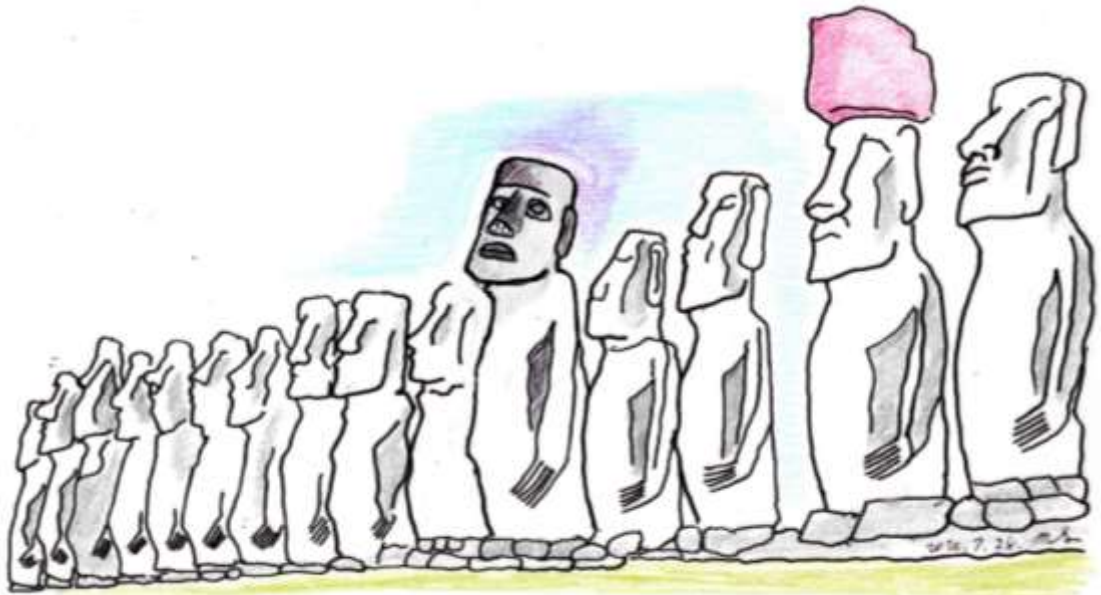


Picture
Book

Infection Control against Covid-19



Autumn 2020

Illustrated & Written by

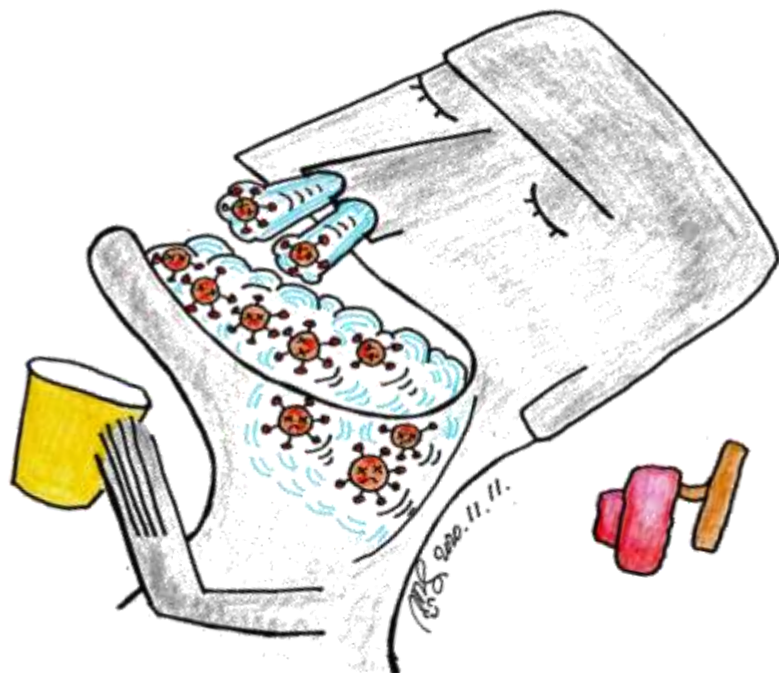
Masataka Shimotsuma MD

Contents

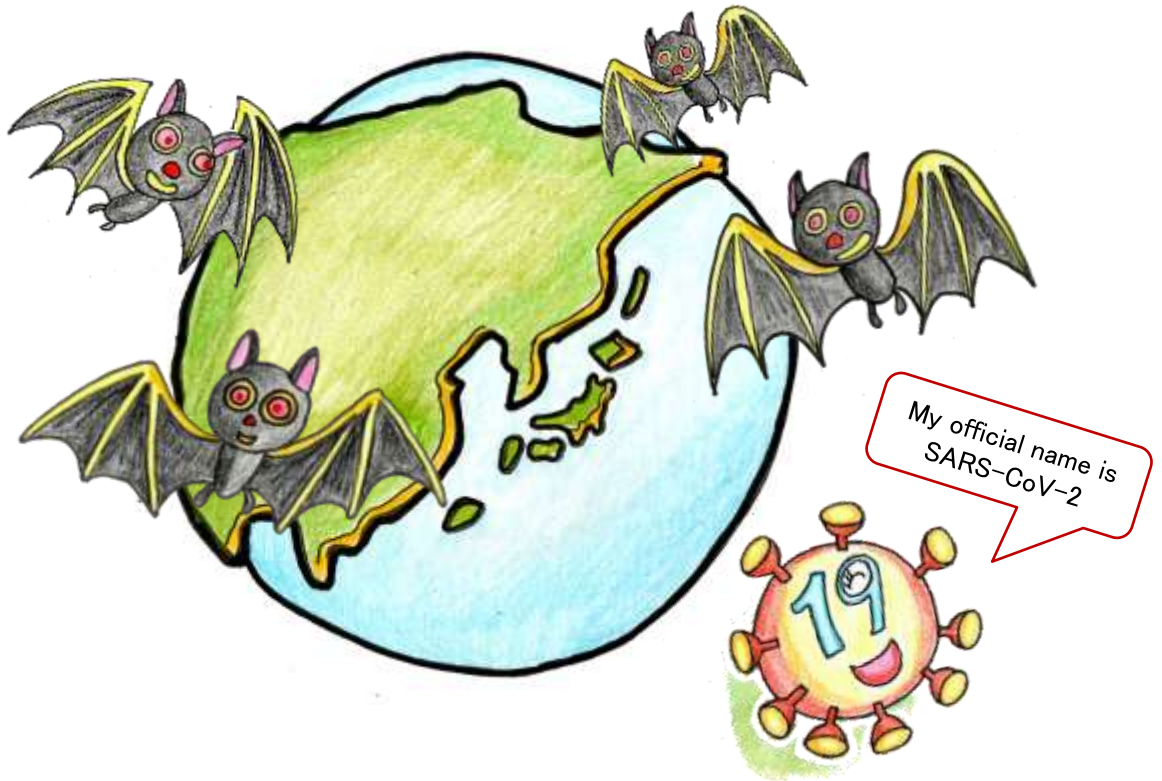
What is coronavirus disease 2019 (Covid-19) ?	P.3
Three infection patterns of Covid-19	P.4
“Five situations” that increase the risk of infection	P.6
Mechanism of infection, and symptoms of Covid-19	P.8
Infection control against Covid-19	P.10
Why is universal masking necessary ?	P.12
When you can't keep a distance, wear a mask	P.14
Clean hands when touching nose, eyes or mouth	P.16
Fingertips are important when cleaning hands	P.18
When a family member is infected ...	P.20

