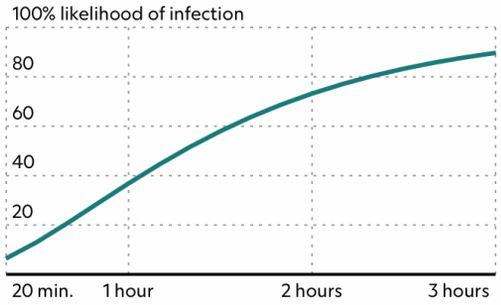
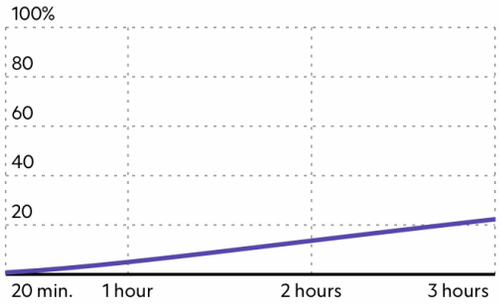
I live in an area where 1 percent of the population is infected. I'm wearing a mask that is 50 percent effective and have visited a room 20 times —it has 12 square feet of space per person. Everyone else in the room is wearing a mask that is 30 percent effective.

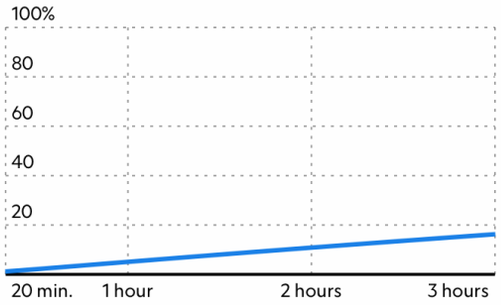
An indoor gathering
A poorly ventilated space with pervasive talking and movement



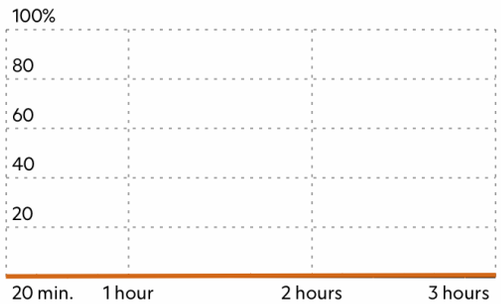
An energy-efficient office
A space with very low airflow and moderate talking and movement



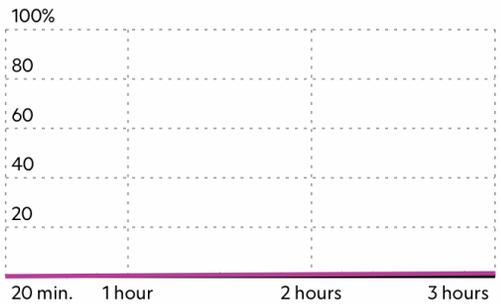
A classroom lecture
A well-ventilated room with one primary speaker, such as a teacher, and a group of listeners



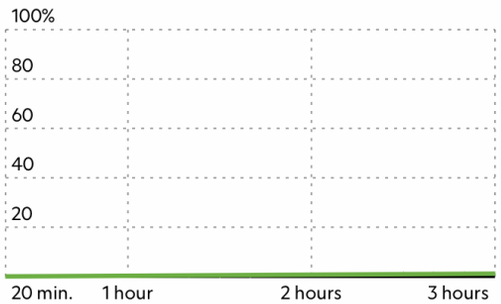
Strenuous outdoor activity
Vigorous exercise in direct sunlight



A subway ride
Well-ventilated public transit system with minimal talking and movement



A bus ride
Decently ventilated public transit mode with minimal talking and movement



