



# Communicating the Health Effects of Climate Change

A TOOLKIT FOR PUBLIC HEALTH OUTREACH

National Center for Environmental Health  
Division of Environmental Hazards and Health Effects



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# How to Use this Presentation

The CDC Climate and Health Program developed the following slides in collaboration with climate communication experts to help you talk about the health harms of climate change. Our hope is that this presentation makes it easier to incorporate consistent, evidence-based public health messaging into your existing communications.

Tips for developing your presentation:

- **Mix & Match:** Choose the slides that best fit your location and your audience.
- **Customize:** Most of the slides are editable. Insert content specific to your program and locale. Use the licensed photos provided here, or even better, use photos that add a local flavor.
- **Use Plain Language:** Follow Federal Plain Language guidelines using CDC's resources (<https://www.cdc.gov/other/plainwriting.html>).

Please contact Eric Lahr ([ekl8@cdc.gov](mailto:ekl8@cdc.gov)) for questions or technical support.



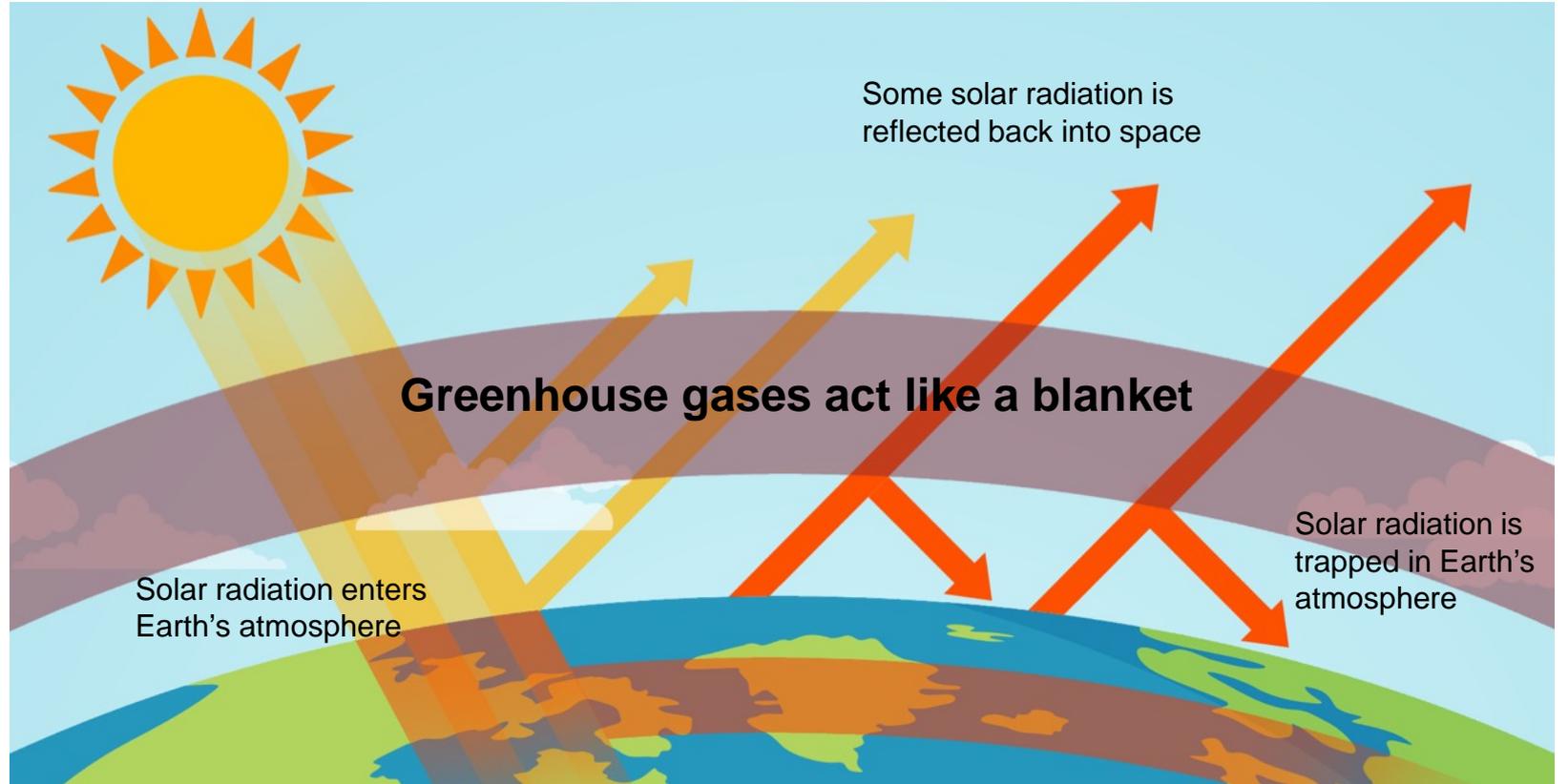
# The Public Health Effects of a Changing Climate

