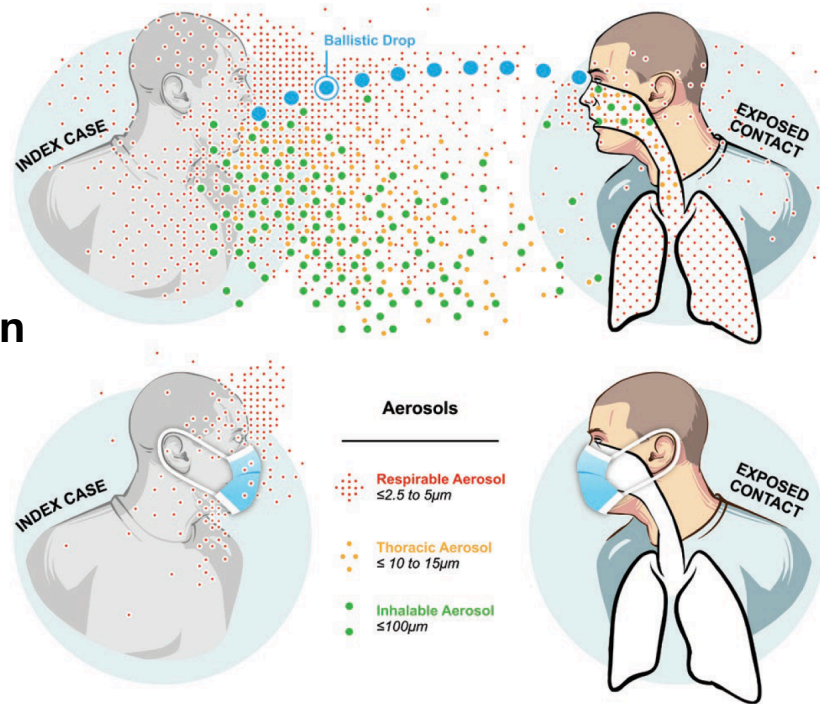
- (1) Infectious virus in the air
- (2) Up to 16 feet away
- (3) In tiny droplets (aerosols)



Lednický et al., "Viable SARS-CoV-2 in the air of a hospital room 1 with COVID-19 patients", 2020 (pre-print, not peer reviewed)

# Masks Reduce Airborne Transmission

Masks limit evaporation of small droplets



# SARS-CoV-2 Transmission

## Gifts preparation and clergy communion

deposition of contaminated droplets  
and aerosols on the Gifts

Super-spreading event

Recommendation: Wear a mask, mind the breath,  
good ventilation in the altar.

Commune carefully with the  
spoon or an alternate method



# SARS-CoV-2 Transmission

## Distribution of Communion

deposition of contaminated droplets and aerosols on the spoon (and into the chalice)




**Recommendation:** Use a new spoon for each individual and avoid having the chalice directly under the person's breath and use disposable napkins (no cloth).

**WORSHIP GUIDELINES**  
**During Services**  
What you are asked to do as you attend worship services

**HOW TO RECEIVE HOLY COMMUNION**

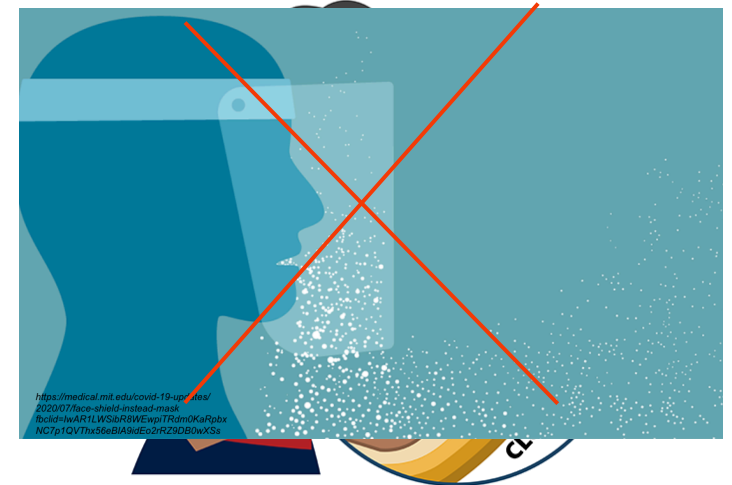
Orthodox Christians believe that in receiving Holy Communion we are receiving the Body and Blood of Jesus Christ. The Body and Blood of Jesus Christ is not a vehicle for the transmission of disease. However, with pastoral sensitivity and love toward all parishioners during this unique time, we will distribute Holy Communion in the following manner:



- Please remove your face mask prior to arriving at the Holy Chalice.
- When receiving, open your mouth fully and tilt your head back so the priest may place the Communion spoon in your mouth and turn it over to allow the Holy Gifts to drop in your mouth. Please do not close your lips on the spoon.
- Please do not touch the Communion cloth or dab your lips on it. There is no need, since your lips have not touched the Holy Gifts. It will be held by the altar attendants to protect against spills.
- After receiving Holy Communion but before replacing your mask, proceed to the Antidoron tray to take a piece of blessed bread and consume it before putting on your mask again. Then, please wear your face mask for the remainder of the service.

# SARS-CoV-2 Transmission

Singing, chanting, gathering in the altar



Recommendation: Masks, distance, limit the number of individuals in the altar, improve ventilation, use a digital CO2 meter to know if room is well ventilated



**Thank you.**

# Airborne transmission of viruses

Directive 1 = shared spoon drop-in-method  
**Directive 2 = multiple spoons**



Linsey Marr <[redacted]>

Tue 6/16/2020 8:52 AM

To: Hermina Nedelescu



The New York Times

[redacted] I'm familiar with various communion practices and the importance of this sacrament. Directive 2 is definitely better than Directive 1. With 1, I worry about everyone breathing on the spoon, as you mentioned. This could transfer virus to the spoon, which would then be transferred to the wine and spread to everyone else. Parishioners should distance as much as possible while lining up for communion. If the priest is asymptotically or presymptomatically infected and shedding lots of virus, there is the chance for a superspreading event because he comes into close contact with so many people.

## The Scientist, the Air and the Virus

Most of us had never heard of aerosol science before the pandemic. Then Virginia Tech's Linsey Marr showed up and became our tour guide to the invisible world of airborne particles.



Linsey Marr Peter Means