

Climate change and health: A joint statement by medical, public health, scientific societies and patient representative organisations and experts ahead of COP28

Call for action from the healthcare sector

The climate crisis is a health crisis. The past two COP26 and COP27 conferences are a demonstration of the growing awareness and the high level of engagement of the health community in the climate change fight. In preparation of COP28, we, the undersigned societies of healthcare experts and patient organisations, urge the governments of the attending countries to put health and policies for climate change mitigation and adaptation at the forefront of the negotiations. The health community can help to identify the most vulnerable groups and design and articulate targeted interventions for adaptation. Moreover, we call on healthcare authorities, public health institutions, health professionals, medical education systems and scientific societies to become active partners in policymaking on climate change mitigation and adaptation efforts. The extreme weather events around the globe have shown that we need to prepare our societies and communities for a much more complex future adapting to the ever-increasing impact of climate-related effects on health.

Climate change – a global threat requiring comprehensive action

These extreme weather events, which have been a rare occurrence in the past, are now increasingly impacting the planet as climate change is picking up speed. Heat waves, droughts, extreme wildfires, wind and dust storms, massive precipitation, and severe floods are all becoming more frequent, more intense, and affect areas which are not adapted to these changes. The World Health Organization (WHO) has warned that climate change is the biggest global threat to humanity in the 21st century [1, 2]. By 2050, climate change is expected to cause at least 250,000 deaths every year globally due to climate-related heat stress, malnutrition, and vector- and water-borne diseases [3]. An additional health burden will arise from more indirect climate-related paths, including migration, violent conflicts, poverty, and disruption of healthcare and ecosystems. The catastrophic impacts of global warming are already evident with increases in the frequency and severity of extreme weather events resulting in devastating consequences for human health worldwide [4, 5]. It is crucial to recognise that climate change disproportionately affects vulnerable and marginalised communities, exacerbating existing health disparities. Addressing the health effects of climate change requires a comprehensive approach that includes reducing greenhouse gas emissions, adapting to the changes that are already underway, community-engaged, solutions-oriented research, strengthening healthcare systems, and informing and involving citizens to better respond to emerging health threats. Public health initiatives, education, and international cooperation are essential components of mitigating the health impacts of climate change and protecting the well-being of future generations.

Climate change – direct and indirect health impacts

Climate change affects human health in a variety of ways, including direct impacts derived from extreme weather events and indirect impacts through changes in aeroallergen exposure

patterns, air quality, wildfires, and transmissibility of vector- and water-borne diseases [6,7]. Climate change can also affect health via socioeconomic disruption by altering crop production, damage to infrastructure, disturbing water, energy and food supplies, and leading to violent conflicts and forced migration [8]. Direct **heat-related illnesses** include heat exhaustion from dehydration and electrolyte imbalances, heatstroke, and increased mortality and morbidity due to cardiovascular, renal, and respiratory disease. Vulnerable populations, such as the elderly, children, individuals with pre-existing medical conditions such as respiratory, cardiovascular or metabolic disease, and outdoor workers suffer from impaired compensatory mechanisms or increased exposure, putting them at a higher risk of heat-related illnesses. Increased UV radiation increases cancer risk. Climate change can worsen **air quality** by increasing the frequency and intensity of wildfires, releasing particulate and gaseous pollutants that can be transported across long distances, and by increasing resuspension of particles during droughts and sand and dust storms. Ozone concentrations increase due to more intense UV radiation [9]. Short-term and long-term increases in air pollution can exacerbate respiratory conditions like asthma or COPD, increase the risk of cancer, heart attacks, strokes and other cardiovascular diseases, and increase mortality. Furthermore, recent studies have shown that the harmful effects of high temperatures increase when air pollution is higher [10]. Increased levels of **airborne allergens** (such as pollen and mould spores) from longer aeroallergen seasons, changing spatial patterns, and dampness can induce and worsen respiratory conditions like allergies and asthma [9]. Climate change is also altering the geographical distribution and behaviour of **disease-carrying vectors** like mosquitoes and ticks. This shift has enabled the spread of diseases such as malaria, dengue fever, Zika virus, and Lyme disease into more northerly regions, putting previously unaffected populations at risk. Increased flooding can further contribute to increased spread of infectious diseases through contamination of water sources that leads to outbreaks of **waterborne diseases** such as cholera and dysentery. Flooding can disrupt sanitation systems, increasing the risk of exposure to toxins and other pathogens. Further downstream effects of climate change are **food insecurity and malnutrition** through crop failures, reduced food production, and rising food prices. Climate change-related **disasters and extreme weather events**, including hurricanes, floods, and wildfires, can result in injuries, fatalities, loss of homes, and displacement. The physical trauma and emotional stress associated with these events and climate change as a whole can have long-term physical and mental health consequences including anxiety, depression, and post-traumatic stress disorder (PTSD). Climate-induced displacement can lead to overcrowded refugee camps, inadequate access to clean water and sanitation, and violence.

Climate mitigation and adaptation as number one public health opportunity

The 2022 Lancet Countdown Report states that mitigation (the reduction of greenhouse gas emissions) and adaptation (providing measures to minimize health effects) to climate change is the biggest public health policy opportunity of the century, if health, well-being and equity are at the heart of climate mitigation and adaptation plans [5]. Research on the effects of climate change on health provides scientifically grounded evidence on mechanisms, vulnerabilities and actions to protect populations from climate-related hazards. This evidence

should be used for mitigation of and adaptation to climate change to reduce health effects. It can be used to develop public health policies, and drive the motivation for action among citizens, healthcare professionals, researchers, and political entities. While high-income countries are responsible for the overwhelming majority of greenhouse gas emissions responsible for climate change, the burden of climate change will disproportionately fall on lower-income communities and those living in low- and middle-income countries. Therefore, a focus on adaptation solutions for these communities is critical. Finally, research demonstrates the potential for synergies between climate-related actions and policies that address environmental pollution, urban development, energy security and biodiversity. Thus, mitigation strategies will not only reduce the health harms from climate change but also translate into immediate health co-benefits.


Conclusion

In summary, the climate crisis is a critical risk to health, and we urge decision makers at COP28 to prioritise action to mitigate but also adapt to the health effects of climate change. It is imperative that our leaders start acting immediately and do everything to avoid future climate-related deaths, and illnesses. The health community stands ready to support you in these necessary actions.

Disclaimer







Please note that this statement is regularly being updated with additional endorsements and signatures.

Endorsements

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	<p>European Cancer Organisation</p>

	<p>European Society of Cardiology</p>
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	<p>Associazione Apnoici Italiani-APS</p>
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<p>AIB Associazione Italiana Bronchiectasie APS Ente del Terzo Settore</p>	<p>Associazione Italiana Bronchiectasie APS</p>
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