



## **Use of facemasks in the community as a means to curb the spread of the COVID-19 virus - position paper:**

### **Summary:**

1. Mandatory mask wearing in public spaces has been enforced in Israel for the past two years, initially both indoors and outdoors, and, at present, indoors. In this position paper we will review the professional literature on mask wearing as a preventive measure against transmission of viruses.

2. Face masks are intended to be worn by healthcare professionals while performing specific tasks, and not systematically in the community. Until two years ago there was a consensus regarding the ineffectiveness of wearing masks in public as a means to stop viral respiratory tract and flu-like infections.

3. The information gathered during the COVID-19 pandemic does not change the knowledge in the field significantly. Presently, the recommendation to the general public to wear masks is not based on evidence. Studies showing efficacy do not meet the acceptable scientific standard which is based on *Levels of Evidence*. Studies that meet the standards indicate ineffectiveness. This is also consistent with what is known about biophysical mechanisms of the transmission of the virus.

4. Mandating mask wearing on the general public must be supported by a solid factual basis and rigorous harm-benefit analysis. We did not find any evidence in our literature review to support the claim that wearing a mask in public protects the person who wears it, or the people around them from infection or illness.

5. There is, however, evidence in the literature of possible harm caused by prolonged wearing of masks, especially in children. Children are not the driving force for COVID-19 infections and are no more in danger from this virus than from any other winter infection.

6. Therefore, the PECC is recommending that the wearing of masks be limited to their intended use; worn only by healthcare professionals in specific settings. In other instances, wearing a mask can only be a recommendation not based on evidence. An exception is the self-protection given by an N95 respirator (intended for use by health care professionals and not for extended





or repeated use). The authorities must provide reliable information to the public so that individuals can assess their personal risks vs. benefits and make an informed decision. As for children, the PECC recommends against extended wearing of masks due to concerns for actual harm to their health and development.

### Introduction:

Non-Pharmaceutical Interventions (NPI) are preventative measures used to prevent the spread of diseases. NPI measures are restrictions on gatherings and mobility, closures and mask wearing. **In Israel mandatory masking was imposed on the public in a sweeping and unprecedented way. The reasoning, as provided by the health authorities in an official statement, was that mandatory masking curbs infections and saves lives. However, this justification is without factual basis.** Additionally, the mask wearing mandate is characterized by selective enforcement, is ignored by the leaders and decision makers, who choose not to lead by example.

In this position paper we will review the current knowledge regarding the effectiveness and safety of masking in the prevention of COVID-19 virus spread. We will conclude with our recommendation based on this knowledge. This document does not discuss the wearing of masks in medical settings. Current research does not distinguish between masking indoors or outdoors.

### Definitions [1]:

Face mask: Can be a **medical/surgical mask**, a **cloth mask** or an **air/respirator filter** (e.g., N95).

Protection: Can be a protection from **infecting others** by the person who wears the mask (source control), or protecting a person who wears a mask from getting **infected by others** (wearer protection).

### Effectiveness of wearing masks in the community:

Prior to the COVID-19 pandemic, there was a **consensus on the ineffectiveness of sweeping mask wearing in public settings** (either surgical or cloth masks) as a means to stop **transmission or infection** of respiratory tract infections or flu-like viruses, one of which is the COVID-19 virus. This consensus was based on clinical trials, systematic reviews (including the Cochrane review, which is considered particularly reliable, since 2020), and clinical



guidelines from health organizations such as the Center for Disease Control and Prevention (CDC) and the World Health Organization (WHO) [2,3,4,5,6,7].

**The acceptable use of masks is within specific medical settings:** for example in the operation room (to prevent infection of a surgical wound), or in contact with patients who are under droplet infection isolation (in case of surgical masks), or airborne infection isolation (in case of respirators), when used by healthcare worker with additional personal protective equipment (PPE) [8,9].

**When the pandemic broke out, the heads of the health systems in Israel and around the world set out to explain to the public that there was no need for or point in wearing masks [10]. In April 2020, the directive suddenly changed, the pendulum swinging from one end to the other, with no satisfying explanation, and masks became mandatory almost everywhere [11]. This policy does not seem to have been based on scientific evidence, certainly not on the results of randomized controlled trials (RCTs), as is customary:** Despite the wealth of studies on the subject, only two controlled clinical trials regarding the efficacy of wearing masks in the community were added to the literature during the COVID period—one found no wearer-protection benefit to wearing masks [12]; The second study found only a negligible benefit, only in those aged 50 and over, and did not find benefit below that age, also not in protecting the environment from transmission (source control). It also did not examine the effectiveness of masks in lowering asymptomatic carrying of the virus [13].