HOW CLIMATE CHANGE IS HARMING HEALTH  
AND WHAT WE CAN DO TO PROTECT THE PUBLIC

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# What is Climate Change?



# How is Climate Change Affecting Health?

## Affecting Health Directly

Extreme Heat  
Air Pollution  
Extreme Weather

## Spreading Disease

Diseases Spread by Insects,  
Ticks, and Rodents  
Contaminated Water  
Contaminated Food

## Destroying & Disrupting Food Supplies

Hunger and Malnutrition

## Disrupting Well-Being

Mental Health Problems

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AFFECTING HEALTH DIRECTLY

# EXTREME HEAT

Higher heat, increased humidity, longer and more frequent heat waves can lead to:

dehydration and heatstroke

**More Vulnerable:** Outdoor workers, student athletes, people in cities, people without air conditioning, people with chronic diseases, pregnant women, older adults, and young children



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AFFECTING HEALTH DIRECTLY

# AIR POLLUTION

Increased wildfires, smog, pollen, and mold can lead to:

asthma and allergy attacks

**More Vulnerable:** People with heart and respiratory conditions such as heart disease, asthma, or chronic lung disease



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**AFFECTING HEALTH DIRECTLY**

# EXTREME WEATHER

Increased frequency and severity of heavy downpours, floods, droughts, and major storms can lead to:

**injury, illness, displacement, and**

**More Vulnerable:** People who lack access to evacuation routes and people who can't use stairs when elevators are out of service, people in wheelchairs, older adults, the poor, and people with disabilities, particularly if they are unable to access elevators and evacuation routes



SPREADING DISEASE

# INSECTS, TICKS, AND RODENTS

Higher temperatures, changes in rain patterns, and disrupted ecosystems help spread:

diseases carried by  
insects, ticks, and rodents



**More Vulnerable:** People who spend more time outdoors in places where these insects and other disease-carriers live

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SPREADING DISEASE

# CONTAMINATED WATER

Higher water temperatures, heavier downpours, rising sea levels, and more flooding help spread:

gastrointestinal illness, diseases from  
toxins in swimming areas and drinking

water

**More Vulnerable:** Children, the elderly, people with weakened immune systems, people in remote or low-income communities with inadequate water systems, and people in communities that are dependent on fish and shellfish



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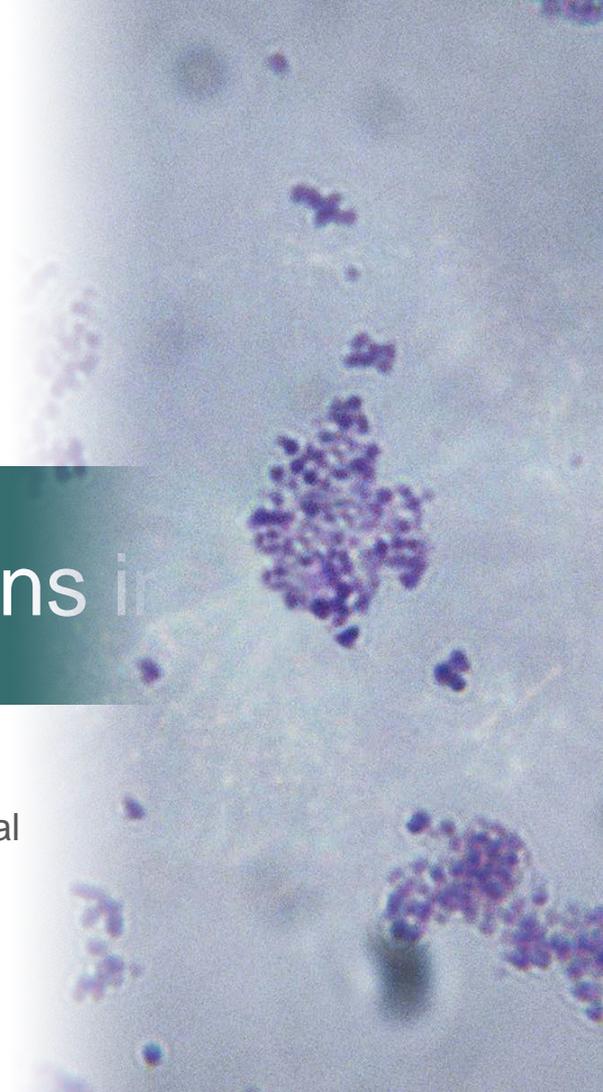
SPREADING DISEASE

