

Climate Change and Health

“Climate change is the greatest public health challenge of the 21st century.”

*The Lancet*¹

Introduction

The overwhelming scientific consensus is that the 1.5°F warming is due to human activity, and that the continued climate change will have a wide range of effects on the planet, including human populations. Of the many impacts of climate change that are identified, health impacts are considered by many to be among the most important, and are overwhelmingly adverse². Although the public generally accepts the reality of these impending impacts, conversations about climate change are limited in scope. While impacts are personal for many people, the diffuse and long-term nature of these impacts makes it hard for people to link their feelings and actions to changes we know are happening. Naming and responding to these impacts presents an opportunity for a public health response.

What are the major anticipated health impacts of climate change?

The IPCC report divides health-related impacts of climate change into three categories: 1) direct impacts (such as injury or illness from extreme weather events), 2) indirect impacts through environmental systems (such as air pollution or infectious disease changes), and 3) indirect effects through socially mediated systems (such as increased population displacement and violent conflicts).

The [Lancet Countdown on Climate and Health](#) is tracking a myriad range of health indicators with existing or potential linkages to climate change. This program and others identify several main areas of impact:

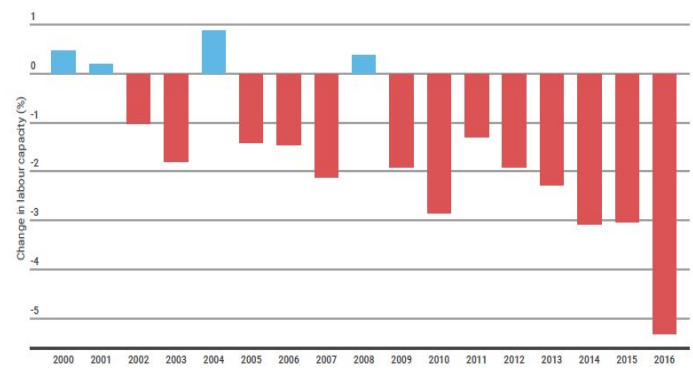
- Extreme Heat
- Natural Disasters
- Allergens and Air Quality
- Infectious Disease
- Food safety and nutrition
- Mental Health

What are *current* examples of health impacts of climate change?

Climate change has already been linked to a number of health impacts. Some of these examples include:

- Global labor capacity has decreased an estimated 5% since 2000 due to the inability to work when it's too hot.

Yearly change in labor capacity



(Graph source: *the Lancet Countdown 2017*)³

- An [allergy season which is longer, and which has greater overlap with different allergies](#).

¹ Costello, A, et al. 2009. *Lancet*.373: 1693–1733

² <https://www.nejm.org/doi/full/10.1056/NEJMra1109341>

³ <https://www.thelancet.com/infographics/climate-and-health>

- The [spread of ticks and their associated diseases is linked to climate factors](#).⁴
- Food-borne illnesses such as *Salmonella* and *Campylobacter* are more common when temperatures are warmer.⁵
- A recent study found a decrease in nutritional value of rice at higher carbon dioxide levels.⁶
- Clinical psychology is observing that climate-related events like increased wildfires are manifesting as [emotional distress at local environmental changes](#).

Who will be impacted most by climate change?

Not everyone is affected equally by climate change. Consistent with the other impacts of climate change, marginalized and lower-income populations tend to be affected most. Susceptible individuals of special concern are women, children, elderly, the infirmed, and the poor. Progress in health of these populations worldwide is threatened by climate change.

What are health benefits of climate mitigation?

There is much discussion about the co-benefits of mitigation efforts. For instance, the provision of more reliable renewable power options would benefit the health of the poorest by providing power to health facilities, [many of which have “no reliable electricity provision” in places like sub-Saharan Africa](#).⁷ In addition, many options for responding to climate change are “no-regrets” options - these actions have benefits that outweigh the costs regardless of whether they successfully mitigate climate change.

How is the healthcare profession responding?

Surveys from three separate medical associations show [strong agreement that physicians are seeing impacts of climate change on patients’ health](#), and

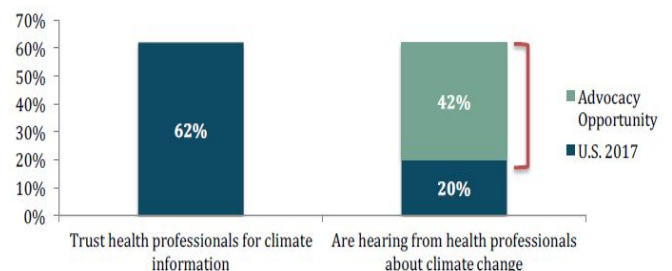
that they should play a role in educating patients and the public.

Physician survey responses on health and climate

Climate change and health	NMA response	ATS response	AAAI response
Climate change is happening	97%	89%	80%
Climate change is affecting my patients	79%	73%	74%
My patients are affected by climate change through:			
Severe weather-related injuries	88%	57%	49%
Increase in air pollution related disease	88%	77%	73%
Increase in allergy symptoms	80%	58%	63%
Heat related illness	75%	48%	34%
Vector-borne illness	58%	40%	36%
Food and waterborne illness	56%	26%	23%

Table source: Public Health Institute/Center for Climate Change and Health

A [recent survey](#) found that health professionals are the second most trusted sources for climate change information after scientists, and that 67% of Americans correlate climate action with health benefits. **Only 20% are hearing about climate change from their healthcare provider, indicating there is a large opportunity for health professionals to have an impact on the public climate conversation.**



Graph source: ecoAmerica⁸

Resources for further study:

- Two major health journals have good reviews of health linkages to climate change: The [New England Journal of Medicine](#), and [The Lancet](#).
- The World Health Organization has a good [set of resources](#) on global impacts of climate change for health.
- The WHO has a [technical briefing](#) which gives a good overview of climate and health issues.
- The Center for Climate Change & Health has an excellent [“Physician’s Guide to Climate Change, Health and Equity”](#)

⁴ Ebi, K.L., et al. 2017. Environmental Health Perspectives 125(8):085004

⁵ Lake, I.R., 2009: Epidemiology and Infection, 137(11), 1538

⁶ Zhu et al. 2018. Science Advances, 4(5). eaaq1012, doi:10.1126/sciadv.aaq1012

⁷ Adair-Rohani et al, 2013. Global Health Science and Practice, 1(2) 249-261

⁸ Fery, P., et al. 2018. American Climate Perspectives Survey: May 2018. A Closer Look: the Influence of Health and Faith on Climate. ecoAmerica and Lake Research Partners. Washington, D.C.