



# Reply: Intrapulmonary shunt and alveolar dead space in a cohort of patients with acute COVID-19 pneumonitis and early recovery

Piotr Harbut<sup>1</sup>, G. Kim Prisk<sup>2</sup>, Robert Lindwall<sup>1</sup>, Sarah Hamzei<sup>1</sup>, Jenny Palmgren<sup>1</sup>, Catherine E. Farrow<sup>3,4,5</sup>, Goran Hedenstierna<sup>6,†</sup>, Terence C. Amis<sup>3,4,5</sup>, Atul Malhotra<sup>2</sup>, Peter D. Wagner<sup>2</sup> and Kristina Kairaitis<sup>3,4,5</sup>

<sup>1</sup>Karolinska Institutet, Danderyd Hospital, Stockholm, Sweden. <sup>2</sup>University of California, San Diego, CA, USA. <sup>3</sup>Ludwig Engel Centre for Respiratory Research, Westmead Institute for Medical Research, Sydney, Australia. <sup>4</sup>Department of Respiratory and Sleep Medicine, Westmead Hospital, Sydney, Australia. <sup>5</sup>Sydney Medical School, Faculty of Medicine and Health, University of Sydney, Sydney, Australia. <sup>6</sup>University of Uppsala, Uppsala, Sweden. <sup>†</sup>Deceased.

Corresponding author: Kristina Kairaitis ([kristina.kairaitis@sydney.edu.au](mailto:kristina.kairaitis@sydney.edu.au))



Shareable abstract (@ERSpublications)

**Increased dead space following COVID-19 may be due to microvascular injury or secondary micro-ischaemia** <https://bit.ly/3Fypdwz>

**Cite this article as:** Harbut P, Prisk GK, Lindwall R, *et al.* Reply: Intrapulmonary shunt and alveolar dead space in a cohort of patients with acute COVID-19 pneumonitis and early recovery. *Eur Respir J* 2023; 61: 2202287 [DOI: 10.1183/13993003.02287-2022].

This single-page version can be shared freely online.

Copyright ©The authors 2023.

This version is distributed under the terms of the Creative Commons Attribution Non-Commercial Licence 4.0. For commercial reproduction rights and permissions contact [permissions@ersnet.org](mailto:permissions@ersnet.org)

Received: 1 Dec 2022  
Accepted: 5 Dec 2022

*Reply to M. Ackermann and co-workers:*

We thank M. Ackermann and co-workers for their interest in our recent publication [1]. These authors highlight our report of persistent increased alveolar dead space in 30% of 17 patients studied within ~2 months after an acute episode of mild–moderate COVID-19. After outlining their own work, demonstrating secondary pulmonary lobule pathologies found in the lungs of deceased COVID-19 patients, they then hypothesise that secondary lobular micro-ischaemia may be responsible for the elevated alveolar dead space found in our study.