# CONTAMINATED FOOD

Increasing temperatures, humidity, and extreme weather events help spread:

illnesses from bacteria and toxins in

**More Vulnerable:** Infants, young children, the elderly, the poor, agricultural workers, and people with weakened immune systems



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DESTROYING AND DISRUPTING FOOD SUPPLIES

# HUNGER AND UNDERNUTRITION

Increasing temperatures, humidity, and extreme weather events can lead to:

undernutrition, vitamin deficiencies

**More Vulnerable:** Infants, young children, pregnant women, older adults, and poor communities



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DISRUPTING WELL-BEING

# MENTAL HEALTH PROBLEMS

Increased frequency and severity of extreme weather events can lead to:

stress, depression, anxiety, PTSD,  
and suicidal thoughts

**More Vulnerable:** Children, older adults, pregnant and postpartum women, people with mental illnesses, the poor, homeless people, first responders, and people who rely on the environment for their livelihood





# What Communities Can Do

PUBLIC HEALTH HARMS OF CLIMATE CHANGE

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# BRACE

CDC's framework for climate and health adaptation

## BILDING RESILIENCE AGAINST CLIMATE EFFECTS

1



Anticipate  
Climate Impacts  
and Assess  
Vulnerabilities

2



Project the  
Disease Burden

3



Assess Public  
Health Interventions

4



Develop and  
Implement a  
Climate and Health  
Adaptation Plan

5



Evaluate Impact  
and Improve  
Quality of Activities

# EXTREME HEAT

What Communities Can Do



## Develop a Heat Response Plan

- Develop or expand the extreme heat alert system
- Ensure vulnerable populations can be reached
- Plan cooling centers ahead of time



# EXTREME HEAT

What Communities Can Do



## Cool Your Community

- Increase the tree canopy to help keep buildings and the surrounding air cooler



# EXTREME HEAT

What Communities Can Do



## Cool Your Community

- **Use cool paving** and reflective and porous materials to help lower the surrounding temperature



# AIR POLLUTION

What Communities Can Do



## Encourage Active and Mass Transportation

- Walking, biking, and shared transportation can lower traffic-related pollution



# AIR POLLUTION

## What Communities Can Do



### Reduce Energy Waste

- Energy efficient buildings and vehicles can reduce air pollution
- Weatherize homes, offices, schools, and other buildings
- Encourage the purchase of fuel efficient vehicles



# STORMS & FLOODING

What Communities Can Do



## Prepare Infrastructure

- Identify buildings, roads, and other infrastructure that are most vulnerable to damage
- Ensure existing and new infrastructure can withstand increasingly intense storms and flooding



# CONTAMINATED WATER

What Communities Can Do



## Improve Sanitation and Water Management

- Protect drinking water sources and delivery systems
- Prevent sanitary sewer overflows



# CONTAMINATED FOOD

What Communities Can Do



## Disseminate Food Safety Messages

- Monitor the effect of water contamination on agricultural products that may lead to foodborne illness
- Bolster food safety messaging to public during extreme weather events



# HUNGER AND MALNUTRITION

What Communities Can Do



## Inform Public of Community Assistance Resources

- Disseminate information about food assistance programs to highest risk populations
- Include information about who qualifies and how to access support



