

Air Pollution and Epidemics: Two New Studies Investigate the Link Between Air Quality and COVID-19.

Air pollution is a threat to human health, as it also worsens the effects of epidemics and increases its social and health costs.

(Brussels, Belgium - Thursday 10 February 2022)

Today, the European Public Health Alliance (EPHA) organised an online event on “*Air Pollution and Health: Improving Air Quality and Tackling Epidemics*” where two new studies on air pollution and epidemics were presented for the first time to the public. The main conclusion is that improving air quality would decrease the health costs of epidemics, and thus its health cost in general.

The Institute of Epidemiology - Helmholtz Munich (Germany), under the supervision of Prof. Dr. Annette Peters, conducted a systematic review on the Impact of ambient air pollutants on viral Infections of the respiratory tract. [1] The study found associations between higher levels of ambient air pollution and virus infections, specifically from fine particulate matter ($PM_{2.5}$) and nitrogen dioxide (NO_2), two pollutants that mainly originate from fossil fuel combustion. Air pollution might make humans more vulnerable to viruses causing respiratory infections, specifically influenza virus and potentially other viruses such as SARS CoV-1, SARS CoV-2, MERS-CoV.

Prof. Dr. Annette Peters said: “*Lowering current EU standards for $PM_{2.5}$ and NO_2 will reduce the adverse effects of ambient air pollution on chronic as well as infectious diseases*”.

CE Delft, a research and environmental consultancy based in Delft (The Netherlands) published a study on *Air Pollution and COVID-19: Social Cost Estimate of Air Pollution Related COVID-19 Control Measures*. [2] CE Delft researchers developed a model using data from The Netherlands to calculate the social costs of COVID-19 control measures (lockdowns, school closures, mask mandates etc.) that were necessitated by air pollution. This model design allowed isolating the impact of air pollution on virus spread, thereby calculating avoidable effects if air pollution was reduced.

Daan Juijn, researcher at CE Delft in charge of this study said: *“A growing body of evidence suggests that air pollution exacerbates the spread of COVID-19. Our results indicate that if air pollution would be lower, fewer COVID-19 control measures would have been necessary. The social costs of the additional COVID-19 control measures that were required due to air pollution could equal up to € 11 billion. This translates to around 1.5% of Dutch GDP.”*

In practical terms, every 1 µg/m³ reduction in ambient fine particulate matter (PM_{2.5}) could have enabled easing of COVID-19 control measures, thereby preventing up to €1.27 billion in damage costs, whilst still maintaining control of the virus.

Matteo Barisione, Junior Policy Manager for Global Public Health at EPHA, said: *“These two studies introduce new evidence on human health risks from air pollution. EPHA and Medics for Clean Air [3] demand decision-makers to take note of the latest scientific evidence on the health damage of air pollution. With the ongoing revision of the Ambient Air Quality Directives, we support the full alignment of the EU’s legally binding air pollutants limits with the WHO Global Air Quality Guidelines”.* [4]

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[1] The report is available here: <https://www.helmholtz-munich.de/epi/research/research-groups/environmental-risks/projects/impact-of-environmental-factors-on-virusesvirus-infections-a-systematic-review/index.html>

[2] The report is available here: <https://cedelft.eu/publications/air-pollution-and-covid-19/>

[3] *Medics for Clean Air* is a European coalition of doctors, nurses, researchers, medical students, and other health professionals who have signed a Manifesto for urgent and sustainable actions to tackle air pollution and to protect their patients and our environment. <https://medics4cleanair.eu/>

[4] World Health Organization - WHO global air quality guidelines, released in September 2021: <https://apps.who.int/iris/handle/10665/345329>