Gargle just after you get home, and also before going to bed

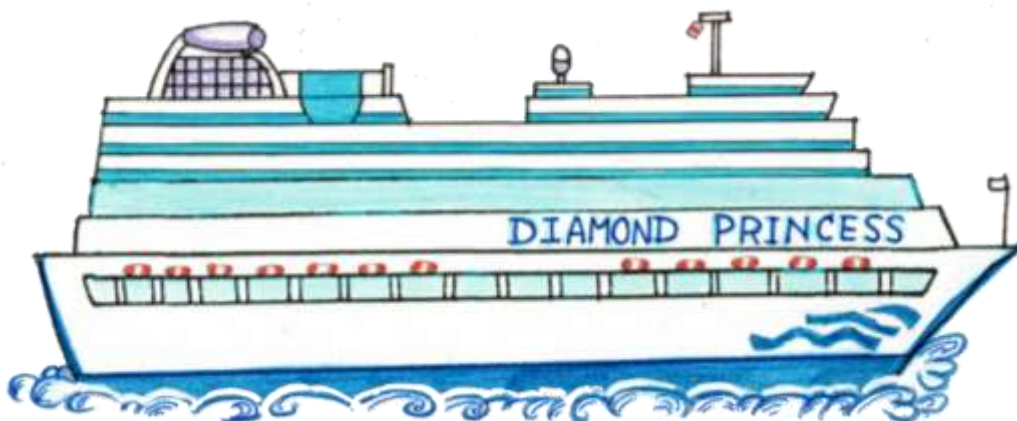
When you get home, wash your hands, gargle, and wash your face.
Before going to bed, gargle to reduce the virus in your mouth.



What is coronavirus disease 2019 (Covid-19) ?

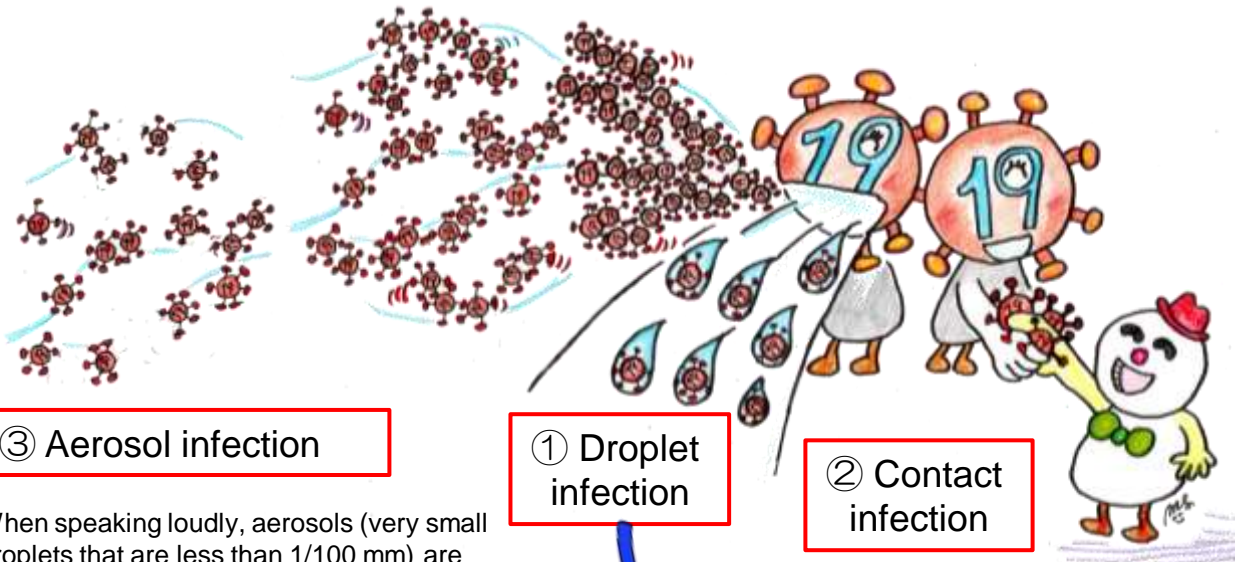


Coronavirus disease 2019 is thought to have occurred around November 2019, when a coronavirus of the bats began to infect humans.



The first case in Japan was confirmed in January 2020. Of the 3713 passengers aboard the Diamond Princess (a cruise ship) that came to Yokohama Port in February, 712 (about 20%) were infected. There were many findings by analyzing and investigating the infection on this cruise ship.

Three infection patterns of Covid-19



③ Aerosol infection

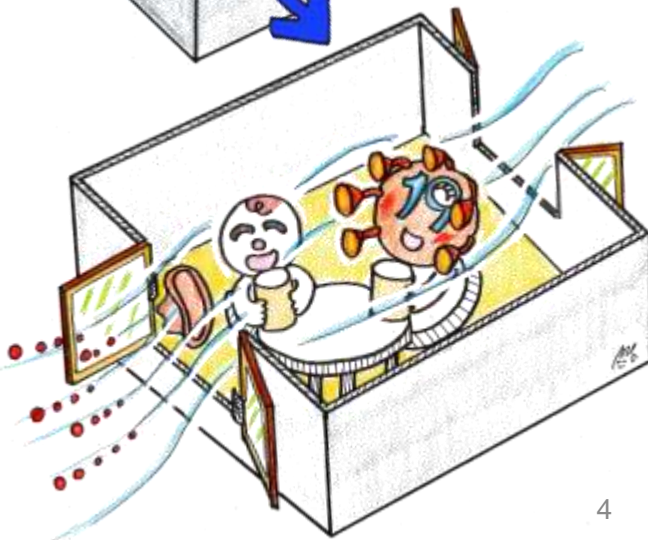
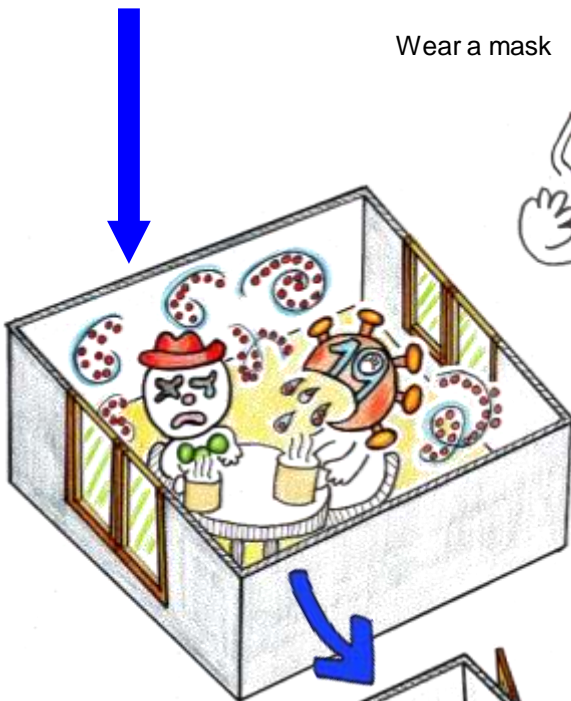
When speaking loudly, aerosols (very small droplets that are less than 1/100 mm) are spread. They float in the air for approximately 20 minutes. If you inhale them, you may get infected.

