
ASPHER Statement

Statement on the

New Recommendations for the use of Masks

Following the Spread of SARS-CoV-2 Variants

January 2021

Produced on behalf of the ASPHER COVID-19 Task Force.*

*For a listing of Task Force Members and additional information see:
<https://www.aspher.org/covid-19-task-force.html>.

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For an infographic on proper mask use, see the ASPHER [Protocol for the Strategic Management and Use of Masks](#).

Since the beginning of the COVID-19 pandemic, the Association of Schools of Public Health in the European Region (ASPHER) has spoken out publicly in favour of the widespread and correct use of masks and their inclusion in the Non-Pharmaceutical Measures (NPM) system. To this end, ASPHER produced an open-access report (1), in April 2020, from which two Statements were extracted: one focused on the use of masks in adults (2), where a material management protocol is proposed in which priority is given to access to masks in a descending order depending on the contagion risk. The general idea is that everyone should have the right to protection from pandemic transmission through the use of masks, with access to the best possible mask, given the objective incurred risk and the availability of existing material. A Statement was also produced conjointly with the European Academy of Paediatrics (EAP) on the use of masks by children (3), in June 2020.

Different technologies have different capacities to be a physical barrier to viral transmission, from FFP3 respirators to homemade do-it-yourself (DIY) masks (4). The protection values indicated by the manufacturers are always in conditions of ideal use. Therefore, protection tends to decrease with the type of activities, duration of use, the wearer's handling and the knowledge on how to apply, use and dispose of masks (4,5).

It should be noted that the conceptual reason for recommending the use of masks and respirators is primarily intended for the protection of other people. People wearing masks, if infected with COVID-19, are much less infectious to other people (1,2). Each person who is not classified as a COVID-19 patient is not aware of their condition, which means that the density of mask use by the whole population is more important than the individual use of mask/respirator. The literature supports this reading (5); with mask use of around 80% of the population, good results can be achieved in preventing spread of the virus.

Recently, new viral variants of the SARS-CoV-2 virus have appeared with a profile of greater reproductive capacity in the host and, thus, greater transmission efficiency (e.g., the variants B.1.1.7, B.1.351 and B.1.1.28 (or P1)) (6). Likewise, other previously known variants are beginning to present new epidemiological expression signs, such as L.452R (7). These lineages are causing a vast increase in the number of COVID-19 cases, as is already the case in the UK and Portugal (8). For example, in Portugal, over the previous two weeks, the B1.1.7 lineage represented 3% of cases, currently close to 20% and estimated to reach 60% by the end of this month (January 2021), according to the health authorities (9). Therefore, new measures are needed to hinder the spread of COVID-19.

In the search for new answers, both the academy (10) and some health authorities (11) are beginning to recommend the use of respirators in shops, public transports (12), which corresponds to the technical option of grading protection using higher levels of material.

ASPHER understands the legitimate concerns that are at the origin of these new recommendations. However, it cannot fail to alert that combating the pandemic must be based on scientific evidence and respect for ethics. The following elements are highlighted:

1. The new SARS-CoV-2 viral variants differ from the previous ones in essentially the form of their Spike protein (13). A respirator or a mask is a mechanical barrier with a given porosity and other physical properties that hinder the outflow of viruses in their association with the aqueous environment (droplets and secretions) from cases of infected people, and, in addition, in healthy people protects the entry of viruses from outside to a certain degree.
 - a. There is no structural change in the virus's dimensions or mechanical behaviour in any new variants.
 - b. However, there is likely to be a significant increase in the number of expelled virus particles by those infected.
2. Recently, the suggestion to use layers of the same or different types of masks and masks with respirators has appeared in the press and opinion leaders (14,15). The rationale that presides over this thought is not meaningless, as objectively two protective layers tend to protect more than one. However, our scientific interpretation and policy decisions interpretations should not be immediate due to the following aspects:
 - a. The use of surgical masks in a real environment, if correctly used, presents a degree of protection similar to that of N95 respirators (4).
 - b. There are still scarce laboratory studies that analyze the effect of masks associations with risk of infection (16), making it impossible to formulate a safe idea beyond whether there are gains or not in this latest proposed approach and if so, what type of association should be recommended. It remains to be identified whether the potential gains occur only in highly contaminated environments or also in community settings (17).
 - c. We are not aware of laboratory work and even less of research in a real context that demonstrates changes to the already known behaviour of respirators and masks or shows differences in the behaviour of materials regarding the disease transmission.
 - d. Finally, if gains in one or more associations of masks or masks/respirators are verified, the resulting inconveniences and costs must also be investigated. For example, the greater respiratory effort required, the induced fatigue, and thus a greater appeal for removing the mask, the generation of resistance to its use and the greater population consumption of mask materials (4).
3. The recommendation to use more sophisticated material immediately raises real dangers:
 - a. The production of clinical or occupational grade respirators is much lower than that of surgical masks or than COVID-19-certified cloth masks. Therefore, if respirators are subject to the demand of hundreds of millions of people in the countries that recommend its use, it will cause a potential depletion in the very short term in international supply chains.
 - b. The material with the highest filtration capacity, such as FFP2/3 respirators, must be reserved firstly for professionals who deal with COVID-19 patients, such

