

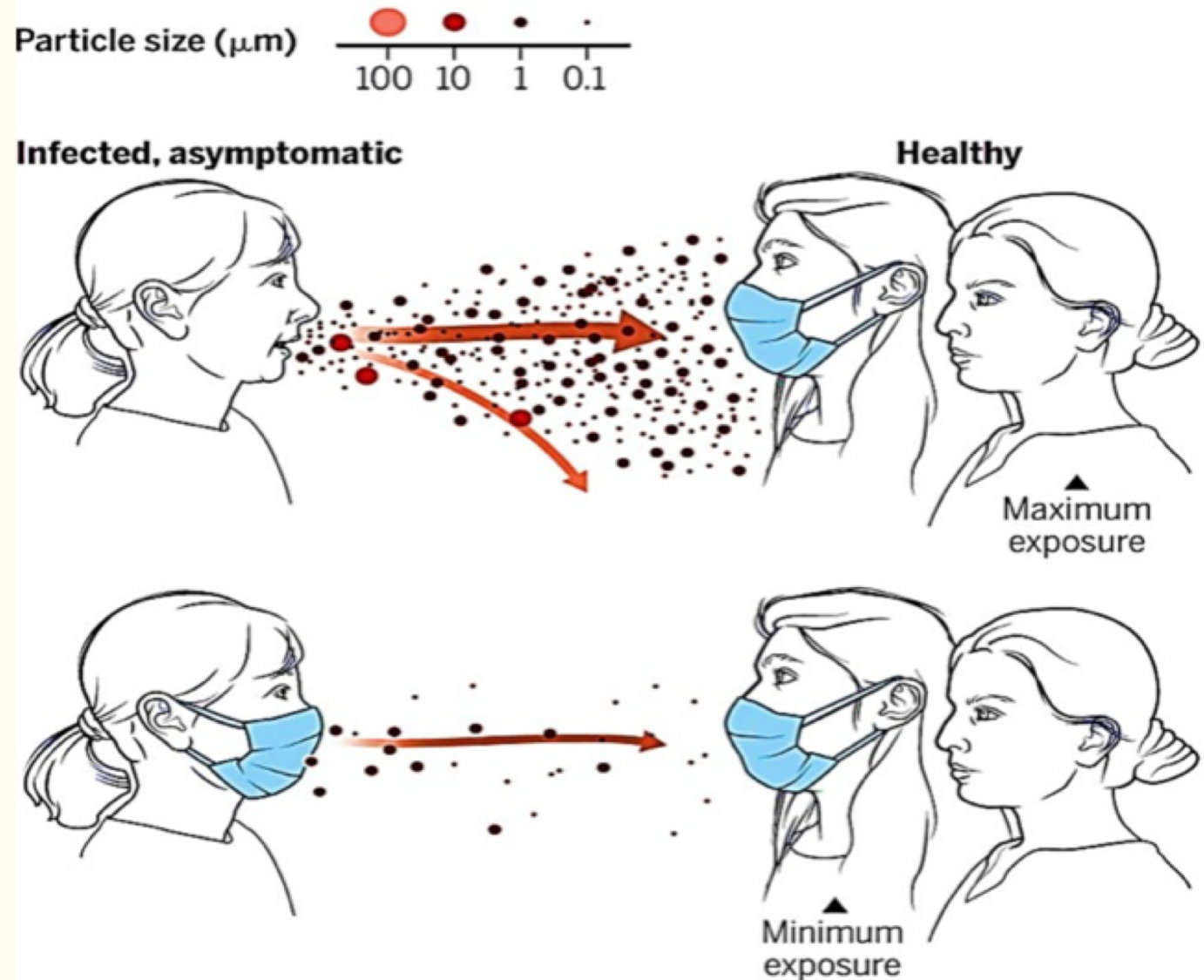
Coronavirus: What type of mask to wear and when



<http://www.kristerforsberg.com/Guide.pdf>

Masks reduce airborne transmission

Infectious aerosol particles can be released during breathing and speaking by asymptomatic infected individuals. No masking maximizes exposure, whereas universal masking results in the least exposure.