① Droplet infection

② Contact infection

Wash hands to prevent contact infections

Wear a mask



Closed space is dangerous!
Ventilate to blow out aerosols.

※ Aerosols are more widespread than droplets.

Common points that are found among clusters ...

The infection risk is not so high, when just walking around in the city or shopping, as long as everyone is wearing a mask. (Dr. Shigeru Omi)

Avoid the 3 Cs!
Confined spaces
Crowded places
Close contact

Do not
Speak
loudly

Follow the
infection
control
measures

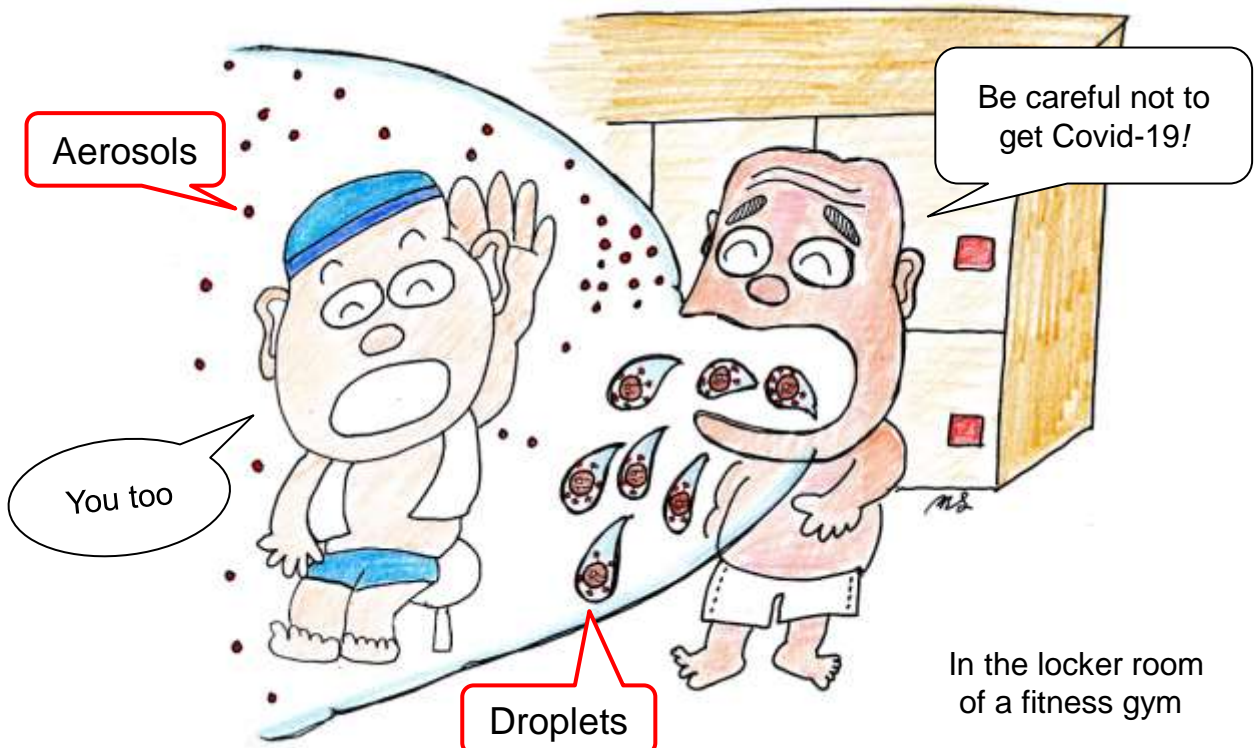


These three are the points of
countermeasures

Lecture at the Japanese Society
of Infectious Diseases
on August 20, 2020

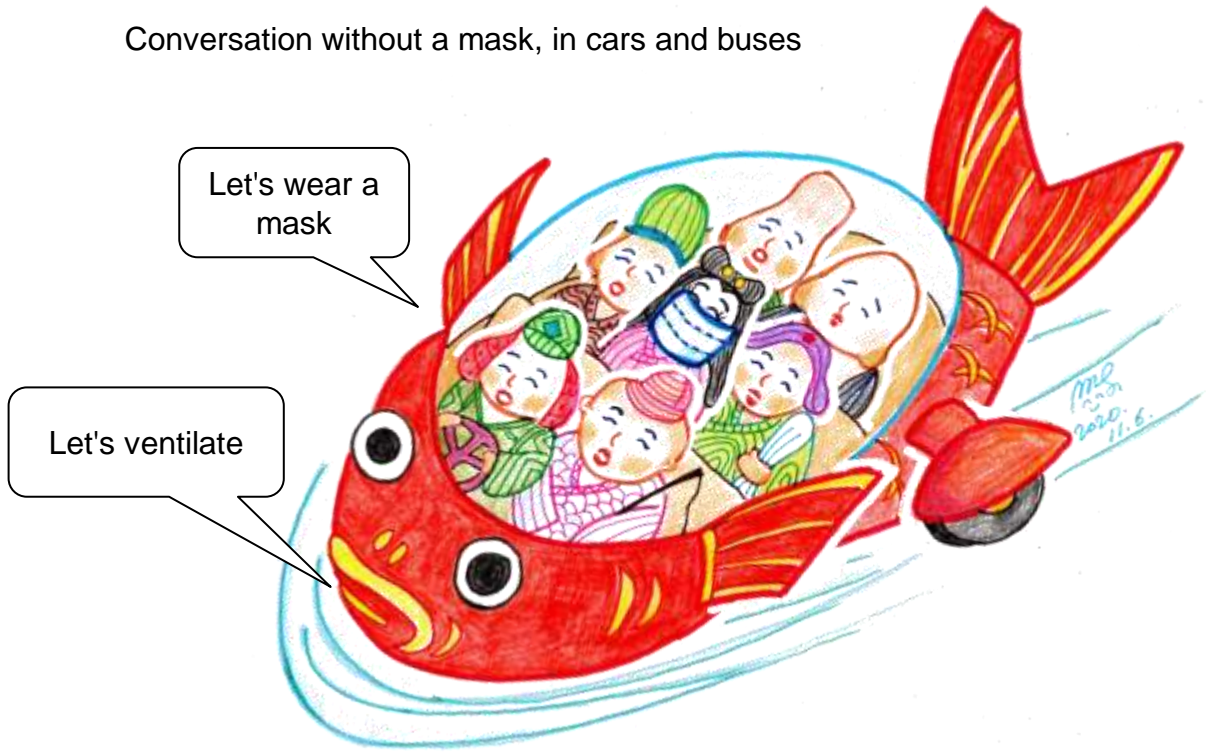
Chairman of novel coronavirus control subcommittee
by the government

When speaking in a loud voice,
both droplets and aerosols spread out.



