

MASKS USED BY HEALTH PROFESSIONALS: WHAT IS RECOMMENDED?

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In December 2019, the World Health Organization (WHO) was alerted to the emergence of a new strain of coronavirus (SARS-CoV-2) in China, not identified at that time in humans, which caused illnesses severe acute respiratory disease (COVID-19). Since then, the number of people affected by this disease has increased substantially.

At the end of January 2020, WHO declared that the outbreak of this virus consisted of a Public Health Emergency of inter-

national concern, and in March, this disease was declared as a Pandemic⁽¹⁾.

As there are no specific vaccines and medications available for the treatment of this disease, actions have been taken to reduce the spread of the infection. Among these measures are environmental control such as hygiene and disinfection, early detection and reporting of cases, social distance, isolation and quarantine, and the use of Personal Protective Equipment (PPE) in health servi-

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ces(1). Among the PPE to be used are masks and facial respirators.

There are several types of masks: surgical, N95, FFP3^{3*}, FFP2^{4**}, FFP1^{5***}, among others, is classified into two types: aerosol resistance, type S, which retains solid and liquid particles based on water, and type SL, which retains solid and liquid particles based on water and oil.

Filter masks FFP2 and FFP3 are used to protect biological agents in the form of aerosols and are also masks resistant to the projection of body fluids. FFP1 filter masks are not recommended for use against biological agents, as the filters only protect against the presence of solid particles such as dust or non-greasy mists. The N95 is an aerosol filter classification adopted by American agencies and is equivalent to the FFP2 filter⁽²⁾.

The main national and international health agencies agree that face masks and respirators serve to protect health professionals, however, there are some differences in what is recommended by each of these

agencies regarding the use of these protective measures.

Therefore, at this time, we will solve doubts regarding the masks and facial respirators used by health professionals during their work activities. We restate that its use is no different in times when there are no pandemics like that of COVID-19.

The surgical mask is a barrier for individual use that covers the nose and mouth. However, it is loose on the face and does not protect the professional from inhaling environmental aerosols. It was designed to reduce the contamination of the respiratory secretions generated by the patient in the environment and also to protect the worker from the inhalation of droplets or other bodily fluids, transmitted in a short distance and that can reach his respiratory pathways⁽³⁻⁴⁾.

The WHO recommends the use of the surgical mask for routine procedures, and it must be exchanged whenever it presents dirt and moisture⁽¹⁾.

^{3*}Maximum allowed penetration into the PFF3 filtering semifacial piece – 1%

^{4**}Maximum allowed penetration into the PFF2 filtering semifacial piece – 6%

^{5***}Maximum allowed penetration into the PFF1 filtering semifacial piece – 20%

The N95 and FFP2 masks are PPE, also called respirators, used to reduce the worker's occupational risk, covering the mouth and nose, with adequate sealing to the user's face. Besides, these respirators have a filter capable of reducing the risk of inhaling particles containing viruses, bacteria or fungi, through the retention of these contaminants, by exposing the user to droplets or aerosols⁽³⁾.

N95 and FFP2 respirators have an equivalent level of protection. Those classified as FFP2 follow the Brazilian criterion, and those classified as N95 follow the American norm. Both have a minimum filtration of 95%⁽³⁻⁵⁾.

Valved respirators also have the same level of protection as those without it. The difference between them is that the presence of the valve reduces resistance to expiration, facilitating breathing. However, these respirators are not recommended for surgical procedures, sterile procedures, and also when professionals are exposed to a high production of body fluids⁽⁵⁾.

WHO and other agencies recommend the use of N95 and FFP2 respirators, in the case of procedures that produce aerosols⁽¹⁻⁸⁾.

On the other hand, American agencies^(5,9) recommend the use of facial respirators for all routine procedures and also in high-risk situations, as in the case of patients with COVID-19. English guidelines⁽¹⁰⁾ recommend the use of the FFP3 respirator in the case of procedures that produce aerosols.

Regarding single-use or reuse of respirators, the United States Center for Disease Control and Prevention states that reusing them, that is, removing and replacing them every time while providing care, can result in a risk of contamination by contact, when the professional touches the contaminated surface of the respirator, without realizing this action. Prolonged use is more favored in relation to its reuse, due to the lower risk of touching the respirator⁽⁵⁾.

The prolonged use of the respirator for up to 8 hours can be safer than storing it after use and then reusing it, since the functionality of the respirator depends on variables that must be evaluated, such as damage, perforations, elastics preserved, moisture and the presence of bodily fluids. Besides, when the respirator hampers breathing, it may be contaminated⁽⁵⁾, and should, therefore, be discarded.

This assessment is difficult to be carried out in a standardized manner by all users, when reusing these facial respirators.

If the option is to reuse the respirator, the team should receive training in practices necessary to minimize the risk of contamination. Among these practices, we acknowledged the use of a surgical mask over the facial respirator to reduce its contamination, storing the respirator in a container with identification, which can be sanitized or discarded and never touching the inside of the respirator(5).

It is important to remember that the surgical mask should never be used under facial respirators, as it prevents the correct sealing of the facial respirator to the user's face and the surgical mask used on top of the facial respirator, must be discarded with each use and when showing signs of moisture or dirt.

All of these issues are important for respirators to fit users' faces correctly and be safe for workers to use.

Thus, health professionals who work directly in the care of patients with or without the infectious disease, should make appropriate paramentation and mask for the

task, avoiding transmission and self-contamination.

In addition, the rational use of PPE is a practice that must be adopted by all workers. For this, not only in difficult times of pandemics, all health institutions should use respiratory protection protocols and training on paramentation and deparamentation, when there is a need to use PPE.

These actions provide more excellent occupational safety to health professionals and also, quality care to assisted clients.

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