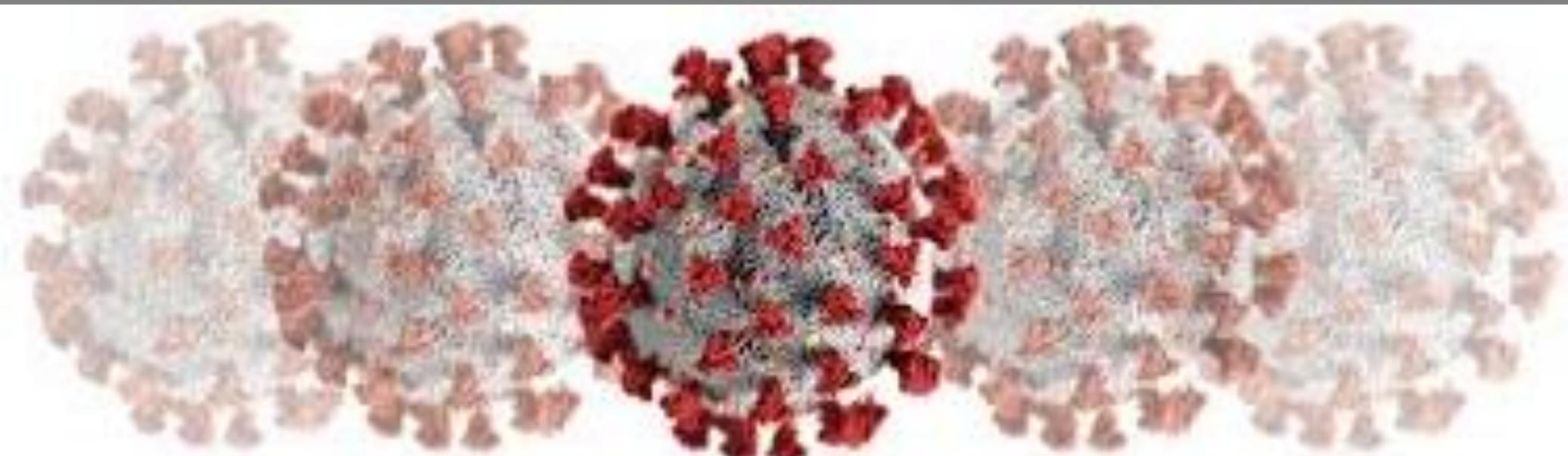




TONY BLAIR
INSTITUTE
FOR GLOBAL
CHANGE

COVID-19: Guidance on the Use of Masks

April 2020





Scientific and health organisations make different recommendations on the efficacy of face masks in the fight against Covid-19



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- We now know from recent studies that a significant portion of individuals with coronavirus lack symptoms and that even those who eventually develop symptoms can transmit the virus to others before showing symptoms. This means that the virus can spread between people interacting in close proximity.
- CDC recommends wearing cloth face coverings in public settings where other social distancing measures are difficult to maintain (e.g. grocery stores and pharmacies), especially in areas of significant community-based transmission.



“

The big mistake in the U.S. and Europe, in my opinion, is that people aren't wearing masks. This virus is transmitted by droplets and close contact. Droplets play a very important role – you've got to wear a mask, because when you speak, there are always droplets coming out of your mouth. Many people have asymptomatic or pre-symptomatic infections. If they are wearing face masks, it can prevent droplets that carry the virus from escaping and infecting others. –China's CDC Director



World Health Organization

“

- If you are healthy, you only need to wear a mask if you are taking care of a person with suspected 2019-nCoV infection.
- Wear a mask if you are coughing or sneezing.
- Masks are effective only when used in combination with frequent hand-cleaning with alcohol-based hand rub or soap and water.



Given the scientific uncertainty, governments have adopted different policies on the use of cloth masks by the public

Face mask usage around the world

Not recommending masks	Changed policy to mask usage	Recommending masks	Mandating masks
 UK	➔  USA	 South Korea	 Morocco
 Spain	➔  Germany	 China	 USA*
	➔  Italy	 Singapore	 Kenya
	➔  France	 Thailand	 Germany*
		 Japan	 China*

Note: (*) Parts of the country are mandating the use of masks.