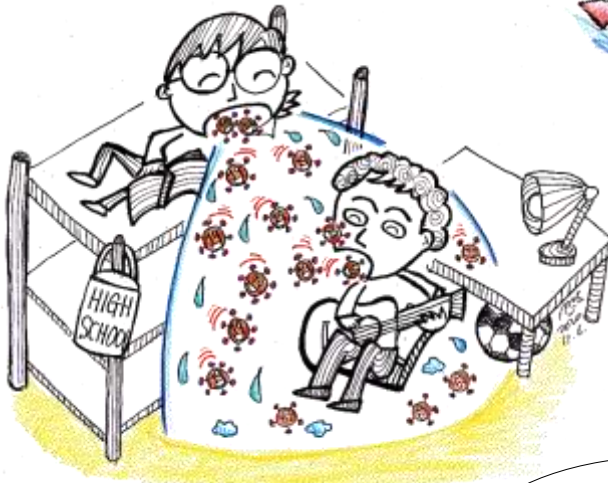
“Five situations” that increase the risk of infection

Conversation without a mask, in cars and buses



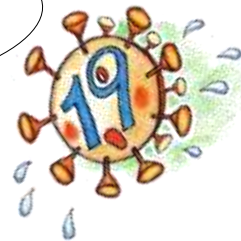
Social gatherings with drinking alcohol

Conversations without masks, and
karaoke



Living with room mates in a small room
such as in a dormitory

Danger of
cluster !



Break time in the staff room, changing
time in the locker room, and smoking in
the smoking room



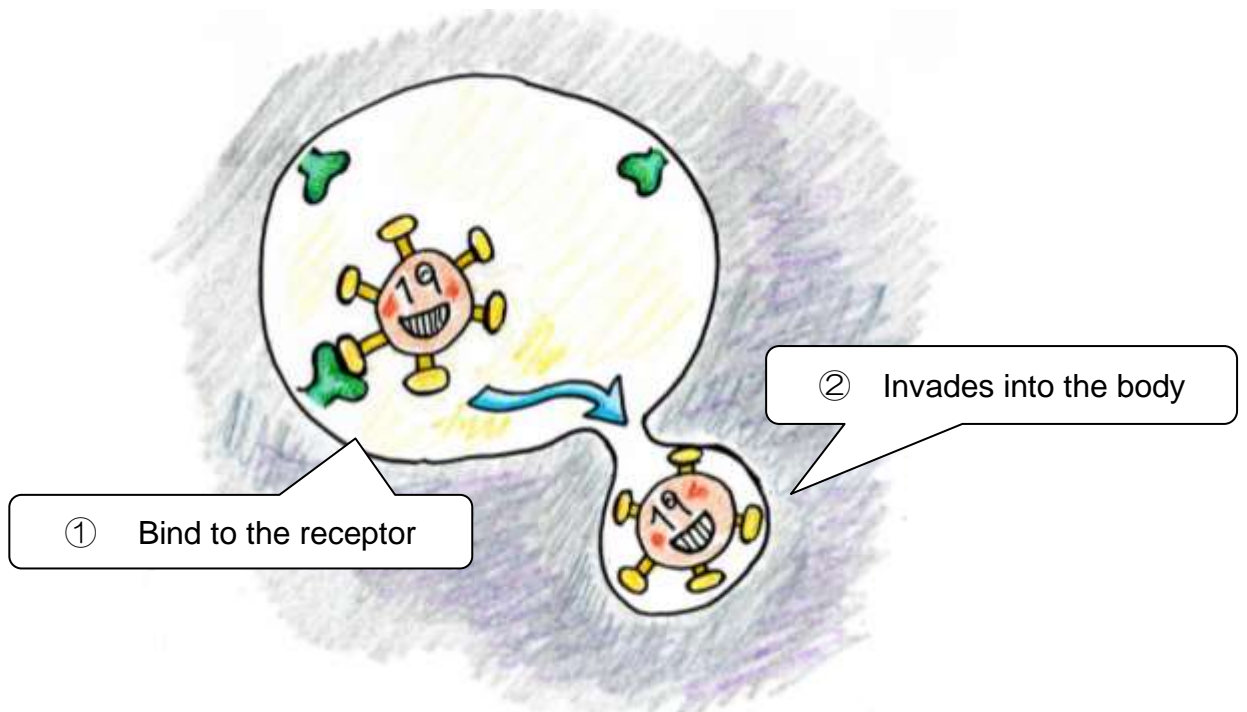
"Five scenes" of the infection risk

- ① Social gatherings with drinking alcohol
- ② Long feasts in large groups
- ③ Conversation without a mask
- ④ Living together in a small limited space
- ⑤ Switching locations

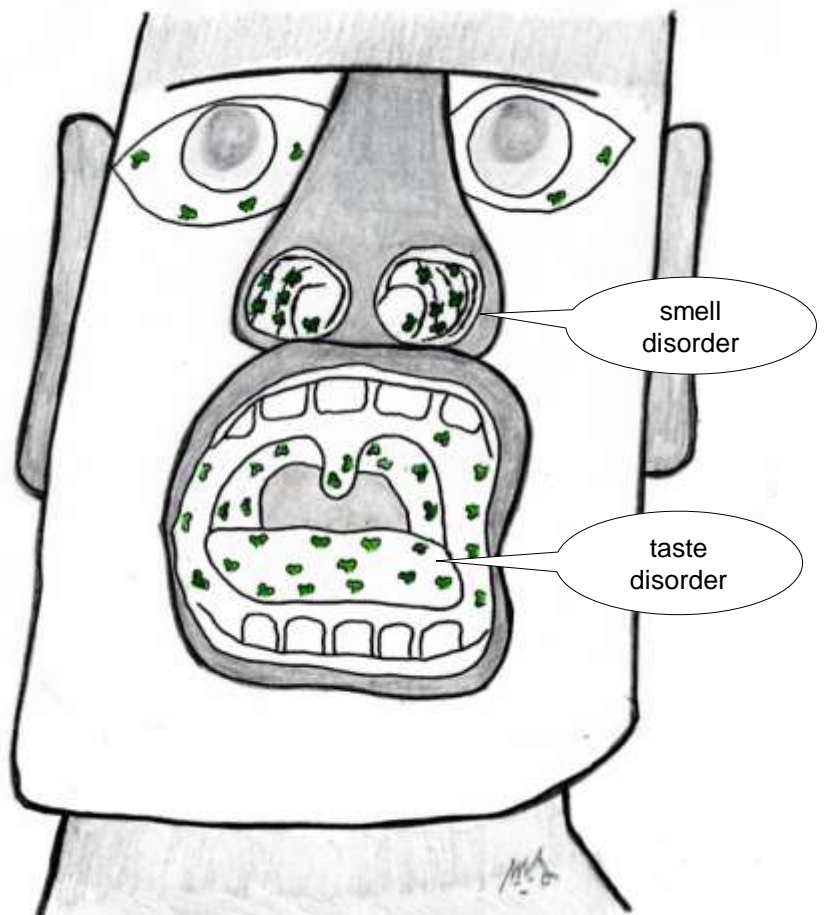
Ministry of Health, Labor and Welfare,
October 23, 2020

Mechanism and symptoms of novel coronavirus

The Covid-19 virus enters the body by binding to special receptors on the mucous membranes. This receptor is for regulating blood pressure, however the virus happens to stick to it.