**Other studies on the subject that have appeared since the onset of the COVID-19 pandemic suffer from poor quality and many biases;** they include narrative reviews (which are not subject to the rules of systematic review and are based on subjective article selection without evaluating the quality of the studies reviewed [14]; observational, non-randomized trials, in which the collection of information was based on telephone surveys [15, 16]; computational or mechanistic models that do not include clinical results [17, 18]; natural experiments or ecological studies that are not controlled and that do not control confounding variables (such as actual compliance with mask mandates in practice, underdiagnosis due to testing policies, and use of other protective measures such as ventilation or social distancing [19, 20, 12].

**Such studies do not conform to accepted scientific standards that enable reaching operative conclusions, and it is not customary to deduce from them a treatment policy (more details in the blue box below).**



**Some of those studies found no benefit in the wearing of masks [22,23].**

Even in the meta-analysis that found benefit to the wearing of masks, the low level of protection, the biases and the inconsistencies of studies in the field were emphasized [24].

**The implementation of sweeping mask mandates on the basis of a misinterpretation of these missing data, as was done for example by the CDC in the USA** (where the issue also assumed a political character) [25] became the subject of criticism in the scientific community [26, 27, 28, 29].

**Even in their most recent guidelines, international health associations are very hesitant when it comes to the use of masks, noting that the evidentiary basis for the widespread wearing of masks among the general public is very poor**, and that masks are recommended especially if other measures, such as ventilation or social distancing, cannot be taken [30,31]. **All the more so when it comes to children:** The WHO has determined that children under the age of 5 should not be required to wear masks, and that children under 12 should be required to do so only under special circumstances [30].

**In a letter from the Ministry of Health written in November 2021 in response to a request under freedom of information, the lack of scientific proof of the effectiveness of masks was emphasized, as well as the fact that part of the purpose of mask mandates was to “convey an educational message” [32].** Mask mandates were instituted in Israel even in the open air, a step which the Director General of the Ministry of Health himself admitted has no real importance, was not done for considerations of public health [33]—and was subsequently cancelled.

Even in the discussion of the pandemics committee in June 2021, there was no sweeping recommendation for mask wearing [34], with the exception of “in health institutions, in sensitive areas and for specific populations, and to encourage individual use in a balanced manner.” **Despite this, the Ministry of Health continues to disseminate to the public baseless information, such as that the wearing of masks by two people increases protection to 95%.**

**The mask’s lack of efficacy in inhibiting transmission is probably related to the virus’s mechanism of transmission.** Respiratory viruses can be transmitted from person to person through **droplet transmission**—which happens through direct contact between the bodily fluids (that are transmitted through coughing, sneezing, etc.) of a person carrying the virus and the exposed mucous membranes (such as nose, mouth or eye) of the person catching the virus—or through **airborne transmission, or aerosol transmission**—which happens through tiny droplet nuclei that carry the virus in the air over long distances, and which are





called aerosols. While the droplet transmission range is short, airborne transmission can occur at great distances, and the tiny particles can remain in empty spaces with no humans in them, such as stairwells (similar to cigarette smoke, for instance) and pass through permeable barriers such as fabrics or medical masks. The separation between the two transmission mechanisms is artificial, and sometimes the transmission can occur through both mechanisms [35].

When it comes to the novel COVID-19, its transmission is also airborne [1,36,37], **and therefore medical/surgical masks or cloth masks are not effective in stopping it, and respirators/filtering face pieces (e.g., N95) have only partial efficacy in stopping it when well adjusted to the face in specific situations of the contact of medical staff with a patient who is in airborne-infection isolation, and when combined with additional protective measures [8]. Repeated or long-term use of respirators/filtering face pieces is not routinely practiced and may cause side effects as well as contamination of the respirators/filtering face pieces themselves, as detailed below.** Examining the mechanisms of transmission, the diluting effect of the open air, and the need for exposure to an infective dose (dose infective) in order to be infected indicates a very low risk of transmission in open spaces compared to closed spaces. Most of the transmission occurs when the patient is symptomatic and indoors. The risk from COVID-19 characterizes an elderly population with comorbidities.

