

COVID-19

Omicron: Implications for infection prevention and control measures

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Transmission routes, COVID-19

- Transmission routes
 - Respiratory droplets
 - Contact
 - Opportunistic airborne

Table 1. Scope and definition of modes of transmission

Mode of transmission	Definition	Examples of the agents
Airborne	<p>Transmission of disease caused by dissemination of droplet nuclei that remain infectious when suspended in air over long distance (>1 m) and time. Airborne transmission can be further categorized into obligate or preferential airborne transmission.</p> <p>Obligate airborne transmission refers to pathogens that are transmitted only by deposition of droplet nuclei under natural conditions.</p> <p>Preferential airborne transmission refers to pathogens that can initiate infection by multiple routes, but are predominantly transmitted by droplet nuclei.</p>	Pulmonary tuberculosis, measles, chickenpox
Opportunistic airborne	Transmission of droplet nuclei at short range during special circumstances, such as the performance of aerosol-generating procedures associated with pathogen transmission.	SARS-Coronavirus, influenza
Droplet	Droplets are generated from an infected (source) person primarily during coughing, sneezing and talking. Transmission occurs when these droplets, containing microorganisms, are propelled a short distance (usually <1 m).	Adenovirus, respiratory syncytial virus, influenza, SARS-Coronavirus

SARS, severe acute respiratory syndrome.

Source: Atkinson J, Chartier Y, Pessoa-Silva CL, Jensen P, Li Y. Natural ventilation for infection control in health-care settings. Geneva: World Health Organization; 2009.



https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf



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WHO recommendations on mask use by health workers, in light of the Omicron variant of concern

WHO interim guidelines
22 December 2021



- The recommendation is about the use of masks by health workers providing care to patients with suspected or confirmed COVID-19 in any setting, **including home care, long-term care facilities and community care settings.**
- It supersedes the recommendations provided in the “Annex to Infection prevention and control during health care when COVID-19 is suspected or confirmed” published on 1 October 2021.

https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC_Masks-Health_Workers-Omicron_variant-2021.1



WHO recommendations on mask use by health workers, in light of the Omicron variant of concern

WHO interim guidelines
22 December 2021



1) **A respirator or a medical mask** should be worn by health workers, along with other PPE, before entering a room where there is a **patient with suspected or confirmed COVID-19**.

Respirators should be worn in the following situations:

- in care settings where ventilation is known to be poor* or cannot be assessed or the ventilation system is not properly maintained
- based on health workers' values and preferences and on their perception of what offers the highest protection possible to prevent SARS-CoV-2 infection.
- It applies to **any setting** where care is provided to patients with suspected or confirmed COVID-19, **including home care, long-term care facilities and community care settings**.

(New conditional recommendation, based on very low certainty evidence)**

https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC_Masks-Health_Workers-Omicron_variant-2021.1



WHO recommendations on mask use by health workers, in light of the Omicron variant of concern

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2) **A respirator should always be worn** along with other PPE by health workers performing aerosol-generating procedures and workers on duty in **settings where AGPs are regularly performed** on patients with suspected or confirmed COVID-19, such as **intensive care units, semi-intensive care units or emergency departments.**

(Existing recommendation, with strength modified from conditional to strong, based on very low certainty evidence)

3) **Appropriate respirator and mask fitting should always be ensured**

- for respirators through initial fit testing and seal check
- for medical masks through methods to reduce air leakage around the mask)
- compliance with appropriate use of PPE and other precautions.

(Existing Good Practice Statement)

https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC_Masks-Health_Workers-Omicron_variant-2021.1