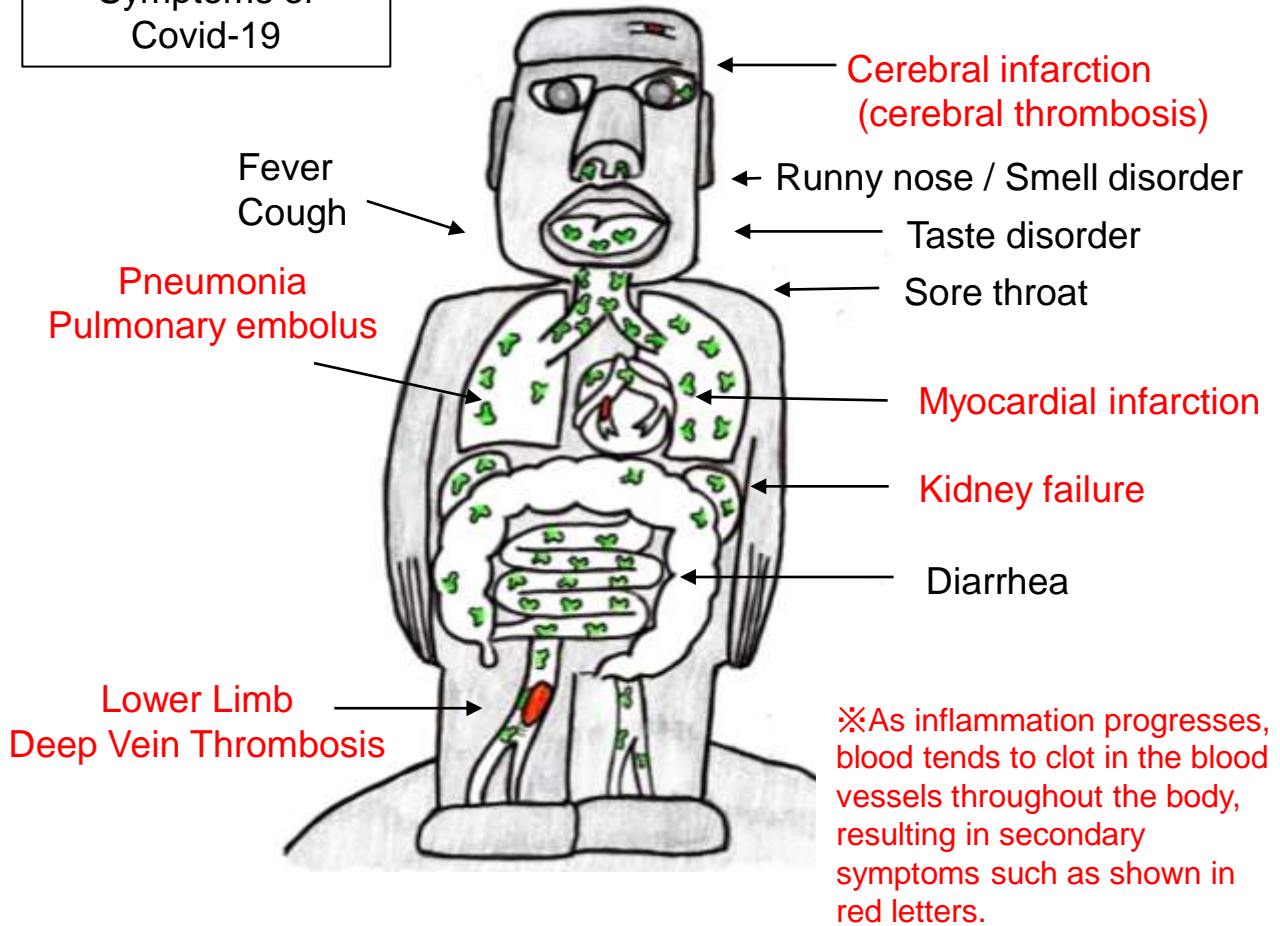


Receptors on the facial mucosa are on the nasal mucosa, eye conjunctiva, oral mucosa, and the surface of the tongue. As the skin has no mucous membranes, there are no receptors.

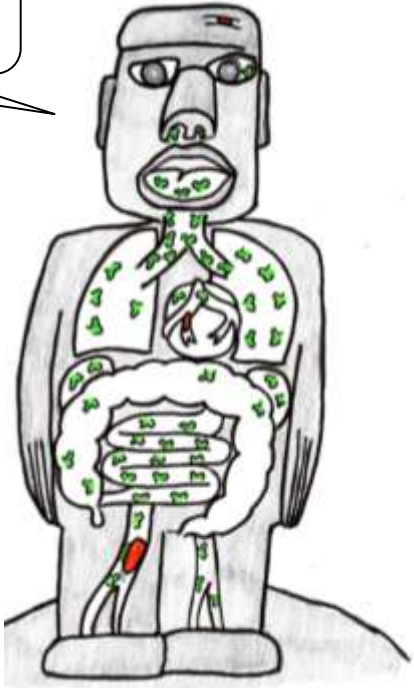


The skin is a natural barrier

Symptoms of Covid-19



Children are less susceptible to infection due to the smaller number of receptors.



Children may be infected when they are exposed to large number of virusus in a short time, even though they have fewer receptors.

Infection control against Covid-19

1

Basic Precaution

Always wear a **Mask** and
Wash your Hands



“Hand washing before meals” has always been important, from long long ago.

2

Droplet Infection ← **Mask**



Wear a mask when you can't keep a distance from people



3

Aerosol Infection ← Ventilation

Aerosols generated by a loud voice can stay in the air for a long time in poorly ventilated space. In such space, there is a risk of infection even for people who are sitting far away. Ventilate the room well to blow out these aerosols.



4

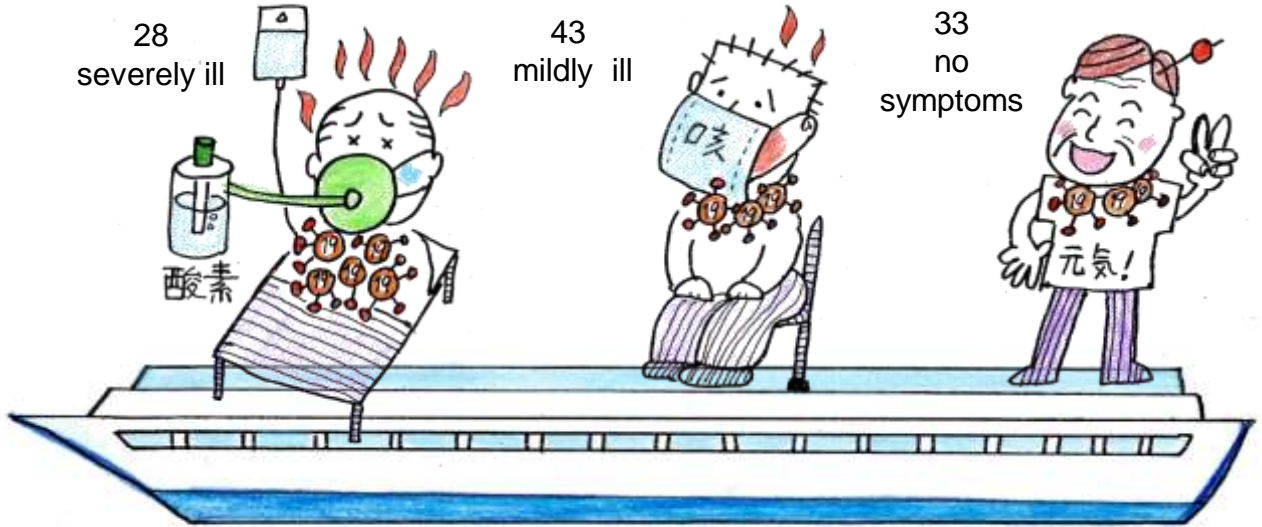
Contact Infection ←

Hand washing and Disinfection



Why is universal masking necessary ?

