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## *Thematic Dialogue Series on Non-communicable Diseases and Mental Health: Environmental Risk factors for NCDs and Mental Health*

**Date:** 30 April 2025

**Time:** 1:15 – 2:45 PM

**Venue:** Ford Foundation

**Co-sponsors:** Antigua and Barbuda, Belgium, Brazil, Ghana, Georgia, Japan, and Thailand in their capacity as co-chairs of the Group of Friends of UHC, along with the World Health Organization (WHO), and the UN Foundation

### **SUMMARY**

In preparation for the Fourth High-Level Meeting of the UN General Assembly on NCDs and mental health in September 2025, Antigua and Barbuda, Belgium, Ghana, Georgia, Japan, and Thailand along with the World Health Organization (WHO), and the UN Foundation are co-hosting a series of interactive dialogues. This dialogue will focus on the impact of environmental risk factors on NCDs and mental health and explore mitigation strategies.

Held under the Chatham House rule, the dialogue offers a platform for Member States and global health partners to discuss the impact of environmental risk factors, including air pollution, climate change, extreme heat, water, sanitation and hygiene, food security, and nutrition, on NCD and mental health outcomes. Speakers will discuss the complex interplay between health and key environmental challenges and consider policy solutions to be pursued through the 2025 high-level meeting process.

### **BACKGROUND**

Environmental risk factors, including physical, chemical, biological, and work-related factors that affect health, cause about 23% of global deaths – with two-thirds linked to NCDs. Key factors include air pollution, radiation, noise, land use patterns, work environment, climate change and

extreme heat. Early exposure to these risks can increase NCD and mental health risk throughout the life course.<sup>1</sup>

### ***Air pollution***

Air pollution is the leading environmental risk factor related to NCDs, and a leading health risk overall after high blood pressure. Currently, 99% of the global population in human settlements breathes polluted air as defined by the WHO Global Air Quality Guidelines, leading to roughly 7 million deaths each year and impacting billions more<sup>2</sup>. Alarming, 85% of these deaths are linked to NCDs such as ischemic heart disease, stroke, chronic obstructive pulmonary disease, and lung cancer.<sup>3</sup> Poor air quality also increases the risk of asthma, diabetes, low birth weight, stillbirth, and miscarriage.<sup>2</sup> Research has also shown strong associations between air pollution exposure and adverse mental and neurological conditions across diverse populations.<sup>2</sup> For example, there is an increased risk of depression associated with long-term exposure to PM2.5 (inhalable particulate matter).<sup>4</sup> Furthermore, several social and environmental risk factors for mental health and psychosocial problems are exacerbated by climate change, which can lead to emotional distress, the development of new mental health conditions and a worsening situation for people already living with these conditions. Globally, the *additional* societal costs of mental disorders due to changes in climate-related hazards, air pollution and inadequate access to green space are estimated to be almost US\$47 billion annually in 2030, and projected to grow exponentially to US\$537 billion in 2050.

### ***Climate change***

Vulnerability to impacts of climate change, such as exposure to extreme heat, malnutrition and food and water insecurity, increases peoples' risk of NCDs and mental health conditions. Approximately 489,000 heat-related deaths occurred each year between 2000–2019, and in 2021, the higher frequency of heatwave days and drought months was associated with 127 million more people experiencing moderate or severe food insecurity.<sup>5</sup> Along with increased risk of NCD morbidity and mortality, natural disasters, such as floods, droughts, and wildfires, also impede access to essential health services for NCDs prevention and management.<sup>6</sup> Effects of climate change further exacerbate the social and environmental risk factors for brain and mental health

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<sup>1</sup> Preventing noncommunicable diseases (NCDs) by reducing environmental risk factors. Geneva: World Health Organization; 2017 (<https://www.who.int/publications/i/item/WHO-FWC-EPE-17.01>)

<sup>2</sup> WHO webpage on health consequences of air pollution, consulted on 10 April 2025 (<https://www.who.int/news/item/25-06-2024-what-are-health-consequences-of-air-pollution-on-populations>)

<sup>3</sup> WHO World Health Statistics 2023 (<https://www.who.int/data/gho/publications/world-health-statistics>)

<sup>4</sup> Borroni E, Pesatori AC, Bollati V, Buoli M, Carugno M. Air pollution exposure and depression: a comprehensive updated systematic review and meta-analysis. *Environmental Pollution*, 2022; 292: 118245.