**Masks have not demonstrated, therefore, according to accepted scientific standards, significant efficacy in inhibiting transmission of COVID-19. The lack of efficacy is also supported by evidence from the field**—as has become evident again recently in waves of morbidity including in places such as Hong Kong. [38], where the percentage of mask wearers has been maintained at a very high level from the beginning of the crisis and until today.



### **Regarding types of trials:**

In medicine, studies of different types have different importance. The studies by which it is customary to determine treatment policies are of the RCT type (Randomized Control Trial). In short, the meaning of this is that the effect of a drug, vaccine, preventative measure such as masks and the like, was tested on two groups of people **that were randomly chosen**, so that both groups include as similar a makeup as possible of subjects, which makes it possible to reduce various biases resulting from non-random assignment, isolate the research question, and prove (or alternatively, refute) probabilistic causation. It is not customary to conclude the efficacy or safety of medical intervention, and certainly not to prescribe treatment policy based on non-randomized studies (such as cohort studies, ecological studies, etc.) [39].

### **The damage in masking:**

There is no medical intervention that does not come without a price - health, societal, and/or economic. **The justification for an intervention is that its benefit significantly outweighs its potential harm.** Like the other issues regarding masks, the issue of their potential harm is also still being examined. However, there is already ample evidence, from the scientific literature and the opinions of experts, of possible health damage, in particular to children. Examples of such evidence include: Possible harm to children in the field of cognitive and verbal development and in the field of education [40,41,42]; headaches, impaired concentration, dryness, clogged nose, shortness of breath, decreased blood oxygen saturation levels and increased carbon dioxide levels [43,44]; danger of infection as a result of contamination of the mask itself [45]; skin complications such as rashes, acne, and other skin conditions [46]; environmental damage [47], and more.

**An article recently published on the *Nature* journal's website described the presence of the Titanium Dioxide compound (TiO<sub>2</sub>), which is suspected of being carcinogenic, in an amount that exceeds the standard - in reusable and single-use masks intended for use by the general public. The article criticized the lack of regulation regarding the production of the masks [48].**

**Reuse of respirators (e.g. N95 masks) is not common practice in routine conditions, and may cause the respirator to become infected [49]. There is evidence that the intensity of side effects increases with the use of respirators compared to other masks [43].** Other side effects that have been documented on respirator use include lack of



breath, increased levels of carbon dioxide in exhaled air, decreased blood oxygen levels, and changes in blood flow to the brain [50,51,52].

**Mask mandates constitute a behavioral intervention, unprecedented in scope, and possible additional effects that may be relevant have yet to be sufficiently researched and clarified.**

### Masks and Children - Masks Mandates in Schools:

As is now common knowledge, COVID-19 is of **no more danger to children than other winter ailments, even when long-term complications are taken into account** [53,54,55,56,57]. **Contrary to the impression created in the media, there is no evidence that schoolchildren play a significant role in infection.** In fact, studies have shown that infection in children is a "mirror image" of infection in the community, and that the child's chance of being infected in the community or at home is equal and can even be higher in the community than at school [58]. Therefore, it seems that **masking at schools is neither necessary nor beneficial, and brings with it a real risk of harm.**

### In the world at large:

Considering the lack of evidence on the effectiveness of masking, and the accumulating evidence of possible harm from it - this topic is far from being "settled science". **In the world at large, there is no uniform policy of masking - and a large portion of countries in the world never mandated masking, or have recently removed their mandates, including Sweden, the U.K., and a considerable portion of U.S. States** [59,60,61,62,63,64,65].

### Summary and Recommendation:

- 1. In light of the lack of clear evidence for the effectiveness of masking in the general public, and testimonies of possible health and environmental damage, we are of the opinion that the use of masks should be limited to its original outline - medical staff wearing masks in specific zones. In other zones, the wearing of masks can be a recommendation, as it is not supported by evidence.**



2. **The authorities must provide reliable information to the public that will allow each citizen to formulate his or her own risk assessment and make an educated decision on the matter.**
3. **Regarding children, the recommendation should be against them wearing masks.**
4. **Mask mandates as a means of “sending an educational message” or for any purpose other than those of a professional health nature with a proven benefit is unacceptable.**

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