Trends in government policy

- There is a **growing consensus that masks help prevent carriers from spreading the virus and that universal mask wearing brings a public health benefit.** However, it is less clear if mask-wearing protects wearers from incoming germs.
- There is universal consensus (even among countries not promoting mask wearing in public) that **N-95 masks and masks that comprise part of PPE kits must be reserved for frontline health workers.** Some governments are regulating this.
- To prevent a shortage of masks for health workers, governments are **promoting the fabrication and use of artisanal or home-made cloth masks.**
- **Italy, France, Germany and the USA changed policy.** Having not initially recommended wearing masks, they are now advising people to wear face masks in public places.



Universal mask usage may be effective, but only in combination with other policy measures and protective measures taken by individuals



Government policy measures required alongside universal mask wearing



- **Universal mask wearing** among the public to reduce transmission.
- **Regulation of the availability of N-95** masks to protect health workers.



- Forensic **contact tracing** conducted for all confirmed cases.



- Deploy available **testing capacity** and isolate those who test positive.



- Ensure smooth **access to markets and food** as well as water and sanitation.



- **Social mobilisation** that empowers communities is effective in the battle against Covid-19.



Individuals should maintain the hygiene of masks, as well as other protective measures



- **Masks** must be kept clean or disposed of after use



- **Hand-washing** with soap and water, or an alcohol-based hand rub.



- Maintain **social distancing**.



- Avoid touching eyes, nose and mouth.



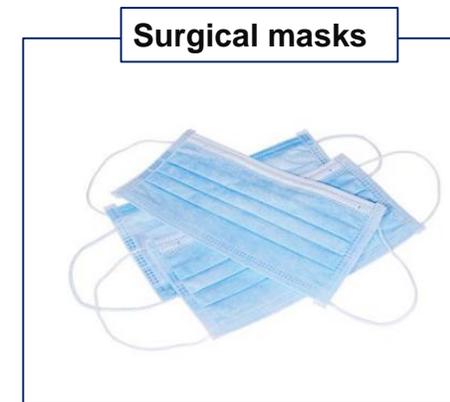
- Support **social mobilisation** in the community to change behaviours, and recognise and act on symptoms.



N-95s, face shields and surgical masks are critical supplies that must be reserved for frontline health workers, whereas the general public can use homemade cloth masks

Types of face masks and their properties

	N-95 masks	Face shields	Surgical masks	Cloth masks
Use	Multiple use	Multiple use	Single use	Multiple use
Effectiveness	~95% ¹	23-68% ²	60 - 80% ²	~70% ³
Cost	\$15	\$7	\$0.5	\$1 - 2.5
Availability	Scarce	Scarce	Scarce	Available
Washing and cleaning	Should never be washed	Can be re-used by washing	Should never be washed	Can be re-used by washing
Disposal	Should be cleaned after use	Can be cleaned easily	Should be disposed of after use	Can be cleaned easily
Should be used by:	Health workers	Health workers	Health workers	General public





Home-made cloth masks can reduce the spread of coronavirus by blocking outgoing germs, but there is more variation in terms of them protecting the wearer from incoming germs

Key principles of home-made mask production

Cloth face coverings should:

- Fit snugly but comfortably against the side of the face
- Be secured with ties or ear loops
- Include multiple layers of fabric
- Allow for breathing without restriction
- Be able to be laundered and dried without damage or change to shape
- Should not be placed on young children under age 2

Online guidance on how to make cloth face coverings:

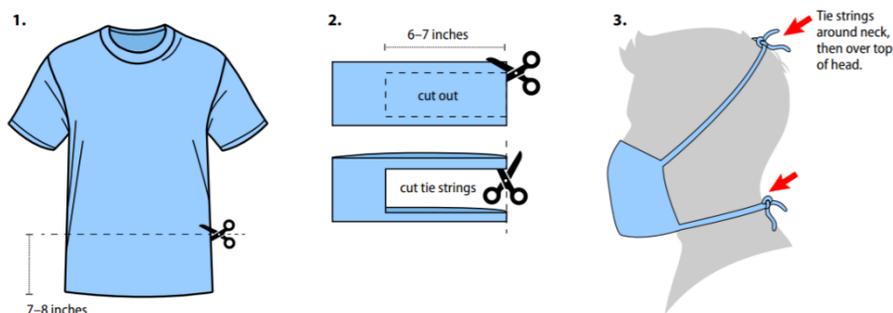


• [Centers for Disease Control and Prevention, USA](https://www.cdc.gov)



• [Office of the Principal Scientific Advisor to the Government of India](https://www.moh.gov.in)

Tutorial



Considerations in fabric selection

The choice of fabric affects a mask's ability to filter out particles. Layering fabrics and inserting filters between layers increases their effectiveness. Woven or knit fabrics should not be used because the holes between stitches are bigger.

