

Side- effects of personal protective equipment: things to ponder

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The healthcare workers (HCWs) are constantly battling the Corona Virus Disease 2019 (Covid-19) pandemic and they need to wear the personal protective equipment (PPE) in order to protect themselves.¹ There has been a lot of uproar regarding the demand and supply of PPE and its quality. Hospitals usually check the PPE for compliance with relevant international standards but at times, it may be defective. There are instances when many of the PPE items such as aprons, gowns, respirator masks, safety glasses, shields and goggles may result in the development of allergy, especially if worn for prolong period. Interestingly, an earlier research found that 35% individuals who used the N95 masks, regularly had acne, facial dermatitis and pigmentation of the nasal bridge, cheeks and chin.² The rubber straps and metal clips in respirator masks may also cause skin dermatitis.² Wearing goggles for longer period may also cause skin irritation or reactions at the region of the cheek and nose. Any underlying skin disease in the HCW is also a cause of concern. This makes the use of PPE more challenging.

Majority of the side- effects resulting from use of PPE are attributed to wearing of gloves. Gloves made of latex, nitrile and vinyl, may cause skin reactions and dermatitis. It may be harmful in individuals who have latex allergy. After wearing PPE, if the heat from the body is not lost through proper sweating, it may result in overheating and cause rashes in the skin. The PPE should be removed if there is overheating. An individual may also develop hypersensitivity type 1 or type IV reactions due to certain chemicals present in the PPE. There are reports of side-effects due to rubber accelerators used in surgical gloves, different types of textile dyes use in the clothing, metals used in masks and footwear, and formaldehyde and other preservatives used in N-95 respirators.³ Proper washing of the face may be necessary in individuals who have acne.

We recommend that a proper PPE training courses for HCW be conducted. Any individual with history contact dermatitis or any allergic disease should be advised to take antihistaminic. A HCW may be made aware of any potential side-effects of wearing PPE and the immediate remedy to such. It is also advisable for HCW individuals to wear cotton clothes as they are better than synthetic clothes which may cause allergy. The PPE materials could also be tested regularly for any hypersensitivity.

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References:

1. Zhou P, Huang Z, Xiao Y, Huang X, Fan X-G. Protecting Chinese Healthcare Workers While Combating the 2019 Novel Coronavirus. *Infection Control & Hospital Epidemiology* . 2020; 1-4.
2. Foo CCI, Goon ATJ, Leow YH, Goh CL. Adverse skin reactions to personal protective equipment against severe acute respiratory syndrome—a descriptive study in Singapore. *Contact dermatitis* . 2006; 55; 291- 294.
3. Tay YLA. DermNetNZ. Personal protective equipment. <https://dermnetnz.org/topics/personal-protective-equipment/> (Accessed April 27, 2020).