# MENTAL HEALTH PROBLEMS

What Communities Can Do

## Prepare an Emergency Plan

- Develop behavioral health plans for disasters
- Include clear messaging about access to mental health services and crisis counseling





# What Individuals Can Do

PUBLIC HEALTH HARMS OF CLIMATE CHANGE

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# EXTREME HEAT

What Individuals Can Do



## Stay Hydrated

- Drink plenty of liquids



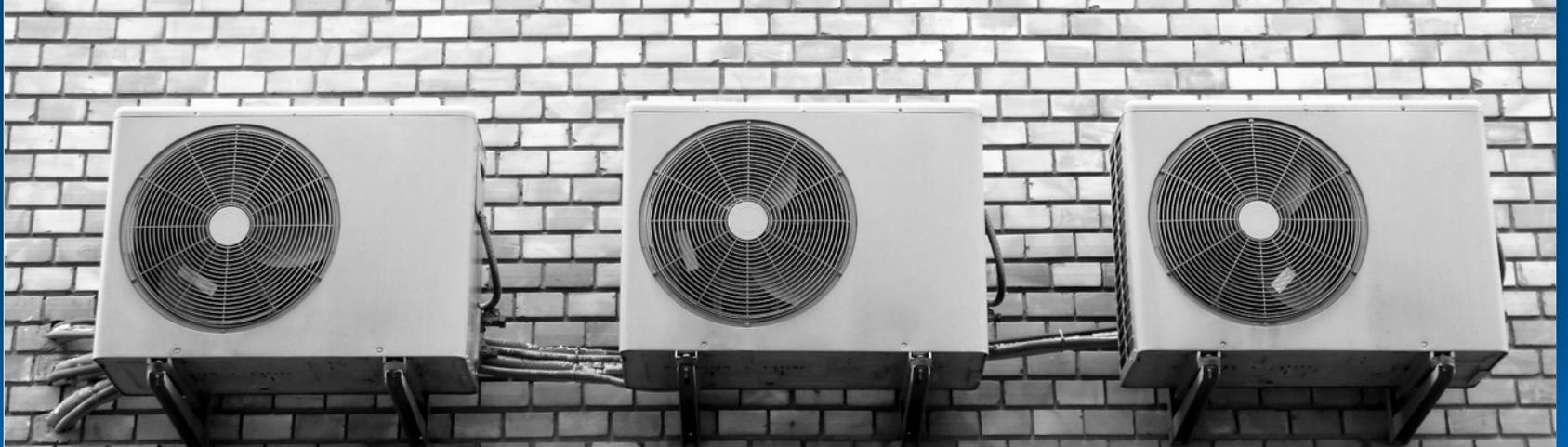
# EXTREME HEAT

What Individuals Can Do



## Stay Cool

- Find places to cool off, such as a local mall, a library, or a cooling center



# EXTREME HEAT

## What Individuals Can Do



### Check on Family and Friends

- Keep a list of family, friends, and neighbors to check on during an extreme heat event



# EXTREME HEAT

## What Individuals Can Do



### Plan Ahead

- Subscribe to local health alert systems
- Keep air conditioners and fans up-to-date
- Check for local programs that:
  - Provide free or reduced-cost air conditioners
  - Help pay utility bills
  - Provide transportation to cooling centers during extreme heat events



# EXTREME HEAT

What Individuals Can Do



## Plant Rooftop Gardens

- Planting trees and plants helps provide shade to buildings and keeps surrounding air cooler



# AIR POLLUTION

## What Individuals Can Do



### Monitor Air Quality Index and Stay Indoors

When pollen counts or ozone levels are high:

- Stay indoors if you have asthma, heart problems, or are otherwise at risk
- Cancel outdoor activities or move to air-conditioned location



# STORMS & FLOODING

What Individuals Can Do



## Be Careful of Moisture Indoors

- Carefully clean and dry flooded areas
- Watch for mold growing indoors



# INSECTS, TICKS, & RODENTS

What Individuals Can Do



## Prevent Insect Bites

- Use insect repellent
- Wear long sleeves and pants
- Check carefully for ticks after being outdoors in wooded or grassy areas, especially in the summer