Fabric/filter effectiveness at filtering out particles

Fabric/filter	% of <0.3 microns filtered out
HVAC filter	89-94%
Quilting fabric, 2 layer	70-79%
Furnace filter, 2 layer	75%
Pillow case, 600 thread count, 4 layer	60%
Pillow case, 600 thread count, 2 layer	22%
Coffee filters, 3 layer	40-50%
Wool scarf, 4 layer	49%
Wool scarf, 2 layer	21%
Cotton bandana, 4 layer	20%
Cotton bandana, 2 layer	18%
No face covering	0%



If adopting this policy measure, governments should work with the private sector to repurpose textile and garment* production to manufacture face masks for health workers and the public

Industrial manufacture should be prioritised for PPE

1 Repurposing industrial manufacture



- Most suitable for production of masks as Personal Protective Equipment (PPE) for frontline health workers.
- Production lines can be quickly retooled to produce face masks.
- Reduces job losses in the garment industry, enhances industrial capacity, and generates revenues for SMEs in the value chain.



2 Artisanal and home-made production



- Governments can encourage civil society, community-based organisations and the public to make their own face masks.
- Must be accompanied by an awareness-raising campaign and guidelines to inform home production.
- Offers alternative livelihood for tailors and community groups.



Role of government in repurposing

- **Awareness:** Build awareness and guidelines to encourage companies and artisans to repurpose production lines.
- **Incentives:**
 - Waive taxes on profits of the masks produced.
 - Exempt the import of cotton and other inputs.
 - Provide government-owned storage and transportation for face masks.
 - Offer guaranteed purchase agreements.
- **Regulation:** Set mask quality standards and controls. AFNOR, ISO and CEN offer PPE manufacturing standards free of charge.**
- **Distribution:** Use government-owned distribution channels.

Role of the private sector in repurposing

- **Speed to market:** Expedite staff training and production line retooling to bring products to market rapidly (~1 week).
- **Quality of masks:** Acquire and produce quality fabric based on government advice to manufacture effective masks.
- **Selling at lowest profit:** Embody social responsibility and produce masks at the lowest possible price.

Source: TBI research

*In addition, plastics and 3D printing can be repurposed if producing face shields

**See annex



This process is already underway around the world, with many examples of government and private sector collaboration

Government policy measures from around the world

- 
 • The **Chinese government** provided incentives including a **guarantee** to buy all masks produced.
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 • **China** repurposed **SOEs to manufacture PPE**. This increased face mask production from **20 million to 116 million masks per day**.
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 • **In India**, companies repurposed production to supply raw materials to the Chinese companies producing masks. Government lifted restrictions on exports of masks and raw materials.
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 • **In Singapore**, the government allowed textile companies to **re-open their businesses from lockdown only if they were to produce face masks and other PPE**.
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 • The **Kenya** government passed a law making it a **legal requirement to wear masks in public** or when travelling in a private or public vehicle.
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 • Government of **Zimbabwe** made available USD\$1.3M in seed capital for technical universities to produce **PPE to meet local demand**. Chinhoyi University of Technology (CUT) produces **2,500-3,500 masks/day**.

International companies have repurposed to produce masks

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 • **H&M** started production of **N95/FFP2 face masks** for hospital staff in China. 100,000 planned to be produced by April 2.
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 • **Inditex (owner of Zara SA)** converted textile manufacturing capacity in Spain to produce masks.
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 • **Gap and Eddie Bauer** shifted production lines to **manufacture face masks and gowns**.
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 • Sports brands **Nike and New Balance** are producing face shields using components from existing products.
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 • Four garment manufacturers in **Ethiopia – Everest, Shints, Almeda, and Calzedonia** – installed capacity to produce and supply face masks with support from government.



