

HEALTHY PEOPLE – HEALTHY BUSINESS

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Dear reader,

In the midst of fake news, even the highly specialized research department and fact checkers of the renowned news magazine "Der Spiegel" were misled to make a huge mistake...

In the current edition you will see a picture of a woman in the supermarket wearing a FFP2 / FFP3 filter mask. The picture is subtitled with the remark „Absolutely useful“. At best this is misleading and we in turn would recommend the subtitle „Absolutely irresponsible“. The woman is mercilessly infecting her surroundings through her exhale filter ... ►

In Austria and the Czech Republic wearing face masks is mandatory although the WHO opposes it. In the German town of Jena masks should be worn in public. But there is no such talk of masks in Heinsberg.

Face masks are in short supply in old age homes and social institutions. They are calling for masks to be sewn in order to offer any protection at all to their staff. Shady lawyers have legally warned the seamstresses about „incorrect labeling of non-medical devices“.

The uncertainties surrounding the topic of face masks are great, as is the lack.

In order to shed some light on the current discussion about wearing masks, the different types of masks and the protective effect of the various types of masks, we have summarized the most important facts for you.

Surgical masks and respirators in comparison

In the current situation everything revolves around the classical surgical mask and meanwhile also self-sewn models - the so-called face masks - on the one hand and the particle filtering respirators - so-called FFP1, FFP2 or FFP3 masks - on the other.



Classic surgical masks

A classical surgical mask primarily serves as protection for the people surrounding you. The person wearing the mask protects others while sneezing or coughing because infectious droplets are slowed down. The hygiene rules (regular hand washing, sneezing in the crook of the arm, keeping a distance etc.) must be observed despite wearing a mask.



Self-made masks

The lack of classical surgical masks can be temporarily bridged in the private sector with self-sewn face masks. The effectiveness depends, among other things, on the density of the tissue used. Heat-resistant cotton fabric is recommended. A heat-resistant nonwoven fabric can be inserted additionally and may increase the effectiveness. A flexible nose piece made of wire improves the adjustability of the mask. ▶

The following applies to both variants:

Face masks are only for the protection of others. The person wearing the mask is not protected against infection by others.

As soon as the mask gets damp (e.g. by speaking) it must be replaced. Face masks made of paper must be disposed whereas face masks made of heat-resistant cotton can be washed at 60 degrees and used again.



Respirators

FFP masks protect against particulate pollutants such as dust, smoke and aerosols. They are available in three protection levels FFP1, FFP2 and FFP3. The higher the protection level of the respirator, the more effective the filter system is. Therefore the respirator can be used against deleterious substances and higher concentrations of harmful pollutants.

FFP masks protect the wearer from droplet infections caused by viruses, bacteria or fungal spores. **For medical purposes FFP2 or FFP3 masks are solely used without an exhalation valve.** This prevents the contamination of surroundings by exhaled droplets.

Masks with an exhalation valve offer greater comfort but are only used in non-medical areas, for example asbestos remediation.

The Robert Koch Institute (RKI) recommends masks of protection level FFP2 or FFP3 (US-Standard N95) in order to be protected against an infection by corona viruses. Nevertheless they do not offer complete protection: FFP2 masks possess an eight percent and FFP3 (masks a two percent leakage. This leakage arises in cause of the permeability of the filter and unavoidable leaks between the mask and face. These protection rates are only guaranteed if the mask is used correctly and fits perfectly. Facial hair for example can impair the protective effect. Therefore an instruction about the correct handling is necessary.

Since FFP masks are currently in short supply they should primarily be reserved for medical personnel who ar in regular contact with Covid-19 patients.


These are the main differences between the two types of masks used in the medical field: ►

	 Face mask	 Respirator
What is the purpose of the mask?	Protects others from droplets in the exhaled air of the person carrying it. Protects against liquid splashes	Protects the inhaling person from particulate pollutants such as dust, smoke and aerosol.
For whom is the mask suitable?	For medical and nursing staff who want to protect patients against respiratory emissions.	<p>Without exhalation valve: For medical and nursing staff, for rescue and emergency services who want to protect themselves from the transmission of viruses/ bacteria in cause of direct contact with potentially infected people.</p> <p>With exhalation valve: For all non-medical applications.</p>
Does it make sense to use the mask in private settings?	In a private context it can make sense to protect others. If you have an infection you can prevent the spread of pathogens by wearing the face mask.	<p>In a private context the general hygiene rules for the population recommended by the RKI are sufficient.</p> <p>The most important rule: keep a distance of at least 1.50 meters!</p>
What kind of protective effect does the mask have?	No protective effect. Does NOT reliably protect the wearer from inhalable viruses or bacteria.	Filters 80% - 99% of viruses and acteria from the breathing air when used correctly. Therefore the mask has a protective effect for the person wearing it.
How well does the mask seal the face?	The mask does not seal the face.	Even when used correctly there are leaks during the inhalation phase between 2% (FFP3) and 22% (FFP1).
How long can the mask be used?	Disposable product; must be disposed after each use.	Depending on the classification: Suitable for a work shift of 8 hours or for reuse

Source: Deutsche gesetzliche Unfallversicherung e.V. , March 2020, www.dguv.de

Face masks and respirators in professional use

When dealing with bacteria or viruses at work the necessary protective measures depend on the „danger“ of the respective pathogen. In the so-called "Biostoffverordnung" the known pathogens are classified into four groups and corresponding protective measures are assigned.

