



Personal protective equipment penetration performance may be affected by temperature and humidity

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To the Editor,

We read with interest the recent article by Wild *et al.* on the importance of wearing higher protection level gowns during aerosol-generating procedures.¹ Their simulation study was mainly based on the penetration of contrast medium diluted with water through different types of gowns. Nevertheless, it has been shown that different ambient, body, and test fluid temperatures and also different types of test fluid may affect the penetration process.² Moreover, wearing personal protective equipment (PPE) might pose a thermoregulation risk to the practitioner by increasing core body temperature. As a result, penetration may increase while working with PPE because of the effects of elevated core body temperature. Furthermore, since the penetration of dye was observed after ten minutes in Wild *et al.*'s study, the humidity of the environment may also affect the drying process.³ An environment with higher humidity may delay the drying process and lead to an increase in the penetration of test fluid through the gown. High-risk situations like aerosol-generating procedures during the COVID-19 pandemic may occur in a variety of environments other than the intensive care unit or operating room. On the basis of the

above, we would suggest that testing higher-level PPE at different ambient and body temperatures as well as during exposure to different levels of environmental humidity and body fluids would provide additional helpful information about their protection levels.

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This letter is accompanied by a reply. Please see *Can J Anesth* 2021; this issue.

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