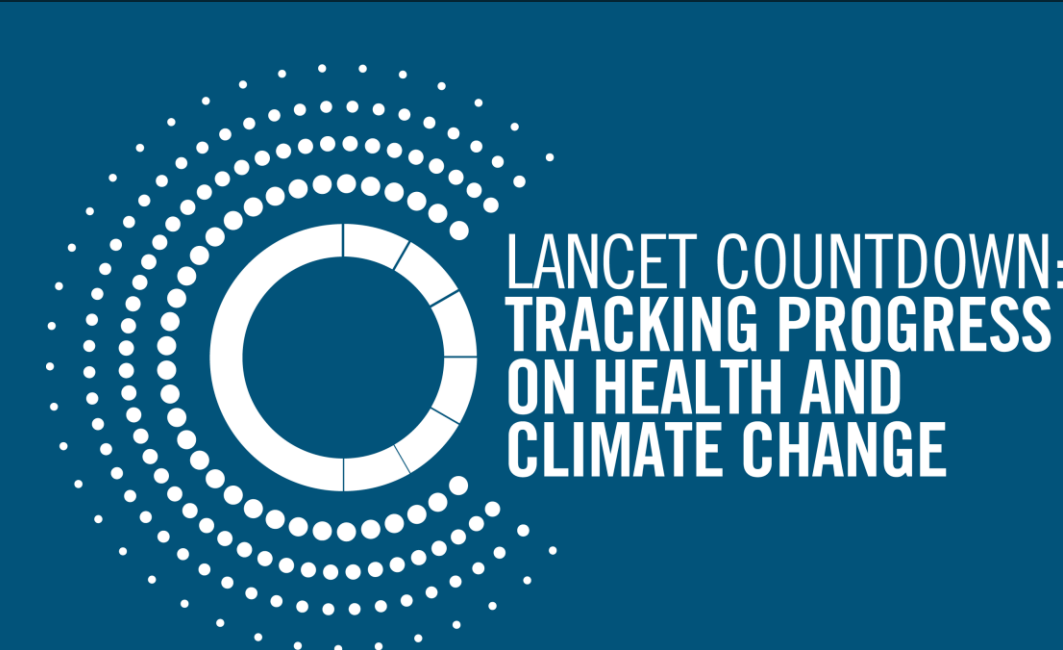


Climate change and human health: Impacts under various scenarios & synergies for action

Maria Walawender – Research Fellow, Lancet Countdown on Health and Climate Change



Climate change as a health issue


Human-caused climate change is having profound impacts on human health. Globally, people are experiencing more frequent heatwaves and extreme weather events, changing patterns of infectious disease transmission, the deterioration of food and water resources, impacts on socioeconomic conditions, and the exacerbation of existing health challenges.¹ Rapid adaptation progress is urgently needed, while simultaneous greenhouse gas emission reduction is essential to ensure the limits of adaptation are not breached. Encouragingly, many of the interventions required to mitigate and adapt bring enormous benefits for human health and wellbeing in the form of cleaner air, healthier diets, more liveable cities, and more resilient health care facilities.

The Lancet Countdown on Health and Climate Change


The Lancet Countdown: Tracking Progress on Health and Climate Change exists to monitor the links between public health and climate change, and the transition from health threat to opportunity. Receiving core funding from Wellcome, we are a global collaboration of almost 300 leading experts from academic institutions and UN agencies across the globe, bringing together climate scientists, engineers, energy specialists, economists, political scientists, public health professionals, and doctors. Each year our findings are published in the medical journal *The Lancet* ahead of the UN climate change negotiations. Our data make clear how climate change is affecting our health, the consequences of delayed action, and the health benefits of a robust response.

The record-breaking human costs of climate change


Of the Lancet Countdown’s 15 indicators monitoring climate change related health threats, 10 reached concerning new records in the latest year of data.¹




In 2023, infants (<1 year) and people over age 65 experienced an average of 13.8 days of heatwave per person.




In 2023, extreme heat events cumulatively worsened human sentiment by 53% more than the 2006-2022 annual average.