Image: OSHA
<https://www.osha.gov/respiratory-protection/resources>

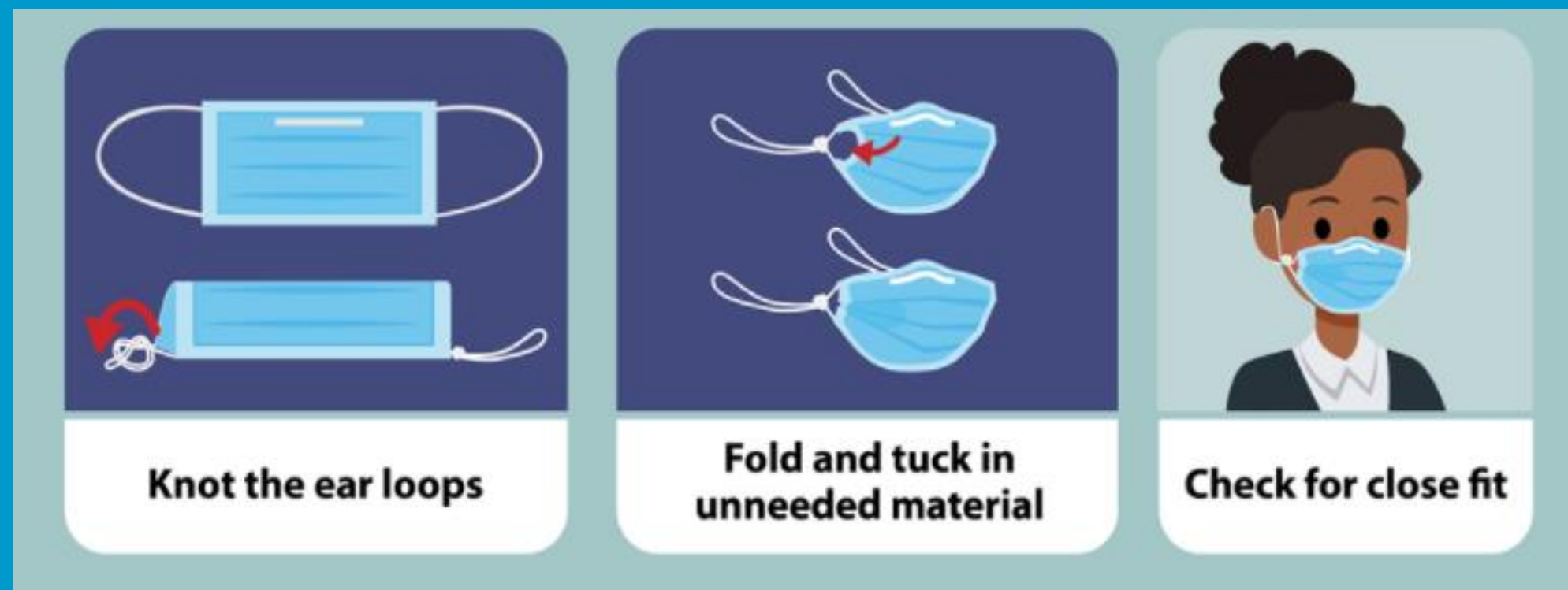


Image: US CDC
<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/types-of-masks.html>

Administrative measures

WHO urges scaling up **production, procurement and distribution of respirators and medical masks** for use in health and care settings to ensure **equitable access to respirators and medical masks by all health** and care workers around the world. In settings where the availability of respirators is limited or there are shortages, WHO suggests considering **extended use or appropriate reprocessing of respirators.**(8)

Regardless of the type of mask, appropriate mask use is critical to ensuring effectiveness and reducing the risk of transmission. **Masks should be viewed as one key component of a comprehensive package of infection prevention and control (IPC) measures to be applied during health care when COVID-19 is suspected or confirmed.**(9)

https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC_Masks-Health_Workers-Omicron_variant-2021.1



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Appropriate use of personal protective equipment (PPE)

- Guarantee an adequate supply of PPE in the health services, with the recommended specifications;
- Display signs in the isolation area indicating how don and doff PPE
- Train health workers in the proper use of PPE


COVID-19


Coronavirus Disease 2019


HOW TO PUT ON PERSONAL PROTECTIVE EQUIPMENT (PPE)


STEP 1 

- Identify hazards & manage risk. Gather the necessary PPE
- Plan where to put on & take off PPE
- Ask a friend to help or put on in front of a mirror
- Discard all PPE in an appropriate waste bin

STEP 2  Put on a gown

STEP 3  Put on surgical mask or respirator*


STEP 4  Put on eye (goggles) or facial protection (face shield)†


STEP 5  Put on gloves (over cuff)


*Surgical mask or respirator (N95 or similar), depending on the level of care. For aerosol generating procedures (AGP), wear a respirator (N95 or similar)
†e.g. visor, face shield, goggles (consider anti-fog drops or fog-resistant goggles)


HOW TO TAKE OFF PPE


- Avoid contamination of self, others and environment
- Remove the most heavily contaminated items first


















STEP 1  Remove gloves then remove gowns

STEP 2  Perform hand hygiene



STEP 3  Remove eye protection from behind

STEP 4  Remove surgical mask or respirator from behind

STEP 5  Perform hand hygiene

Level of care	Hand hygiene	Gown	Surgical mask	Respirator (N95 or similar)	Goggles (eye protection) OR face shield (facial protection)	Gloves
Triage						
Collection of specimens for laboratory diagnosis						
Suspected or confirmed case of COVID-19 requiring healthcare facility admission and NO aerosol-generating procedure						
Suspected or confirmed case of COVID-19 requiring healthcare facility admission and WITH aerosol-generating procedure†						

†AGPs include positive pressure ventilation (BIPAP and CPAP), endotracheal intubation, airway suction, high frequency oscillatory ventilation, tracheostomy, chest physiotherapy, nebulizer treatment, sputum induction, and bronchoscopy.