Classification according to BioStoffV, § 3	For example viruses	Protective measures in professional dealings
Group 1: „Biological substances that are unlikely to cause disease in humans“	Various „animal viruses“ that (so far) are harmless to humans, e.g. Bat corona viruses	General hygiene measures
Group 2: „Biological substances that can cause a disease in humans ... a spread among the population is unlikely; effective prevention or treatment is ... possible “	<ul style="list-style-type: none"> ▶ Herpes Simplex (cold sores) ▶ Measles ▶ Mumps ▶ „ordinary“ flu 	Surgical masks for medical staff if the patient also wears a surgical mask. If the patient is unprotected use of FFP2 mask (without filter)
Group 3: „Biological substances that cause a serious illness in humans ..., there can be a risk of spreading in the population, effective prevention or treatment (is) possible“	<ul style="list-style-type: none"> ▶ SARS-CoV-2 ▶ Avian flu ▶ FSME („ticks“) ▶ HIV 	FFP2 mask (without filter) is used for „targeted“ handling of the pathogen e.g. in a SARS-CoV-2 smear center with additional safety glasses, gloves, hood, protective clothing
Group 4: “Biological substances that cause a serious illness in humans ... there is a great risk of spread in the population; ... Effective prevention or treatment is not possible “	<ul style="list-style-type: none"> ▶ Ebola 	 <p>Full protection with external breathing air supply</p>

The new SARS-CoV-2 virus is classified in a group 3 category and therefore is comparable to the pathogens of avian flu or tick-borne meningitis.

FFP2 masks are required as minimum standard for people with professional contact to the new corona virus. However the respirators do not offer 100 percent safety as they have a (permissible) leak of up to 8 percent of the inhaled air. Additional protective measures such as compliance with hygiene rules and regular skin and surface disinfection in accordance with a prescribed hygiene plan are also required for professional handling.

Face masks and respirators for non-medical use

Masks are not (yet) mandatory in the private or non-medical professional environment. Currently there is a debate about wearing face masks in public in order to limit the spread of the virus.

One reason that disfavors a mask requirement is that the face masks do not protect the people wearing them. Thus, other protection and hygiene measures such as keeping a distance and washing hands regularly could be neglected by the wearer. In addition, people who are not accustomed to wearing face masks tend to touch their face often while adjusting the mask. Often the fit of the mask is corrected because the glasses fog up or the face mask is pulled under the nose or away from the mouth as it can cause difficulties breathing. In addition it could pose a higher risk of infection because people tend to pull their masks up and down when entering or leaving a supermarket thus increasing the risk of infection. Every time the mask is touched the risk increases that the virus is carried from hand to face or from mask to hand. A reduction of case numbers and a containment of the virus cannot be achieved in this manner.

One reason in favor of the mask requirement is that the mask can protect others although it does not protect the wearer. The person wearing the mask protects his surroundings from droplets in the exhaled air. The droplets are no longer spread within a radius of 1.5 – 2 m but are largely retained by the face mask.

The number of infected people in the so-called symptom-free interval continues to rise with the increasing spread of the virus in the population. The symptom-free interval is defined as the period of time in which an infected person is contagious but does not have any symptoms yet. Although the symptom-free interval lasts only one or two days, the greatest risk for the unnoticed spread of the virus derives from this circumstance. If all people, including the infected in the symptom-free interval, were to wear a face mask there could be a relevant containment of the virus.

Conclusion

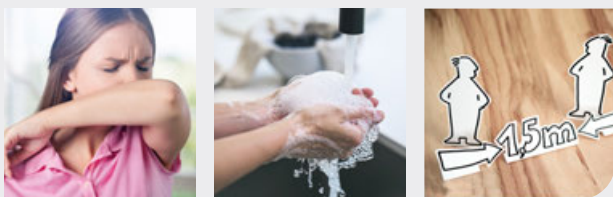
It is possible that a mandatory face mask requirement in public will come into effect, as already indicated by preliminary drafts of the federal government.

With further increasing COVID-19 case numbers, which seems ever more likely in early April 2020, this could form part of an eventual exit strategy – provided that many millions of masks are available.

And yes, even a self-made mask can help. As long as it covers the mouth and nose well, it can hold back up to 80 percent of exhaled pathogens. This also depends on the material that is used for the mask. Also in the non-medical professional environment the general wearing of masks is a way to reduce the risk of infection in case of unavoidable „contacts closer than 1.50 meters“.

And last but not least, it can reduce risks for others in your own environment.

BUT: A mask does not replace general hygiene measures. It does not replace the need for distance to third parties. It does not replace the cough and sneeze etiquette nor the regular and extensive washing of your hands.



And I stand by it: SARS-CoV-2 is not a sneaky, mean killer virus with a particularly bad character. It does what many viruses do: It uses humans as the perfect copying machine to multiply.

It is up to us to stop the virus from spreading.

And if wearing a mask in public can contribute to this goal at some point, just as a little piece of the puzzle, so much the better.



Regards,
Michael Suchodoll

PS: Remain critical, even when it comes to information posted in "Der Spiegel" ;-)