<sup>5</sup> [https://www.un.org/sites/un2.un.org/files/unsg\\_call\\_to\\_action\\_on\\_extreme\\_heat\\_for\\_release.pdf](https://www.un.org/sites/un2.un.org/files/unsg_call_to_action_on_extreme_heat_for_release.pdf)

<sup>6</sup> <https://www.who.int/news/item/02-11-2023-climate-change-and-noncommunicable-diseases-connections>

issues, which can lead to emotional distress, the development of new mental health conditions and a worsening situation for people already living with these conditions<sup>7</sup>.

### ***Economic costs***

Economic costs accompany the immense toll on human health and productivity. The global health costs associated with air pollution are estimated at \$8.1 trillion, equivalent to 6.1% of the world's GDP.<sup>8</sup> Costs are also rising as a result of rising temperatures, with expectations that extreme heat will erase US\$2.4 trillion annually from the global economy by 2030, cutting 2.2 per cent of total working hours worldwide – equivalent to 80 million full-time jobs.<sup>9</sup> In 2022, heat exposure-related loss in labour capacity resulted in average potential income losses equivalent to US\$863 billion. Globally, the *additional* societal costs of mental disorders due to changes in climate-related hazards, air pollution and inadequate access to green space are estimated to be almost US\$47 billion annually by 2030, and are projected to grow exponentially to US\$537 billion by 2050.<sup>10</sup>

Climate-informed health policies and programs can reverse these trends and avert severe health and economic consequences from environmental risk factors. Air pollution is preventable, and there is strong evidence to support cost-efficient policies in the energy, transport, waste, agriculture, and industry sectors. Moreover, implementing occupational, safety and health (OSH) measures to prevent occupational injuries related to excessive heat could save over US\$361 billion globally.<sup>11</sup>

Despite increasing awareness of the health impacts of air pollution and climate change, stronger policies and investments are needed to mitigate their effects on the incidence and mortality rate of NCDs and mental health conditions, as well as on the lives of billions of people living with these conditions.

The 3rd High-Level Meeting on NCDs in 2018 provided a step forward for this policy agenda through acknowledgement of air pollution as a significant risk factor for NCDs. In 2019, WHO Member States requested WHO to prepare policy options and interventions to reduce premature deaths from NCDs due to air pollution. And in March of this year, countries reaffirmed their commitment to supporting WHO's target of reducing the health impacts of air pollution by 50%

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<sup>7</sup> WHO (2022). Mental health and Climate Change: Policy Brief. Available at: <https://www.who.int/publications/i/item/9789240045125>

<sup>8</sup> Awe YA, Larsen BK, Sanchez-Triana E. The Global Health Cost of PM 2.5 Air Pollution: A Case for Action Beyond 2021. Washington, D.C.: World Bank Group; 2021 (<http://documents.worldbank.org/curated/en/455211643691938459/The-Global-Health-Cost-of-PM-2-5-Air-Pollution-A-Case-for-Action-Beyond-2021>)

<sup>9</sup> [https://www.un.org/sites/un2.un.org/files/unsg\\_call\\_to\\_action\\_on\\_extreme\\_heat\\_for\\_release.pdf](https://www.un.org/sites/un2.un.org/files/unsg_call_to_action_on_extreme_heat_for_release.pdf)

<sup>10</sup> Kumar P, Brander L, Kumar M, Cuijpers P. Planetary Health and Mental Health Nexus: Benefit of Environmental Management. *Annals of Global Health*, 2023; 89 (1): 49. doi: 10.5334/aogh.4079.

<sup>11</sup> [https://www.un.org/sites/un2.un.org/files/unsg\\_call\\_to\\_action\\_on\\_extreme\\_heat\\_for\\_release.pdf](https://www.un.org/sites/un2.un.org/files/unsg_call_to_action_on_extreme_heat_for_release.pdf)

by 2040. The upcoming high-level meeting is now an opportunity to integrate air pollution and other environmental risk factors into policies to prevent NCDs and protect mental health.