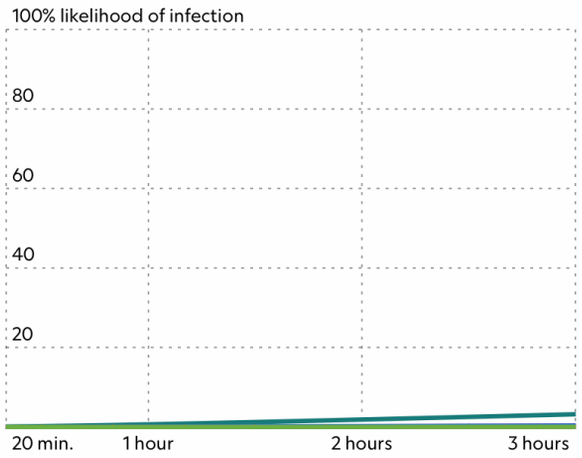
Note: The model does not fully account for how your risk increases the closer you get to an infected person, where the concentration of both aerosols and respiratory droplets will be higher. Potential risk from contaminated surfaces is also not included. All scenarios assume constant values for room temperature, pressure, humidity, and how quickly particles settle out of the air onto surfaces due to gravity. The model also assumes that no one in the local population is immune.

Source: Jose-Luis Jimenez, University of Colorado Boulder

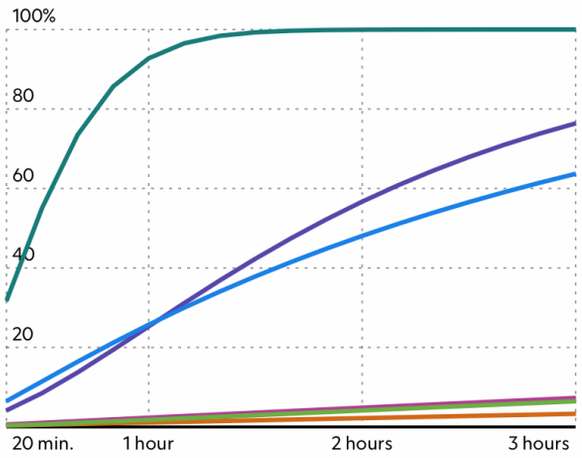
The risk of infection from SARS-CoV-2 aerosols if you experience a given scenario 20 times

An indoor gathering | An energy-efficient office | A classroom lecture | Strenuous outdoor activity | A subway ride | A bus ride

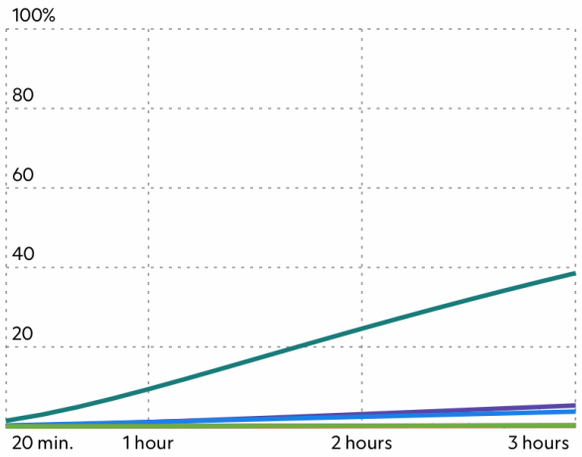
In a well-fitted N95 mask...



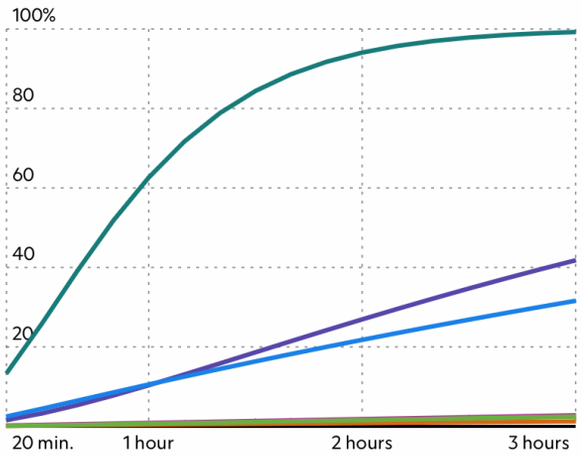
...and with no masks.



In a low infection area...



