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Is it wise not to include hair and shoe covers in personal protective equipment (PPE)

recommendations?

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Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been spreading globally for more than half year. Health care workers (HCWs) on COVID-19 floor and units are aware the higher risk of contracting SARS-CoV-2. Routine care can be resumed only with sufficient and adequate personal protective equipment (PPE)" to protect HCWs to ensure continuous patient care during this pandemic. In China, 4% of confirmed cases in the first month of COVID-19 outbreak occurred among HCWs with even higher rates in Europe, due to delayed recognition of COVID-19 rather than PPE failures. However, the items included in PPE protocol and polices vary from institution to institution. United States Centers for disease control and prevention (CDC) does not include hair and shoe cover in their PPE recommendations for HCWs.

Despite CDC not including them, hair covers and shoe covers, along with face masks, gowns, gloves and other PPEs are often used to prevent contamination from patient contact and droplets.¹ A recent study suggested that shoes of HCWs might serve as a vector of SARS-CoV-2, transferring from floors in COVID-19 rooms to floors throughout the unit.⁵ This is not surprising as SARS-CoV-2 contamination was common on floors in COVID-19 patient rooms.^{5,6} Although data on how long SARS-CoV-2 can survive on hairs, or whether it is common to have the contamination on hairs of HCWs is very limited, it has been shown the virus remains viable for hours to days on different materials.⁷ Therefore, it would be not prudent to neglect the potential risk of contamination on hairs of HCWs and not provide hair covers for them, as this could potentially increase risks of nosocomial infection among non-COVID-19 patients.

Therefore, we believe it is better to be more cautious rather than be regretful, and HCWs should be provided shoe covers and hair covers as part of PPE when providing care for COVID-19 patients. More studies will also be needed to assess the risk of contamination on human hairs, and the efficacy of hair and shoe covers in health care settings.

References:

- Guddati A. Protection of Health Care Professionals During an Epidemic: Medical, Ethical, and Legal Ramifications. Interact J Med Res. 2020;9:e19144.
- 2. Bresler AM, Bischoff MS, Böckler D. SARS-CoV-2-How can and must medical personnel protect themselves? Gefasschirurgie. 2020;15:1-10.
- 3. Rhee C, Baker MA, Klompas M. The COVID-19 infection control arms race. Infect Control Hosp Epidemiol. 2020;1-3. doi: 10.1017/ice.2020.211.
- https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html [Accessed on September 22, 2022]
- Redmond SN, Dousa KM, Jones LD, Li DF, Cadnum JL, Navas ME, Kachaluba NM, Silva SY,
 Zabarsky TF, Eckstein EC, Procop GW, Donskey CJ. Severe Acute Respiratory Syndrome
 Coronavirus 2 (SARS-CoV-2) Nucleic Acid Contamination of Surfaces on a Coronavirus Disease
 2019 Ward and Intensive Care Unit. Infect Control Hosp Epidemiol. 2020:1-13. doi: 10.1017/ice.2020.416.
- 6. Kim UJ, Lee SY, Lee JY, Lee A, Kim SE, Choi OJ, Lee JS, Kee SJ, Jang HC. Air and Environmental Contamination Caused by COVID-19 Patients: a Multi-Center Study. J Korean Med Sci. 2020;35:e332.
- van Doremalen N, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN, Tamin A, Harcourt JL, Thornburg NJ, Gerber SI, Lloyd-Smith JO, de Wit E, Munster VJ. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. N Engl J Med. 2020;382:1564-1567.