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Source: <https://www.paho.org/en/documents/technical-specifications-medical-devices-case-management-covid-19-healthcare-settings>

HOW TO GUIDE - PUTTING ON PPE FOR CONTACT/DROPLET PRECAUTIONS

1 Perform hand hygiene

Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

Wash hands for 40–60 seconds.



2 Put on the gown



3 Put on the mask

Medical mask.



4 Put on eye protection

Put on face shield or goggles.



5 Put on gloves

Ensure glove is placed over the cuff of the gown.



Full PPE



HOW TO GUIDE - TAKING OFF PPE FOR CONTACT/DROPLET PRECAUTIONS

Ensure that infectious waste containers are available for safe disposal of PPE. Separate containers should be available for reusable items.

Order is important

1 Remove gloves



2 Remove the gown

Ensure gown is pulled away from the body during removal and that clothing does not become contaminated and dispose of them safely.



3 Perform hand hygiene

Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

Wash hands for 40–60 seconds.



4 Remove eye protection

Remove face shield or goggles.



5 Remove the mask

Ensure you are taking the mask off from the straps, avoid touching the mask.



6 Perform hand hygiene

Alcohol based handrub

Rub hands for 20–30 seconds.

or

Water and soap

Wash hands for 40–60 seconds.



General principles of the use of personal protective equipment (PPE)



Hand hygiene should always be performed despite PPE use.



Remove and replace if necessary, any damaged or broken pieces of re-usable PPE as soon as you become aware that they are not in full working condition.



Remove all PPE as soon as possible after completing the care and avoid contaminating the environment outside the isolation room; any other patient or worker; and yourself.



Discard all items of PPE carefully and perform hand hygiene immediately afterwards.

Source: <https://apps.who.int/iris/handle/10665/69793>



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COVID-19 Infection Prevention and Control

Living guideline

Mask use in community settings

22 December 2021



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<https://apps.who.int/iris/rest/bitstreams/1403813/retrieve>



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- In settings where there is community or cluster transmission of SARS-CoV-2, irrespective of vaccination status or history of prior infection, **wearing a well-fitting mask* that covers the nose and mouth** is recommended for the general public when interacting with individuals who are not members of their household:
- **in indoor settings where ventilation is known to be poor** or cannot be assessed, or the ventilation system is not properly maintained, **regardless** of whether physical distancing of at least **1 metre can be maintained**
- **in indoor settings that have adequate ventilation if physical distancing of at least 1 metre cannot be maintained***; or
- **in outdoor settings where physical distancing of at least 1 metre cannot be maintained***.

WHO Infection Prevention and Control COVID-19 Living Guideline - Mask use in community settings
- World Health Organization (WHO)

https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC_masks-2021.1



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**Mask types include:*

- **reusable, non-medical masks** that comply with the ASTM F3502 standard or CEN Working Agreement 17553, or a non-medical mask meeting WHO essential parameters (see practical info for more information).;
- **disposable medical masks**, complying with medical mask standards EN 14683 Type I, ASTM F2100 Level 1, YY/T 0969, YY 0469 (or equivalent) if the availability of medical masks meeting minimum performance criteria for health workers has been assured**;
- if the above options are not available, other types of **well-fitting non-medical masks including homemade multilayered masks***** are an acceptable option (according to local policies).

WHO Infection Prevention and Control COVID-19 Living Guideline - Mask use in community settings
- World Health Organization (WHO)

https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC_masks-2021.1



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Summary Health Care Facilities

Recommendations, jointly with other IPC measures

Isolation

Use of PPE

Hand hygiene

- Use of a respirator or medical mask for HCW working in areas with patients suspect or confirmed COVID 19 in any setting.
 - A respirator should be used in areas with poor ventilation
 - Or If HCW prefer to use it
- A respirator must be used in areas where AGP is performing
- Very important – proper fitting for both respirators and medical mask



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Summary Community

- Use of well-fitting mask covering nose and mouth
 - Less than 1 meter from others - indoor or outdoor setting
 - Poor ventilated indoor setting



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Thanks a lot

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