United States Environmental Protection Agency

Climate Change, Health, and Environmental Justice

Understanding the threats that climate change poses to human health can help us work together to lower risks and be prepared.
Climate change threatens human health, including mental health, and access to clean air, safe drinking water, nutritious food, and shelter. Everyone is affected by climate change at some point in their lives. Some people are more affected by climate change than others because of factors like where they live; their age, health, income, and occupation; and how they go about their day-to-day life.

Climate change is an environmental justice issue because certain groups of people in the United States are disproportionately affected by climate change and are less able than others to adapt to or recover from climate change impacts. These groups include people of color, low-income communities, immigrants, and people who are not fluent in English. There are many factors that can affect someone's ability to prepare for, respond to, and cope with the impacts of climate change on health. These include:

- living in areas particularly vulnerable to climate change (like communities along the coast)
- coping with higher levels of existing health risks when compared to other groups
- living in low income communities with limited access to healthcare services
- having high rates of uninsured individuals who have difficulty accessing quality healthcare
- having limited availability of information and resources in a person's native language
- less ability to relocate or rebuild after a disaster

Understanding the way that these factors are related to different impacts of climate change can help people and communities plan for risks, adapt to changes, and protect health.

What is climate change and why does it matter for health?

We've all heard of it, but what exactly is climate change? Greenhouse gases act like a blanket around Earth, trapping energy in the atmosphere. Human activities, especially burning fossil fuels for energy, increase the amount of greenhouse gases in our atmosphere and cause the climate to warm. **Climate** is the typical or average weather for an area. **Climate change** is any change in average weather that lasts for a long period of time, like warming temperatures. Climate change affects the food we eat, the air we breathe, and the water we drink. It also leads to extreme weather events, like flooding, droughts, and wildfires. All of these impacts affect human health.

There are steps that people and communities affected by climate change can take to protect themselves and their health. For example, community members can take part in planning and decision-making for local environmental protection, community development, and emergency services. These types of actions encourage local areas to prepare for where and how climate change impacts are expected to occur. Also, efforts to get the word out about how climate change affects some more than others help to spread environmental justice awareness.

Key Climate Change Impacts on Health

EXTREME HEAT

Climate change leads to more extreme heat events and warmer than average temperatures.

Example health impacts

- Heat cramps
- Heat exhaustion
- Heatstroke
- Hyperthermia (above normal body temperature)
- Dehydration

You may be at increased risk if you:

- Live in a home with poor insulation
- Do not have air conditioning
- Do not have access to cooling centers
- Work outdoors
- Do not have access to emergency healthcare
- Do not have access to emergency public health warnings in your native language

POOR AIR QUALITY

Climate change affects harmful air pollutants, like ozone and particulate matter, both outdoors and indoors, and can increase allergens in the air like ragweed pollen or dust.

Example health impacts

- Premature death
- Cardiovascular (heart) and respiratory (lung) illnesses
- Worsened allergy and asthma conditions

You may be at increased risk if you:

- Live in an urban area, especially one that already has a lot of air pollution
- Work outdoors
- Have medical problems like hypertension (high blood pressure), diabetes, chronic obstructive pulmonary disorder (COPD), or asthma
- Do not have access to public health information in your native language

EXTREME EVENTS

Climate change affects the frequency or intensity of some extreme events, such as flooding (related to heavy rains, hurricanes, and coastal storms), droughts, wildfires, and winter storms. Health impacts can happen long after or far away from the extreme event.

Example health impacts

- Injury, illness, and possibly death
- Mental health problems
- Damage to power, water, transportation, and communication systems important for health care and emergency response services

You may be at increased risk if you:

- Have limited transportation options
- Have limited access to health care services or medications needed for existing medical problems
- Have no or limited health insurance or property insurance
- Need electric medical equipment like oxygen machines that cannot be used during power outages
- Do not have access to emergency public health warnings in your native language

Key Climate Change Impacts on Health

CONTAMINATED WATER ILLNESSES

Rising water temperatures and changes in precipitation can shift when and where waterborne bacteria, viruses, parasites, and harmful algae grow. Heavy rains and flooding made more intense by climate change can damage drinking water, wastewater, and stormwater infrastructure. All of these changes increase the risk of water contamination and illness.

Example health impacts

- Gastrointestinal illnesses like diarrhea from waterborne bacteria, viruses, and parasites
- Liver and kidney damage, nerve and breathing problems, and diarrhea from harmful algae

You may be at increased risk if you:

- Live in an area with treated drinking water systems that are old or below standards
- Live in an area with untreated water such as well water
- Live in a crowded shelter after evacuations for an extreme event
- Do not have access to public health information in your native language

ACCESS TO SAFE AND NUTRITIOUS FOOD

Increasing temperatures and changes in precipitation can affect illness caused by harmful bacteria, viruses, or chemicals found in food. Rising carbon dioxide also affects the nutritional quality of food crops like wheat and rice. Extreme weather events can affect food shipments, leading to damaged, spoiled, or contaminated food.

Example health impacts

- Gastrointestinal illnesses like diarrhea from harmful bacteria like *Salmonella* and *E. coli*
- Food-related illnesses, like food poisoning
- Limited access to high quality food

You may be at increased risk if you:

- Do not have access to information on safe handling of food
- Live in an area with limited access to high quality food choices
- Have existing or chronic medical problems
- Do not have access to public health information in your native language

MENTAL HEALTH AND WELL-BEING

Impacts on people's physical health and changes in their surrounding environment can affect their mental health. Extreme weather events are known to affect mental health, especially in cases of loss of life or home, images of extreme weather events in the media, or disruption of communication lines and social support networks that people with mental illnesses need to stay healthy.

Example health impacts

- Stress
- Anxiety
- Depression
- Post-traumatic stress
- Suicide
- Alcohol abuse

You may be at increased risk if you:

- Do not have access to mental health care, especially counseling, in your native language
- Have an existing mental illness, especially if taking medication that increases sensitivity to heat stress
- Live in an area vulnerable to extreme weather events
- Have limited social support networks

Effects of Climate Change on Existing Health Conditions

People of color, people from low-income communities, and immigrants tend to have relatively high rates of some existing health conditions like heart disease, diabetes, asthma, and chronic obstructive pulmonary disease (COPD). The following are examples of how climate change affects these common health problems. Knowing the risks can help people prepare for increasing threats from climate change.

- **Heart disease** – Heart disease increases sensitivity to heat stress.
- **Diabetes** – Diabetes increases sensitivity to heat stress. Extreme weather events can also be problematic for diabetics because these events may limit access to the medicine and food that diabetics need to stay healthy.
- **Asthma** – Asthma can be exacerbated by changes in pollen season and exposure to air pollution caused by or made worse by changes in temperature, humidity, wind, or wildfires.
- **COPD** – Patients with COPD are more sensitive than the general population to changes in outdoor air quality made worse by climate change.

This fact sheet is based on "The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment." To explore the full report, go to:

https://health2016.globalchange.gov

Learn More

Climate Change: Human Health
https://www3.epa.gov/climatechange/impacts/health.html

Climate Change: What You Can Do
https://www3.epa.gov/climatechange/wycd/

Environmental Justice
https://www3.epa.gov/environmentaljustice/index.html

Recursos en Español

Climate Health Assessment: Resumen Ejecutivo en español
https://health2016.globalchange.gov/downloads

EPA en español
https://espanol.epa.gov/

EPA en español: El cambio climático y usted
https://espanol.epa.gov/espanol/el-cambio-climatico-y-usted

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