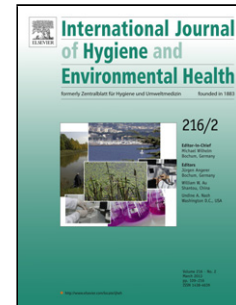


Accepted Manuscript

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PII: S1438-4639(17)30802-7
DOI: <https://doi.org/10.1016/j.ijheh.2018.03.011>
Reference: IJHEH 13205

To appear in:

Received date: 22-11-2017
Revised date: 19-3-2018
Accepted date: 27-3-2018

Please cite this article as: Steinle S, Sleuwenhoek A, Mueller W, Horwell CJ, Apsley A, Davis A, Cherrie JW, Galea KS, The effectiveness of respiratory protection worn by communities to protect from volcanic ash inhalation; Part II: Total inward leakage tests, *International Journal of Hygiene and Environmental Health* (2018), <https://doi.org/10.1016/j.ijheh.2018.03.011>

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The effectiveness of respiratory protection worn by communities to protect from volcanic ash inhalation; Part II: Total inward leakage tests

Susanne Steinle^{1*}, Anne Sleuwenhoek¹, William Mueller¹, Claire J. Horwell², Andrew Apsley¹, Alice Davis¹, John W. Cherrie^{1,3}, Karen S. Galea¹

1. Centre for Human Exposure Science, IOM, Research Avenue North, Riccarton, Edinburgh, EH14 4AP, UK.
2. Institute of Hazard, Risk & Resilience, Department of Earth Sciences, Durham University, Science Labs., South Road, Durham, DH1 3LE, UK.
3. Institute of Biological Chemistry, Biophysics and Bioengineering, Heriot-Watt University, Edinburgh, EH14 4AS, UK.

*corresponding author

ABSTRACT

Inhalation of ash can be of great concern for affected communities, during and after volcanic eruptions. Governmental and humanitarian agencies recommend and distribute a variety of respiratory protection (RP), most commonly surgical masks. However, there is currently no evidence on how effective such masks are in protecting wearers from volcanic ash. In Part I of this study (Mueller et al., Submitted), we assessed the filtration efficiency (FE) of 17 materials from different forms of RP against volcanic ash and a surrogate, low-toxicity aerosol, Aloxite. Based on those results, we now present the findings from a volunteer simulation study to test the effect of facial fit through assessment of Total Inward Leakage (TIL).

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