When 95 % wear mask "combined" filter efficiency is achieved

Airborne transmission of SARS-CoV-2 is the dominate route of aerosols

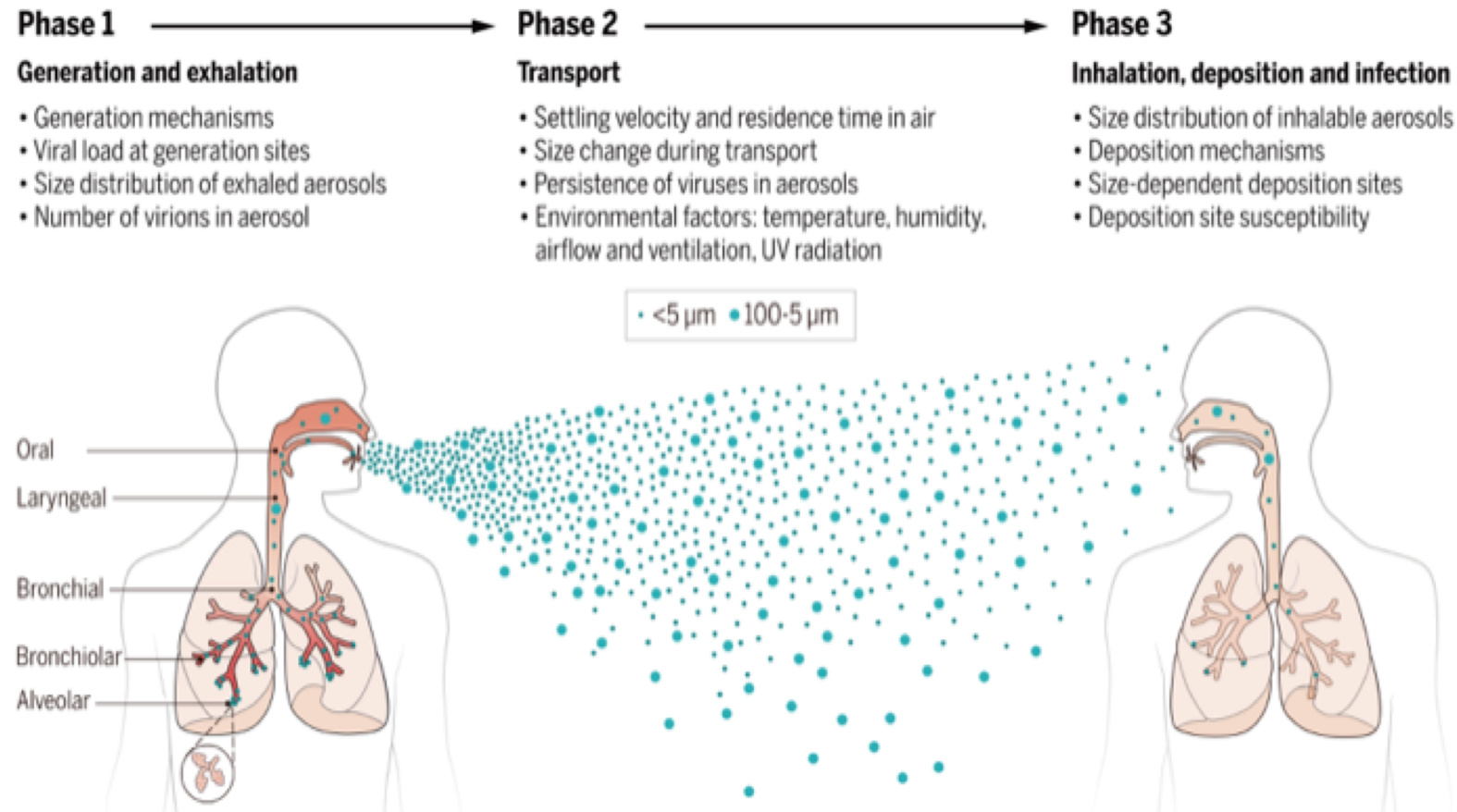




Fig. 1. Airborne transmission of respiratory viruses.

Phases involved in the airborne transmission of virus-laden aerosols include (i) generation and exhalation; (ii) transport; and (iii) inhalation, deposition, and infection. Each phase is influenced by a combination of aerodynamic, anatomical, and environmental factors. (The sizes of virus-containing aerosols are not to scale.)