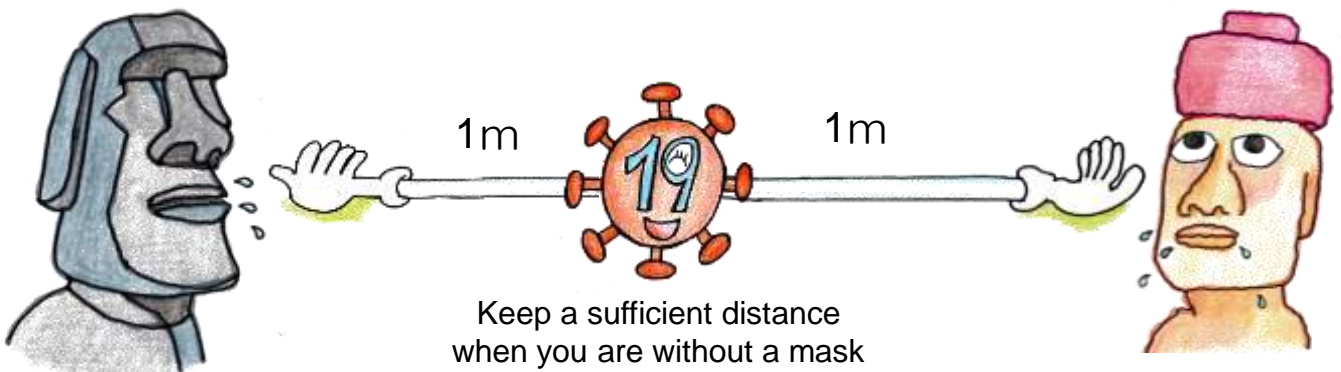
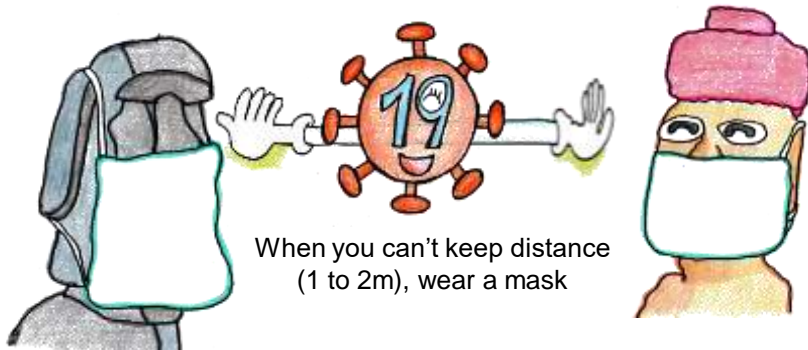
One among three people infected with Covid-19 had no symptoms

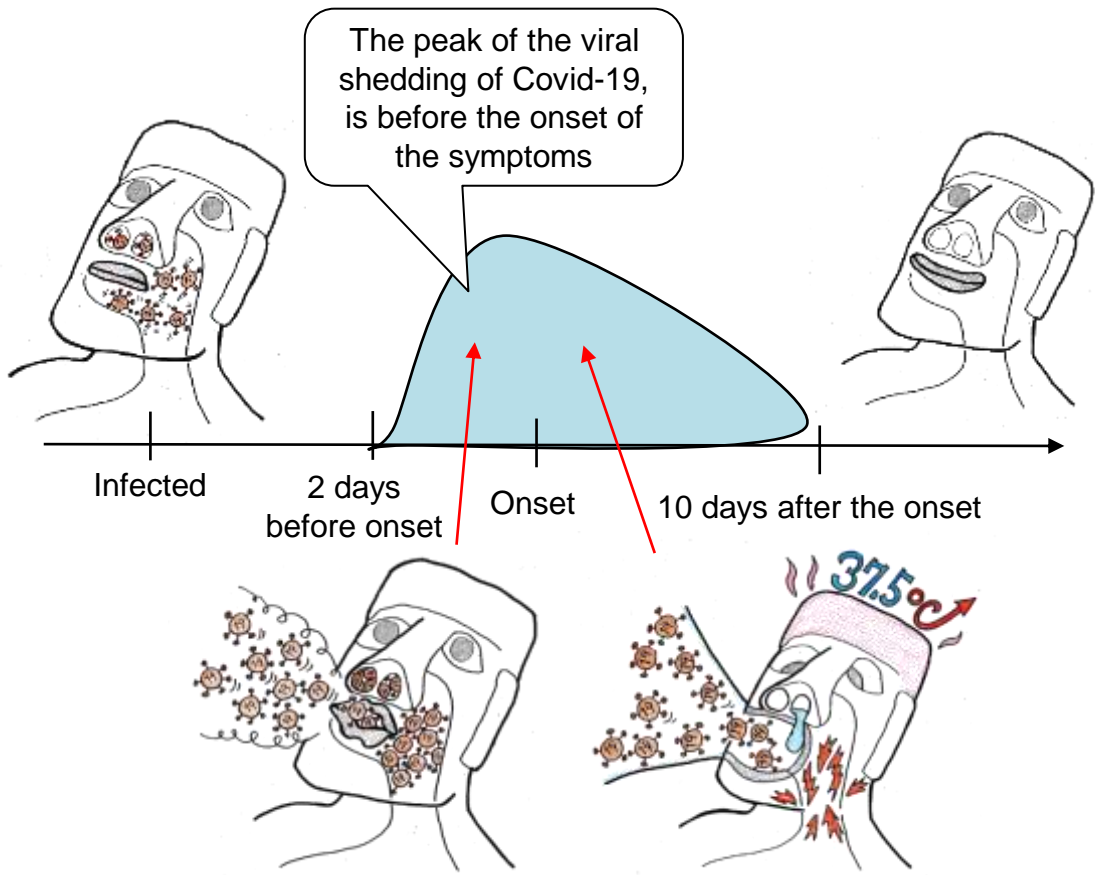


104 definitely PCR-positive patients (Diamond Princess cruise ship)
Average age 68 years (47-75 years)
(reported by the Self-Defense Forces Central Hospital)

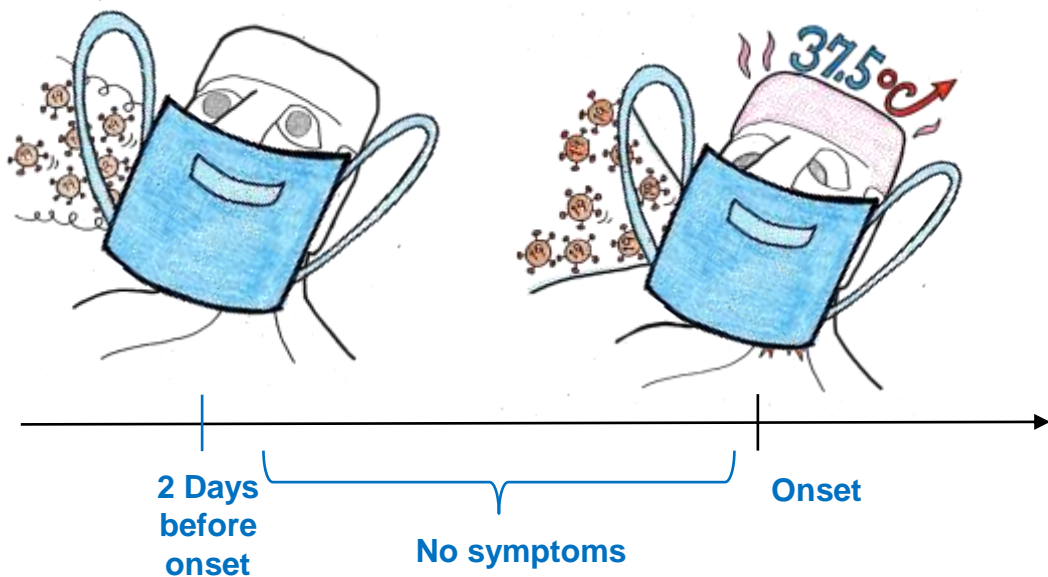


We have no way of knowing who is spreading Covid-19!





