



# Air pollution and COVID-19: clearing the air and charting a post-pandemic course: a joint workshop report of ERS, ISEE, HEI and WHO

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**The potential role of air pollution in the worsening of health impacts of COVID-19, and the influence of the pandemic on air pollution levels in Europe is explored. This editorial outlines the major lessons learned to chart a healthy post-pandemic course.** <https://bit.ly/3hmbaya>

**Cite this article as:** Andersen ZJ, Hoffmann B, Morawska L, *et al.* Air pollution and COVID-19: clearing the air and charting a post-pandemic course: a joint workshop report of ERS, ISEE, HEI and WHO. *Eur Respir J* 2021; 58: 2101063 [DOI: 10.1183/13993003.01063-2021].

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Received: 12 April 2021  
Accepted: 26 June 2021



Air pollution is now recognised by governments, international institutions and civil society as a major global public health risk factor. The health burden of air pollution is large: 509 000 premature deaths every year in Europe [1] and serious aggravations of heart and lung diseases that affect millions of patients, both children and adults. The European Environmental Agency estimated that in 2018 there were 417 000 premature deaths attributable to particulate matter with diameter <2.5 µm (PM<sub>2.5</sub>), 55 000 to NO<sub>2</sub>, and 20 600 to O<sub>3</sub> in Europe (table 10.1 in EEA Report 9/2020 [2]). In addition, 4 805 800 years of life lost could be attributed to PM<sub>2.5</sub>, 623 600 to NO<sub>2</sub>, and 246 700 to O<sub>3</sub> (table 10.2 in [2]). This “silent killer” is one the most important determinants of health, surpassed only by high blood pressure, tobacco use and poor diet. The coronavirus disease 2019 (COVID-19) pandemic has raised concerns about whether air pollution can increase the severity of disease and risk of death after infection, as well as facilitate the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Chronic lung disease patients are in the epicentre of the current crisis, as they are more vulnerable to both the adverse effects of a SARS-CoV-2 infection and air pollution exposure, as well as their possible interactions. At the same time, the lockdown measures to control the spread of COVID-19 brought historical short-term reductions in air pollution levels around the globe, and increasing general public interest and demand for clean air policies [3]. The COVID-19 pandemic, an emerging infectious disease probably caused by a spill over from animals, and its possible interactions with air pollution, is an existential reminder that we are a part of a larger ecosystem, and that human health is closely connected with the health of our environment and

planet. Here we provide a short summary on the potential role of air pollution in the spread and worsening of health impacts of COVID-19, and on the influence of the pandemic on air pollution levels in Europe. Moreover, we outline the major lessons learned to chart a healthy post-pandemic course. This work summarises the key messages from a workshop that took place on 2 December, 2020, organised by the European Respiratory Society (ERS), the International Society for Environmental Epidemiology (ISEE) and the Health Effects Institute (HEI), endorsed by the World Health Organization (WHO), and hosted by the European Parliament Lung Health Group and the European Commission (table 1).