Governments should plan the distribution of masks carefully, so as to safeguard stocks for frontline health workers

Governments can (i) regulate private sector production and distribution of face masks; or (ii) distribute directly to safeguard stocks for frontline health workers

To safeguard stocks for frontline workers, government should reserve face masks and other PPE before distributing to the public. After setting aside reserves, governments have two distribution options:

1. **Private sector regulation:** Regulate the production and distribution of face masks and other PPE to ensure no shortages. This is manageable when government pre-selects a limited amount of private sector providers to distribute face masks and other PPE.
2. **Direct distribution:** Government can directly distribute face masks in two ways:
 - i. **Mobile distribution:** Distribute face masks and other PPE by going door-to-door. Government can utilise health workers, the military and government administrative units to achieve this.
 - ii. **Commodity points of distribution:** Establish central distribution points where the population can get their PPE.

China, USA, South Korea and Japan took measures that alter the way face masks and other PPEs are produced and distributed



- After setting aside masks for frontline workers, the Chinese government distributed four face masks per household in the city of Wuhan.



- South Korea has regulated 14 factories and devised a plan for how the masks would be sold to the public to prevent panic-buying and hoarding.



- Japan is supplying two face masks per household to avoid shortages of face masks for health workers.



- The US has enacted the defence military act that bans the export of face masks and other PPE to other countries. The act also forces the private sector to prioritise government orders when they manufacture PPE.



Government should carry out a special awareness campaign to encourage the public to use cloth face masks



Key messages for public communications

- Wear cloth masks in public to prevent the spread of Covid-19.
- Do NOT use N-95 and surgical masks – these are for healthcare workers only.
- Provide guidelines for making masks at home to reduce burden on manufacturers.
- Hand-washing and social distancing are important and must be practiced as well.
- People have the virus without realising it. Therefore, everyone must wear a mask to reduce the number of virus droplets being circulated.
- How to use your cloth mask:
 - Ensure it covers your nose and mouth and fits snugly.
 - Do not lower when speaking, coughing or sneezing.
 - Do not touch your mask when you are wearing it.
 - Remove mask safely without touching the inside.
 - Wash hands immediately after removal.
 - Wash masks every day in warm soapy water and iron when dry if possible.
 - Get two masks, so you can wear one while the other is being washed.



- **Create a special awareness campaign** using social media, websites and TV stations using graphical content.
- Show the materials as well as steps required to produce face masks at home and how to keep masks clean.
- Mandating mask usage will be more challenging in lower-income communities.

The US Surgeon General demonstrates how to make cloth face masks on CDC's website and social media pages



Department of Health, Republic of South Africa social media campaign

The National Department of Health has recommended that **South Africans should wear CLOTH face masks** when in public to prevent the spread of COVID-19.



Annex



South Africa's Department of Health social media campaign to promote the wearing of cloth face masks in public



The National Department of Health has recommended that **South Africans should wear CLOTH face masks** when in public to prevent the spread of COVID-19.



The National Department of Health recommends that:

Everyone should wear **CLOTH face masks** when in public.



Members of the public should not use N-95 and surgical masks; **medical masks remain reserved only for healthcare workers.**

Handwashing and social distancing still remain the most important prevention strategies for COVID-19



Why must I use a cloth face mask when going out in public?



The main benefit of everyone wearing a face mask is to **reduce the amount of Coronavirus or Influenza virus droplets being coughed up by those with the infection**. Since some persons with the Coronavirus may not have symptoms or may not know they have it, everyone should wear a face mask.



How to use a cloth face mask:

- The face mask must cover the nose and mouth completely.
- Face masks should not be lowered when speaking, coughing or sneezing.
- Face masks should not be repeatedly touched – fidgeting with the mask repeatedly is strongly discouraged.
- The inner side of the mask should not be touched by hands.
- Wash hands after removing the face mask.
- Wash cloth face masks with warm soapy water and iron when dry.
- Each person will need to have at least 2 face masks so that one face mask is available when the other is being washed.





Further resources on international standards and guidelines in the production, quality control and regulation of face masks

Face mask standards available for governments to adopt

There are several international standards that determine minimum requirements, methods of testing, production and use of face masks. **ISO, CEN and AFNOR** lay out different metrics through the following standards:



ISO 22609:2004

Clothing for protection against infectious agents – medical face masks



EN 14683:2019

Medical face masks – requirements and test methods



AFNOR SPEC S76-001

Barrier masks – guide to minimum requirements, methods of testing, making and use

All guidelines set minimum standards for the following requirements

1. Visual inspection
2. Dimensions
3. Packaging
4. Materials
5. Cleaning and drying
6. Surface condition of the parts
7. Penetration of the single-layer or multi-layer composite
8. Harmlessness as regards the skin and inhaled air
9. Head harness
10. Breathing resistance