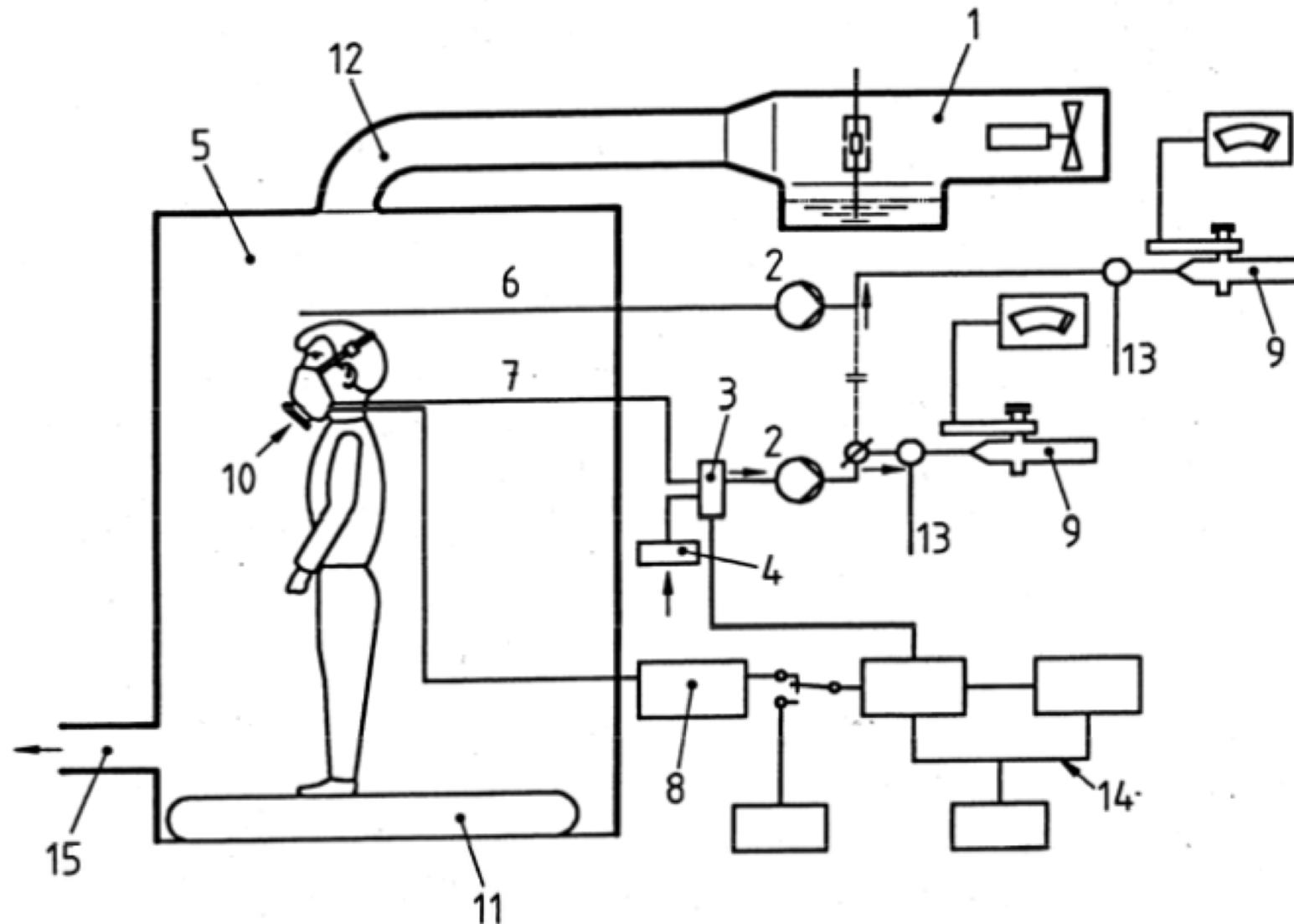
<https://www.science.org/doi/10.1126/science.abd9149>

Understand the difference

		
EU Standard EU Directive Risk category	EN14683 – Surgical masks MDD (Medical devices) Category I – Low risk	EN149 – Filtering masks PPE Category III – High risk*
Use	Protects others against drops (bacteria)	Protects yourself/others against drops and aerosols
Fit	Loosely with gaps to face	Tightly with no gaps to face
Filtration efficiency	High to large drops Low to aerosols. Three types I, II and IIR	Filter class: FFP2 94 % or 6 % penetration FFP3 99 % or 1 % penetration
Leakage	High – no requirements	FFP2 11%, FFP3 5% in-leakage