Wear a mask even if you have no cough



It is said the period to time that Covid-19 patients may spread the infection to others is from 2 days before, to 7 to 10 days after the onset of the symptoms.

When can't keep a distance, wear a mask

Before

When you have a cough, wear a mask

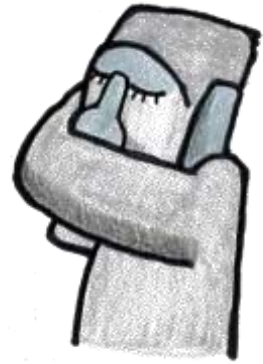
① Mask



② Cover your mouth and nose with soft paper



③ Cover your mouth and nose with sleeves



3 ways to 'cover your cough'

Regardless of coughing

Now

When you can't keep a distance from others, wear a mask



Hey, you two are too close. Wear masks, please!



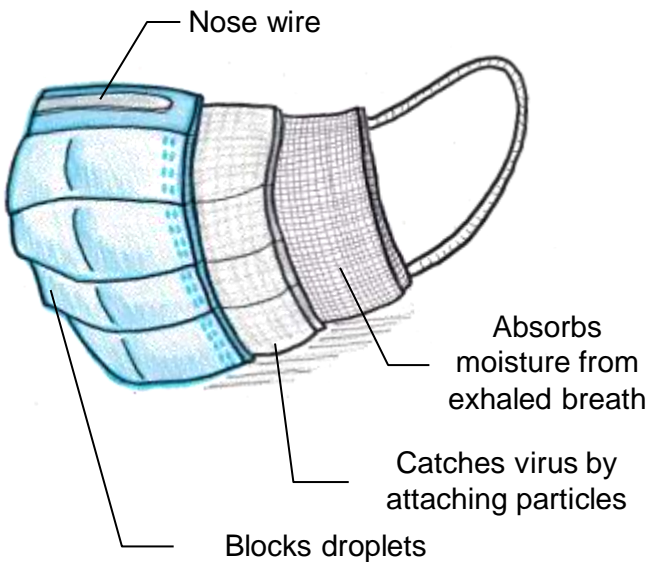
When you can't keep
a distance from others,
wear a mask
regardless coughing



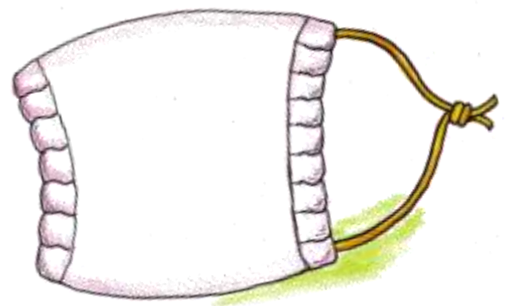
Universal-kun is giving masks to everyone.

※ Also called "Universal Masking"

Surgical Mask (Non-woven cloth)



Cloth Mask (cotton, gauze, etc.)



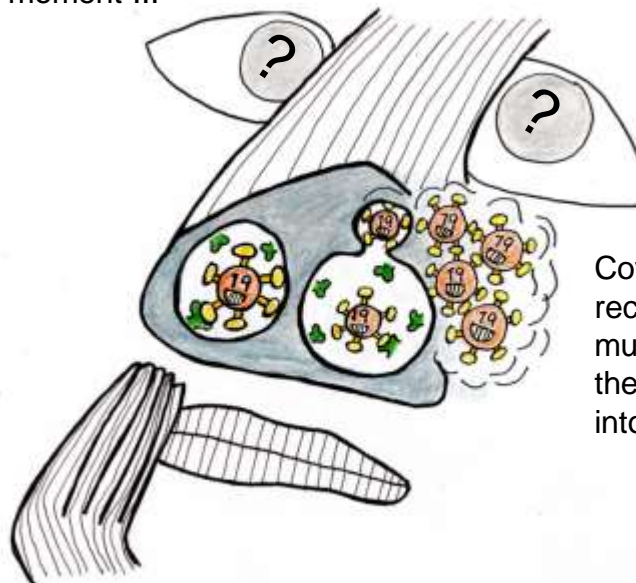
Cloth masks may
make you feel easier
to breathe, but they
may pass small
droplets when you
speak loudly.



Clean hands when touching nose, eyes or mouth



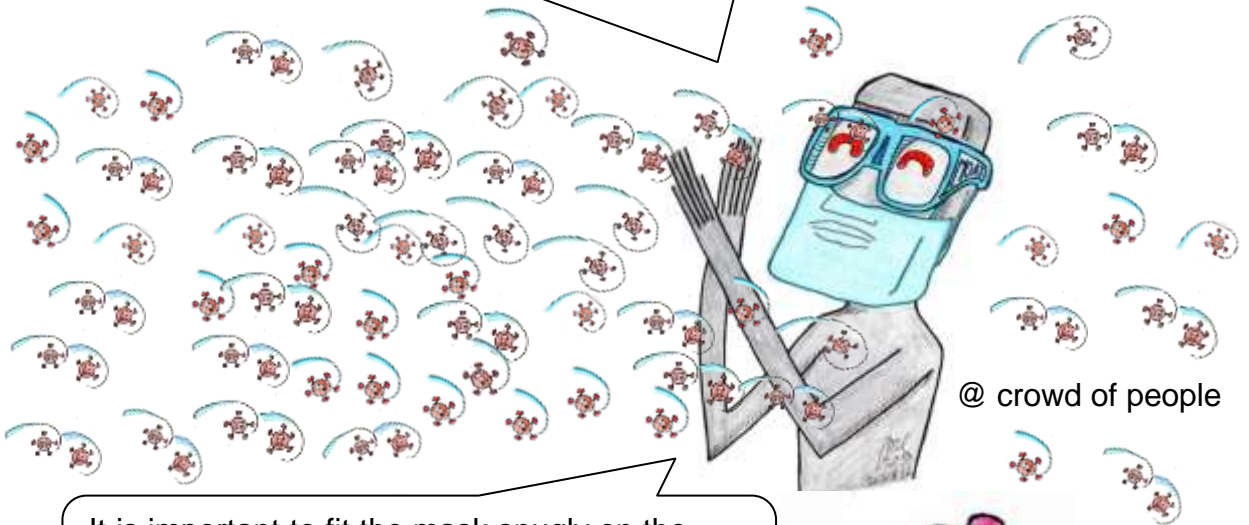
At this very moment ...