as health professionals, professionals in nursing homes with COVID-19 infection cases, ambulance services professionals, funerals and others that are exposed to a high contagion risk due to their hazardous occupational activity (18). After the international diffusions of the more contagious variants of SARS-CoV-2 in early 2021, some European Countries also made the FFP2 masks more widely mandatory for public transport and for users of other businesses such as pharmacies and markets.

- c. The recommendation for the use of FFP1 respirators is difficult to understand, as their protective capacity is very similar to surgical masks (4), which are much easier to supply.
- d. There is still a worldwide shortage of surgical masks for health personnel and similar (5), even in many countries within ASPHER's sphere of influence. Although each of the groups mentioned above already has surgical masks, it is common that there is an insufficient number of available masks to make a shift in desirable conditions.
- e. Respirators are produced with many other materials than masks, and many are made from plastic microfibres. The shift from using surgical masks to respirators raises a new environmental issue when surgical masks' mass use has not yet been solved.
- f. This potential public health policy response of increasing the gradation of protective materials in no way responds to the important problems of some people refusing to wear a mask (active or passive resistance), nor to the even more frequent problem of incorrect use of masks.
- g. The call for imposing the use of increasingly expensive materials aggravates the risks of economically vulnerable groups, and becoming yet another tool for social stigmatization.
- h. It is unknown, at this moment, whether the widespread use of progressively more demanding mask materials for the new virus variants does not trigger a natural selection of those strains most capable of handling this challenge by creating successive waves of more aggressive variants or strains.
- i. Proposing the mask to respirator response can pose new complex challenges in paediatrics at younger ages.

ASPHER agrees that it is necessary to act quickly and respond to the population's legitimate fears, and for health authorities, and other agents to respond to the pandemic in the field. Therefore, we propose the following:

1. There is an urgent need for research to answer the effective behaviour of different types of masks and respirators regarding new SARS-CoV-2 variants.
2. The refusal to wear masks must be combated very actively through information and training of resistant populations.

3. A training and education campaign for the general population should be launched, of unprecedented size, aimed at combating passive resistance or hesitancy to the use of masks. People have to be aware of the recommended mask use situations and settings even when they are not under external surveillance, or inappropriately feel that they can relax from wearing something that is uncomfortable.
4. The previous point assumes a vital role as the vaccination process is underway (14). It is fundamental that awareness and training is provided for the population not to relax the use of masks until group immunity acquired or other studies recommend otherwise. In favour and support of this option, it must be noted that:
 - a. Immunization protection is not obtained immediately after inoculation of the vaccine.
 - b. No vaccine is 100% effective.
 - c. If people who are already vaccinated stop wearing a mask, it becomes impossible for the local authorities and local security personnel to ensure that the population complies with sanitary rules.
5. The training for the correct use of masks has to be greatly reinforced, to include: mask placement protocol, correct use protocol, disposal protocols, replacement, among others.
6. Reinforce immensely the idea that the mask alone is insufficient. There is a system of NPM that has to be articulated where the other measures also have to be done correctly to ensure most effective protections from mask use.
7. We also recommend the intensification of scientific and socio-economic research regarding the costs-benefits associated with use of current masks and proposed masks/respirators, especially for wider community use.
8. Efforts should be made to develop a more circular sustainable economy around the production-use-elimination of masks and respirators. There is still much room for improvement in technological and behavioural knowledge to make this possible. Therefore, we must encourage scientific and technological research on the multiple aspects of this process.
9. After almost a year of pandemic evolution, the supply of medical and cloth masks certified for COVID have become sufficient, at least in most countries covered by ASPHER. The use of DIY and cloth masks that are not SARS-CoV-2 certified has been a useful non-pharmaceutical measure so far, particularly for those not able to get more certified grade cloth masks. Now is time, we suggest that the use of DIY and cloth masks that are not SARSCoV-2 certified is phased out. Disadvantaged communities should be assisted to get better access to affordable and appropriate supplies.

The Association of Schools of Public Health in the European Region (ASPHER) is the key independent European organisation dedicated to strengthening the role of public health by improving education and training of public health professionals for both practice and research. ASPHER's Membership is made up of more than 100 Schools and Programmes of Public Health from over 40 countries in Europe.

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