## OBJECTIVES

This dialogue aims to:

- Present environmental risk factors for NCDs, focusing on air pollution and extreme heat, and their connections to NCDs, brain health, and mental health.
- Discuss how the burden of NCDs, brain health and mental health conditions can be reduced through action to combat polluted air, and how air pollution interventions can be fully integrated into NCD, mental health and brain health policies and programmes.
- Examine the impact on NCDs mortality and morbidity of the target of a 50% reduction in health impacts of air pollution by 2040, as outlined in the updated *WHO Roadmap for an effective global response to the adverse health effects of air pollution* and align this target with commitments in the Political Declaration.
- Consider how climate change and extreme heat exacerbate incidence of NCDs and mental health conditions by worsening risk factors like malnutrition, unhealthy diets and food/water insecurity.

## AGENDA

### Welcome (5 min)

- UN Foundation

### Opening Remarks (10 min)

- Belgium
- Colombia/ Thailand

### Background and Current Context (10 min)

- Maria Neira, Director, Environment, Climate Change and Health Department, WHO

### Scene Setting Remarks (20 min)

- Burcin Ikiz, Leads the Neuro Climate Working Group at Columbia University, USA
- Pallavi Pant, Head of Global Initiatives, Health Effects Institute, WHO GAPH-TAG member
- Nina Renshaw, Head of Health, Clean Air Fund
- Manisha Bhinge, Vice President, Health Initiative, The Rockefeller Foundation

### Moderated Discussion (40 min)

*Lead discussants:*

- Ligia Noronha, head of the UNEP NY office
- José Luis Castro, WHO Special Envoy on Chronic Respiratory Diseases
- Omnia El Omrani, Vice Chair, Global Climate and Health Alliance, and Former Youth Envoy to the Egyptian Minister of Foreign Affairs and President of the 27th UN Climate Conference (COP27)

### Closing Reflections (5 min)






- Werner Obermeyer, WHO Office at the UN

### **GUIDING QUESTIONS**

- How can exposure to air pollution be reduced to prevent new NCD cases, and protect people living with NCDs, since they have higher risk of serious illness and death?
- How does air pollution affect mental and brain health, including neurological conditions, and what are the challenges and solutions?
- Exposure to air pollution at an early age may lead to NCDs and brain health conditions with impacts throughout the life course, how can the cost saving from primary prevention of air pollution-related NCDs be leveraged for policy and intervention support?
- How can air pollution be fully integrated into prevention and management policies for NCDs and mental health, and what should be the timeline for implementation?
- How can the target of a 50% reduction in health impacts of air pollution by 2040, contained in the updated “*WHO Road map for an effective global response to the adverse health effects of air pollution*” be aligned with the global NCD target within SDG target 3.4?
- What multisectoral solutions have been shown to effectively address vulnerability to extreme heat? How can these solutions be scaled to manage the threat of heatwaves as they become more common?

## Thematic Discussions in Preparation for the 2025 High-Level Meeting on NCDs and Mental Health

These discussions are intended to provide an informal and forward-looking opportunity for

	December 10, 2024   alongside UHC DAY <i>Investing in NCDs and Mental Health to Achieve UHC</i>
	January 21, 2025 <i>Prevention, Treatment, and Rehabilitation of NCDs and Promotion of Mental Health</i>
	February 19, 2025 <i>Co-morbidities &amp; the Primary Health Care Approach</i>
	March 25, 2025 <i>Social, Economic, and Commercial Determinants &amp; Fiscal Measures</i>
	April 30, 2025 <i>Environmental Risk Factors for NCDs and Mental Health</i>

Member States to engage diverse voices and stimulate thinking about persistent challenges in the NCD agenda. Hosted by the United Nations Foundation, each session in the series will convene a mixture of external experts, key stakeholders, and Member States in the trusted spirit of the Chatham House rule. Participants will explore opportunities for multilateral cooperation to strengthen NCD prevention and management efforts, identify gaps to address through the high-level meeting and sustain and elevate high-level political support for progress on this important set of health issues.