Call for Symposium Proposals

Theme:

Environmental lung health threats: Microplastics, air pollution, and emerging inhaled risks

The Union World Conference on Lung Health 2026 invites symposium proposals focused on microplastics and other inhaled environmental exposures affecting lung health, framed within a planetary health perspective. As evidence grows that inhaled microplastics, particulate air pollution, and complex airborne mixtures deposit in the human airway and alveolar regions, this symposium theme seeks to advance dialogue, research, and policy on emerging and interconnected respiratory hazards.

Background

Microplastics – plastic particles <5 mm, including microfibres and nanoplastics – have now been detected in ambient air, household dust, occupational settings, and directly within human lung tissue and bronchoalveolar samples. The respiratory tract is increasingly recognised as a major exposure route, particularly in urban environments and indoor spaces dominated by synthetic materials and consumer plastics.

However, microplastics represent only one component of a broader airborne exposome that includes fine and ultrafine particulate matter ($PM_{2.5}$ and $PM_{0.1}$), combustion-derived particles, chemical pollutants, bioaerosols, and climate-driven atmospheric changes. These inhaled exposures often coexist, interact biologically, and disproportionately affect people and communities facing higher exposure and health risk.

Emerging experimental, toxicological, and occupational evidence links inhaled microplastics and other particulate pollutants with airway inflammation, oxidative stress, epithelial injury, impaired lung repair, immune dysregulation, and potential fibrotic and carcinogenic pathways. While epidemiological research on microplastics is still developing, robust evidence already links air pollution to asthma, COPD, interstitial lung disease, lung cancer, and infection susceptibility. Understanding how microplastics interact with established air pollutants is therefore essential for a comprehensive lung health agenda.

Low- and middle-income countries – where rapid urbanisation, climate change, weak waste management, and high ambient air pollution converge – may face a disproportionate and under-recognised burden. Within the framework of planetary health, inhaled environmental exposures represent a shared threat to human and ecosystem health that demands integrated solutions.

Why environmental lung health threats at the Union Conference 2026?

Positioning microplastics within a broader planetary health and air pollution framework aligns with The Union's commitment to addressing upstream determinants of lung disease. This symposium will:

- Situate microplastics alongside air pollution and climate-related inhalation risks.
- Foster dialogue between respiratory medicine, environmental health, planetary health, toxicology, and occupational science.
- Encourage integrated research approaches addressing mixtures of inhaled exposures rather than single agents.
- Support translation of science into policy, regulation, and prevention strategies, particularly in low- and middle-income countries.
- Strengthen global capacity to monitor, mitigate, and respond to emerging airborne threats.

Symposium focus areas

We welcome proposals addressing (but not limited to):

- Sources, pathways, and global burden of airborne microplastics, particulate air pollution, and other inhaled contaminants.
- Detection and biomonitoring: advances in measuring microplastics, PM, and complex airborne mixtures in air, lung tissue, BALF, sputum, and exhaled samples.
- Mechanistic insights: shared and divergent pathways of toxicity, including inflammation, oxidative stress, epithelial injury, immune activation, and carcinogenesis.
- Clinical and epidemiological perspectives: links to asthma, COPD, ILD, lung cancer, infection susceptibility, and post-TB lung disease.

- Occupational and indoor exposures: textiles, waste recycling, construction materials, traffic-related pollution, biomass fuels, and indoor microenvironments.
- Policy and mitigation: integrating microplastics into air-quality regulation, planetary health strategies, climate action, and environmental justice frameworks.
- Voices of affected populations: workers, communities in polluted environments, and those with chronic respiratory disease.

Proposal guidelines

Each symposium should be 90 minutes, with 3–4 presentations (15 minutes each) and structured discussion time.

Proposals must clearly state:

- Symposium title.
- Rationale and objectives.
- Suggested speakers and affiliations. Diversity across geography, gender, career stage, and discipline is strongly encouraged.
- Expected outcomes and contributions to advancing knowledge on inhaled environmental exposures and lung health.

Proposals involving early-career investigators, LMIC-based researchers, survivor/community advocates, or interdisciplinary teams are especially welcome.

Expected outcomes

Through this symposium theme, the Union Conference 2026 aims to:

- Position microplastics within the broader planetary health and air pollution agenda.
- Advance interdisciplinary research on combined inhalation exposures and respiratory disease.
- Highlight actionable strategies for exposure reduction, prevention, and clinical preparedness.
- Inspire new research consortia, funding initiatives, and policy actions addressing environmental determinants of lung health.

- Strengthen global advocacy for cleaner air, environmental sustainability, and health equity.