

CRITERIA FOR USE OF PASSIVE RESPIRATORY PROTECTION DEVICES BY THE GENERAL PUBLIC

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ABSTRACT

Background: Passive (i.e. non-pump powered) respiratory protection devices are less costly, simpler to don and operate, have longer shelf lives and present much smaller logistic burden. When stockpiling and/or distributing gas masks for large populations of civilians, it is important to be able to determine who may safely use a passive mask and who must be supplied with a forced-air device.

Methods: This review systematically lists and evaluates the patho-physiological factors that determine eligibility for a forced-air device.

Results: Patients groups whose medical condition may deteriorate due to low tidal volume, high inspiratory or expiratory loads, exposure to high levels of CO₂ or low levels of O₂, or due to cognitive or mental status disturbances are listed. Clear-cut cases include patients with active cardio-pulmonary ailments, patients with facial deformations, and patients with impaired mentality. However, the status of patients with mild asthma, patients who are on medications for hypertension and the age limit in the geriatric group remains un-resolved. These groups of patients consist of up to 25% of the general population and their status may have significant financial and logistic implications on the public budget as well as their own safety.

Conclusions: Clinical and functional criteria for eligibility for forced-air respiratory CBRN protection must be based on sound information. Such data is not yet available for borderline cases that consist of a large segment of the civilian population.