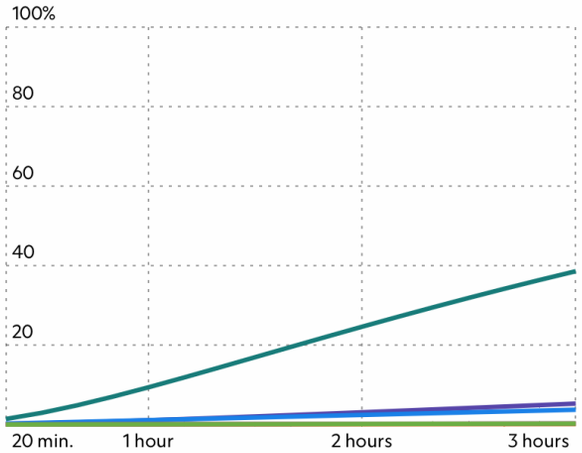
...and in an infection hot spot.



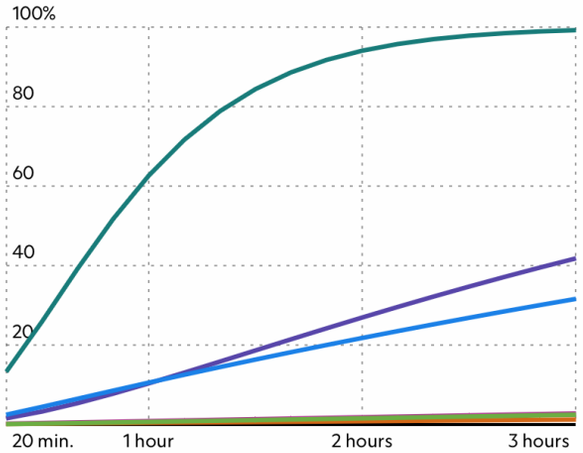
With 20 square feet of space per person...

...and with three square feet per person.

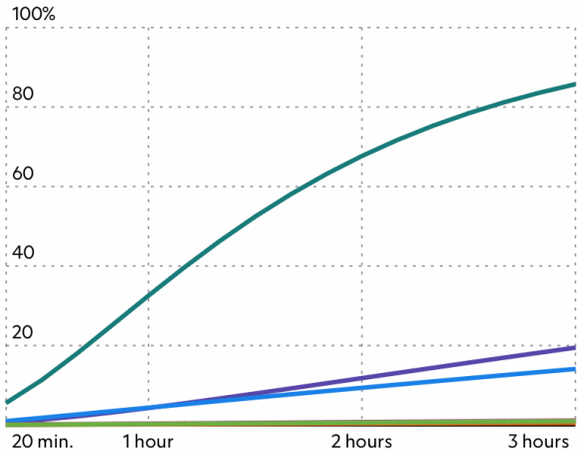
In a low infection area...



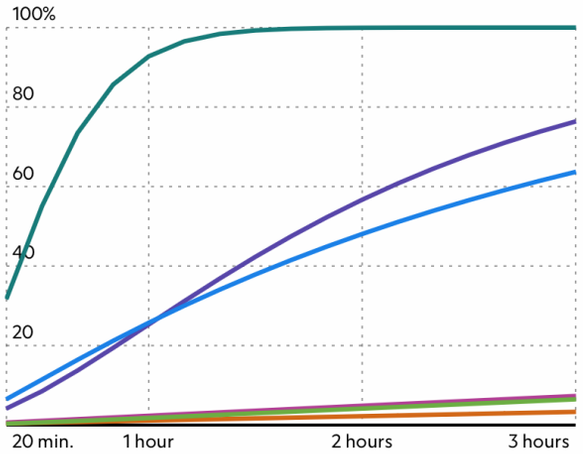
...and in an infection hot spot.



With 20 square feet of space per person...



...and with three square feet per person.



Note: This scenario assumes a well-fitted N95 mask blocks 95 percent of airborne particles. A hot spot is defined as having an infection rate of 3 percent in the local population, and a low infection area has a 0.03 percent infection rate. Unless otherwise specified, the scenarios assume 50 percent of particles pass through masks, 12 square feet of space per person at each event, and an infection rate of 2 percent. The model does not fully account for how your risk increases the closer you get to an infected person, where the concentration of both aerosols and respiratory droplets will be higher. Potential risk from contaminated surfaces is also not included. All scenarios assume constant values for room temperature, pressure, humidity, and how quickly particles settle out of the air onto surfaces due to gravity. The model also assumes that no one in the local population is immune.