* Read Instruction for use

Testing of filtering half masks

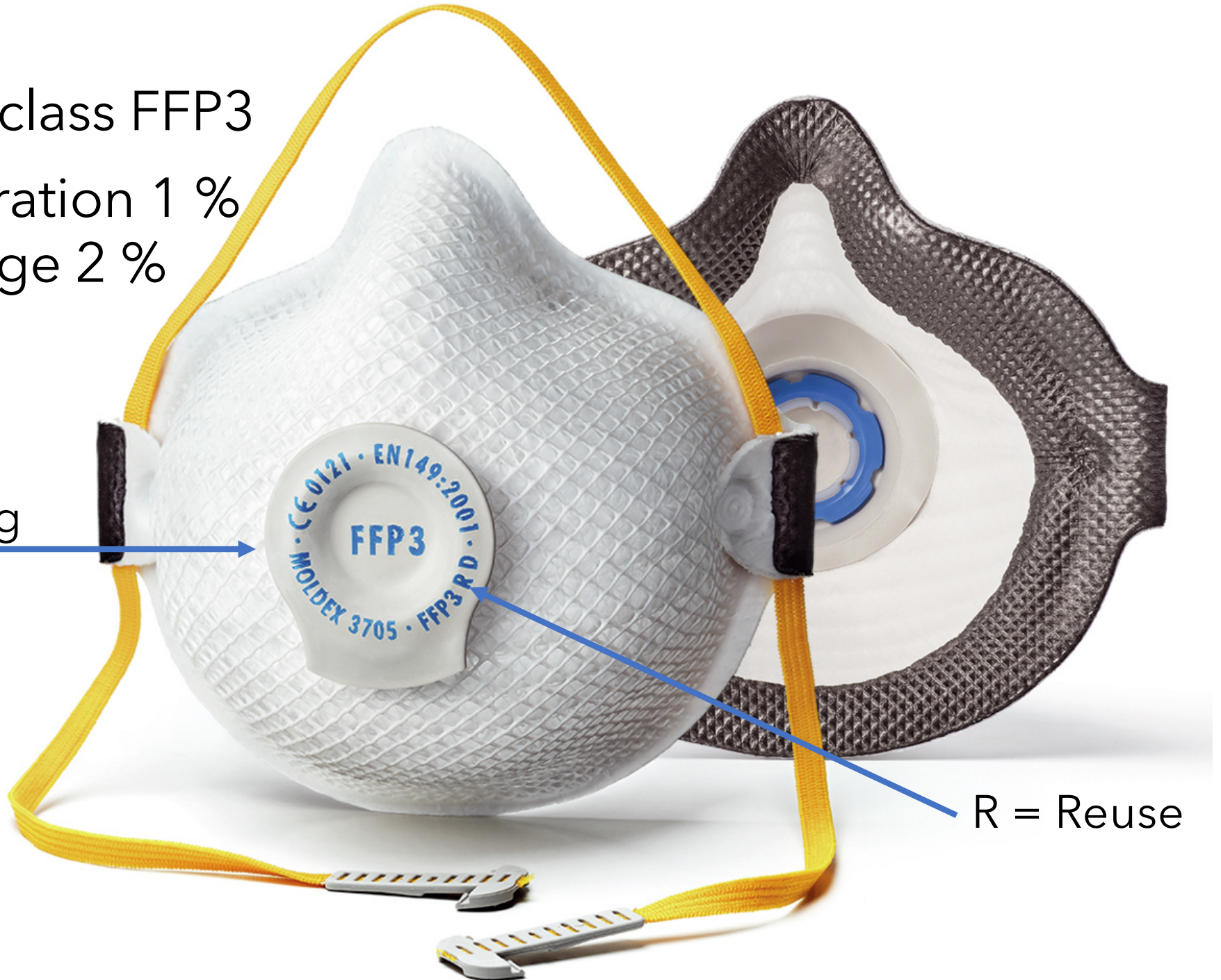


Filter class FFP3

Penetration 1 %

Leakage 2 %

Labelling



R = Reuse

Selection recommendations



High risk to be exposed to virus SARS-CoV-2
People in risk groups and health care personnel mainly



Medium to low risks to be exposed to virus: shops,
waiting rooms, traveling by bus etc., crowding, ...
Reduces transmission of virus between people effectively



Risk to be exposed to virus: all day in schools, shops,
gym, ...
Reduces transmission of virus between people to 50 – 70 %



Should not be used outside the health care

5 criteria of masks used during pandemic

1. **Resistance to aerosols and droplets.** Performance levels: < 10 % penetration of filter material and maximum in-leakage 15 %. (to be discussed)
2. **Fit** tightly with no gaps.
3. **Comfort.** A mask will not be used during a day if uncomfortable.
4. **Design.** Style is important if mask will become the new normal.
5. **Care, reuse and recycle.** It is not sustainable to dispose billions of face masks per month made of plastic fibers

ASTM F3502 Barrier Face Coverings

SCOPE: ensure barrier face coverings meeting the stated requirements provide (1) a means of source control for individual wearers by reducing the number of expelled droplets and aerosols from the wearer's nose and mouth into the air; and (2) to potentially offer a degree of particulate filtration to reduce the amount of inhaled particulate matter by the wearer