Covid-19 virus binds to receptors on the mucous membrane of the nose, and invades into the body

What to do against the floating viruses

The Covid-19 virus cannot infect you while it is on your hands. Wear "Glasses for hay fever" and "Mask" to prevent the virus from binding to the receptors !



It is important to fit the mask snugly on the face, and make sure that there are no open space around the nose and cheeks.

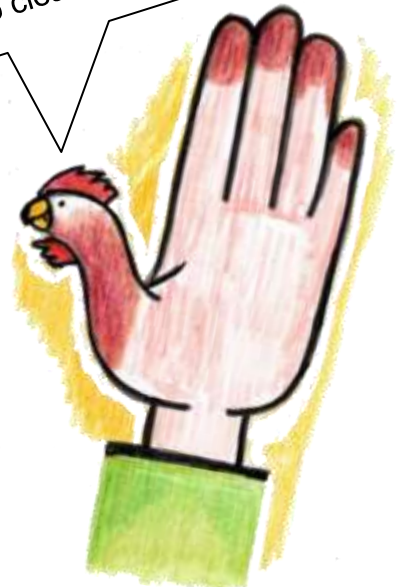
Disinfect or wash off the virus that may be on your hands before touching nose, eyes and mouth



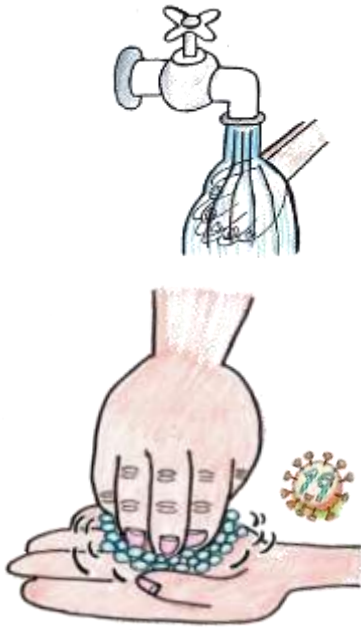
The fingertips carry the Covid-19 virus to the nasal receptors



Be especially conscious to clean your fingertips



fingertips are important when cleaning hands



Hand wash with soap and running water



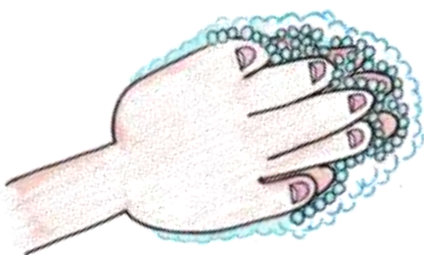
First, sterilize your fingertips in a pool of alcohol based hand rub

Disinfect hands with alcohol based hand rub



In order not to hurt the surface of your skin ...
Foam the soap well. Do not scrub strongly.
Gently wash on the skin.
Do not wipe strongly. Moisturize well.

① Foam well and wash both hands



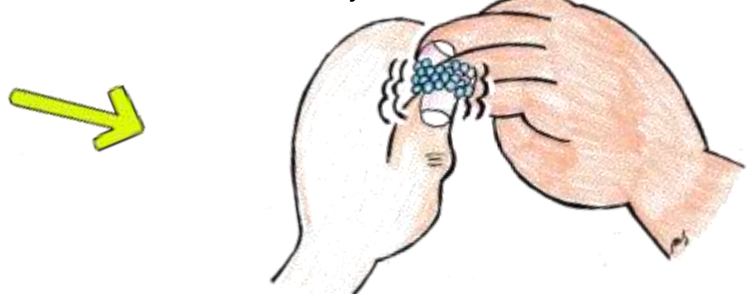
② Wash by twisting around your thumb



③ Wash your fingertips



④ Wash the base of your nails



The correct way to disinfect hands

- ① Use enough alcohol based hand rub to disinfect your entire hand
- ② At first disinfect your fingertips, nails, and thumbs, that are most likely to be forgotten, but are very important
- ③ Then rub both hands thoroughly until they are completely dry

1

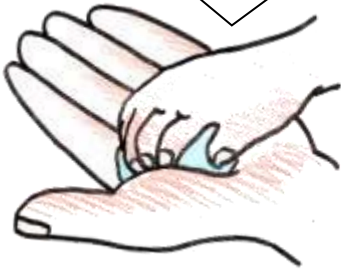


- ① Make a "Big Pool" on the palm of your hand

"Big Pool" of alcohol based hand rub

2

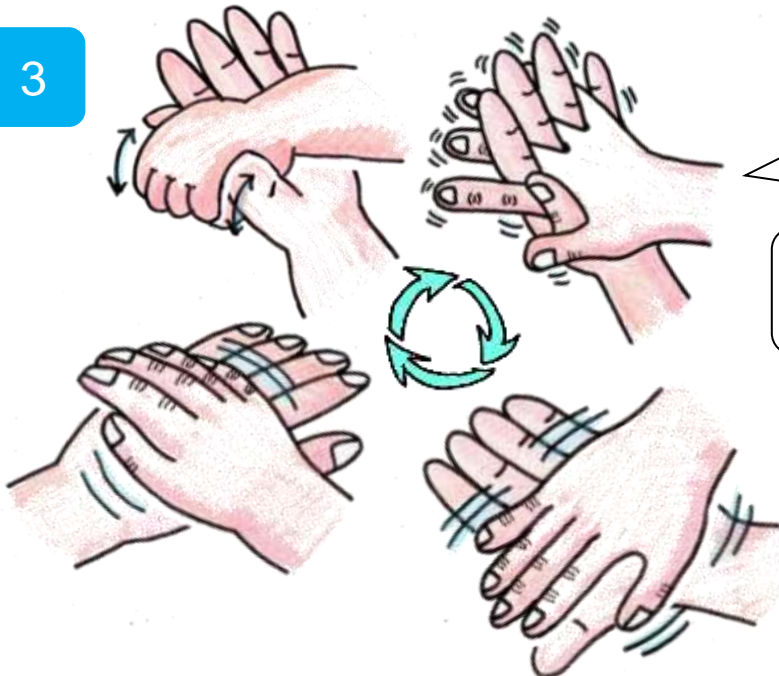
- ② Put your fingertips in the pool and disinfect your nails.



- ③ When the right hand is finished, move the liquid to the right hand palm to disinfect the left hand by adding one push



3



- ④ Disinfect the thumb, between the fingers, palm, back of the hand, and wrist

- ⑤ Disinfect thoroughly until both hands dry up completely



When a family member is infected ...

Unwell

Isolation

Covid-19 ?

Influenza ?

Covid-19 infection

Influenza infection



The initial symptoms may be similar to the flu and the common cold.
The main symptoms are fever, cough, malaise, and respiratory distress.
Diarrhea (10%),
Taste disorder (17%)
Smell disorder (15%)

Onset with a sudden fever of 38-39° C or higher.
In addition to respiratory symptoms, it is often accompanied by systemic symptoms such as headache, lumbago pain, muscle pain, arthralgia, and general malaise.

No one can tell if it is Covid-19 or influenza

Call a local clinic or hospital

Production Members

- + Japanese Red Cross Toyota College of Nursing
Masataka SHIMOTSUMA, MD, Ph.D.
(Infection Control Doctor)

Naotsune HOSONO, Ph.D.
(English Translator)



Ver.1: 26 November 2020
Ver.2: 17 December 2020