

Family Planning:

FACE MASKS



Face masks come in various types based on efficiency. Following are general facts about face masks, types of masks, classifications, recommendations, about face masks and the influenza virus, stockpiling information and the sources.

Here are some key issues about face masks followed by more technical information.

The spread of viruses can be restricted by using face masks as the SARS experience proved. There are several types of faces masks on the market but the shelf-life of masks and or filters is limited. There are three categories of effectiveness which are listed below. Please note:

- The face mask must fit well: the nose clip, head tapes or elastic and edges must seal.
- Beards hamper effectiveness: particle-filtering half-masks are impaired by beards. People with beards are recommended to remove them.
- Particle-filtering face masks should not generally be worn for longer than 8 hours in total. Surgical masks should not generally be worn for longer than 2 to 3 hours in total.
- Other masks, if used carefully (avoiding contamination of the inner surface when removing the mask), can be worn several times by the same person.
- The face mask must be changed in the following situations:
 - If a particle-filtering mask has been worn for 8 hours in total (2 to 3 hours for surgical masks)
 - If the face mask has come into direct contact with secretions containing pathogens (the virus)
 - If the face mask has visible defects
 - If breathing resistance is increased due to moisture
- Face masks must be kept in a clean place protected from dust and moisture.
- You must have a plan to properly dispose of used or contaminated masks otherwise they become a health risk in themselves.
- The manufacturers of face masks can be contacted for information on their shelf-life.
- It has not been demonstrated unequivocally that face masks protect against infections in general since no well-founded efficacy tests have been carried out with live or inactivated germs. However, experience with SARS suggests that the spread of viruses can be restricted by face masks.
- There is the question of the psychological value of masks for the population during a pandemic.

Types of Masks

There are several types of face masks available which offer various levels of protection. The simplest way of protecting against droplet-borne germs is to use surgical masks. These can reduce the spread of germs in the exhaled air of sick people. The type of mask attached to the wearer's head by an elastic head band is recommended since it is easy to use and stays in place well. Only surgical masks (or those with an elastic band) of type II, or, if possible type IIR (the letter R indicates greater splash resistance) which comply with national standards are recommended. Surgical masks become soaked with moisture after about 2 to 3 hours, which causes them to lose their efficacy.

Classifications

In the USA, N-95 and N-99 filter masks offer a greater degree of protection. The European standard is EN149. Masks come in three classes, FFP1, FFP2 and FFP3.

The filter classification is based on the protection conferred against particles (max. 0.6 μm). The filtration efficiency is at least 95% for FFP2 masks and at least 99% for FFP3 masks. The filtration effect of the masks is

achieved by electrostatically charged fibers, the efficiency of which decreases with age and at an ambient humidity level over 80%. FFP masks are soaked through after about 8 hours.

Recommendations

During the SARS epidemic there was some evidence that FFP masks and surgical masks may have been of benefit. The WHO (World Health Organization) does not state that wearing face masks in public is an effective way of protecting the population against infection and thus preventing the spread of the pandemic; however, the organization leaves it to each country to decide whether or not to take this approach.

The Influenza Virus

The influenza virus is transmitted primarily by droplets. It may also spread by hand-to-face contact if a non-infected person touches a person or surface contaminated with infected droplets. It is not certain whether the virus can be spread in the air. Since the potential pandemic virus and its mode of transmission are not yet known, the possibility that it can spread in the air (aerosol-borne) cannot be excluded. The reader's attention is drawn explicitly to the fact these recommendations are based only on the preliminary findings currently available. Further research is required to provide evidence-based support for the recommendations. The recommendations issued by the WHO and national health organization will be adapted to reflect as accurately as possible current knowledge of the virus's mode of transmission.

Masks should have a bacterial filtration efficiency (BFE) of $\geq 92\%$, breathing resistance < 5.0 mm water/cm² and splash resistance ≥ 120 mm Hg. (Total leakage from the masks is generally around the same as FFP1 masks.)

Stockpiling Face Masks

Stockpiling of FFP masks is only possible to a certain extent because of their limited shelf-life of 3 years (see above). Surgical masks do not have a limited shelf-life. Although many federal governments will stockpile a certain number of masks, healthy members of the general population will be expected to obtain their own surgical masks.

References

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