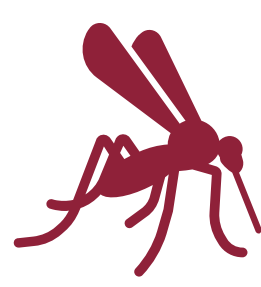
In 2023, people were exposed to 27.7% more hours per year during which heat posed at least a moderate risk of heat stress during light outdoor exercise, compared with the 1990-1999 annual average.




In 2023, population-weighted mean wildfire risk was 14.7% higher than the 2003-2007 annual average.



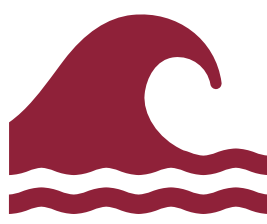
In 2023, 512 billion potential work hours were lost, 49% above the 1990-1999 annual average.



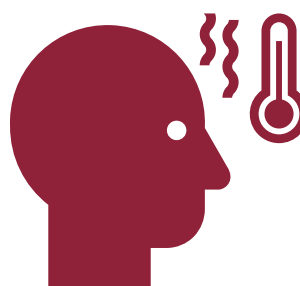
In 2023, the climatic suitability for the transmission of dengue by *Aedes aegypti* mosquitoes was 12.8% higher than the 1951-1960 annual average.




In 2023, sleep hours lost due to high temperatures increased by 6% compared to the 1986-2005 annual average.



In 2023, 88,300 km of coastline had waters suitable for *Vibrio* transmission.



In 2023, heat-related mortality in people over age 65 was 167% higher than the 1990-1999 annual average.



In 2022, heatwaves and droughts were associated with 151 million more people experiencing moderate or severe food insecurity, compared to the 1981-2010 annual average.

A glimpse at a future of increased harms

While the world is already facing record-breaking threats to human health, projections provide a glimpse into a future of even greater harms. Though a certain level of heating and related harms are now locked in, actions today have a substantial impact on the level of threat to health in the future.

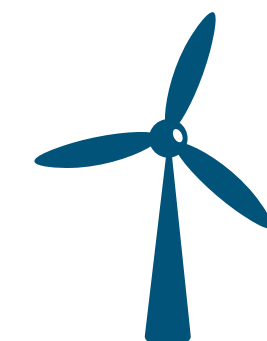
Risk at mid-century (2040-2060) ^{2,3}	Less than 2°C heating by 2100 (SSP1 – RCP2.6)	2.8 to 4.6°C heating by 2100 (SSP3 – RCP7.0)
Exposure to heatwaves in those over age 65	11.2 times as many person-days	16.7 times as many person-days
Heat-related deaths in those over age 65	370% increase	433% increase
Suitability for dengue transmission (<i>Ae. albopictus</i>)	16% increase	22% increase
People experiencing food insecurity linked to heatwaves	525 million additional people	1.1 trillion additional people

This table shows a selection of the projected harms to health in the future. Risks to health at mid-century (2040-2060) are presented under two scenarios: if heating is limited to 2°C by 2100 (SSP1 – RCP2.6) and if heating reaches 2.8°C to 4.6°C (and SSP – RCP7.0). Both assume no further adaptation. For each health risk, higher global mean temperature rise is associated with greater threats to health. The values are taken from the 2023 Lancet Countdown global report and the CVM3.^{2,3}

Limiting heating is crucial to protect health and save lives. Every fraction of a degree matters for a liveable future.


The opportunity to deliver a healthy future for all

A healthy future depends on limiting heating through urgent and ambitious mitigation action and adapting to growing hazards and risks. This poses opportunities to reap multiple and diverse benefits, including saving lives through cleaner air, healthier diets, and more resilient health systems.




6.4 million

In 2021, there were 6.4 million premature deaths attributable to anthropogenic PM_{2.5}.¹ Of these, 2.09 million were attributable to fossil fuel combustion.¹



1.5 million

Red meat and dairy accounted for 56% of agricultural emissions in 2021.¹ High consumption of these products led to 1.5 million deaths in the same year.¹




15%

In 2021, 81% (157/194) of World Meteorological Organization members provided climate services for health.^{1,4} However, only 15% (12/80) reported having health early warning systems for climate impacts on health care facilities.^{1,4}

Reference list

To see the reference list for this poster and dig into the methods used, scan this QR code.



Want to learn more?

Visit our website via the QR code or contact Maria Walawender at m.walawender@ucl.ac.uk.