# INSECTS, TICKS & RODENTS

What Individuals Can Do



## Avoid Contact with Rodents and Droppings

- Keep your home, cabin, or outbuildings free of mice and rats
- Check with your local health department to learn how to safely clean up dead rodents and droppings



# CONTAMINATED FOOD

What Individuals Can Do



## Know Home Food Safety Basics

- **Cook:** To the right temperature
- **Clean:** Wash hands and surfaces often
- **Chill:** Refrigerate promptly
- **Separate:** Raw meats from other foods, don't cross-contaminate



# CONTAMINATED FOOD

## What Individuals Can Do



### See Your Doctor if You Have:

- High fever (over 101.5 degrees F)
- Blood in the stools
- Frequent vomiting that prevents you from keeping liquids down
- Signs of dehydration, including a decrease in urination, a dry mouth and throat, or feeling dizzy when standing up
- Diarrheal illness that lasts more than 3 days



# HUNGER AND MALNUTRITION

What Individuals Can Do



## Find Out if Your Family Qualifies for Assistance

- SNAP [insert state-specific link]
- WIC [insert state-specific link]
- School breakfast and lunch programs [insert state-specific link]



# MENTAL HEALTH PROBLEMS

What Individuals Can Do



## Know Your Signs of Stress

- Difficulty concentrating and making decisions
- Reduced interest in usual activities
- Disbelief, shock, and numbness
- Anger, tension, and irritability
- Fear and anxiety about the future



# MENTAL HEALTH PROBLEMS

What Individuals Can Do



## Socialize with Friends and Family

- Connect and talk with your friends, family members, and your community



# MENTAL HEALTH PROBLEMS

What Individuals Can Do



## Take Mental Breaks

- Engage in activities to decompress such as exercise, listening to music, or spending time with a friend



# MENTAL HEALTH PROBLEMS

What Individuals Can Do



## Ask for Help

- Seek professional help when symptoms are disrupting your day-to-day activities





# What CDC Is Doing

PUBLIC HEALTH HARMS OF CLIMATE CHANGE

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# Climate Health Program (CHP)

## What the CDC Is Doing



Established in 2009, the Climate and Health Program provides leadership to help communities anticipate, prepare for, and respond to the public health impacts of climate change.

The Climate and Health Program developed the five-step Building Resilience Against Climate Effects (BRACE) framework to help communities with adaptation planning.

CDC's Climate-Ready States and Cities Initiative (CRSCI) is helping 16 states and two cities implement the BRACE framework.





# What We Are Doing in [name of community]

ADAPTATION IN ACTION

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# OUR APPROACH

What We Are Doing in [name of community]

## CHALLENGE

What climate and health challenge(s) did your community address?

## SOLUTION

What solutions did you implement?

## RESULTS

What were your successes? How should they be replicated or scaled up? Why do these preventative and precautionary steps matter?

# [headline]

What We Are Doing in [our community]



## OUR SOLUTION

[brief description about program, detailing which health harm it is addressing]



## UNIQUE OFFERING

[information about key aspect of the program and how it is unique]



## LASTING IMPACT

[information on results and consequences of program]

[add photos here]

# Adapting to the New Normal

## What We Are Doing in Minnesota



### OUR SOLUTION

**Extreme Heat Toolkit** to guide local health officials in responding to heat events



### UNIQUE OFFERING

Use **GIS mapping** to identify vulnerable communities and neighborhoods



### LASTING IMPACT

Resources allocated to most vulnerable areas and participating communities grew from **two to six** in just one year



# Bringing Health to the Forefront

What We Are Doing in San Francisco



OUR SOLUTION

The city's first **heat vulnerability index** to pinpoint most susceptible neighborhoods



UNIQUE OFFERING

Index analyzed surface temperature data alongside **21 social and environmental vulnerabilities**



LASTING IMPACT

Index now informs city planning decisions, education efforts, and designated cooling centers



# There's Much We Can Do

Educate public about the public health harms of climate change and what they can do

Create early warning systems that help people prepare for climate-influenced events



Inform stakeholders about climate-related health harms and how those harms will be experienced locally

Use research to better understand health harms and effective responses