

# Climate Change and Health Effects

The Earth's climate is changing in ways that could have serious consequences for public health. In addition to the direct effects of higher temperatures, climate change will likely increase the number of people suffering from illness and injury due to floods, storms, droughts, and fires, as well as allergies and infectious diseases. This fact sheet describes some of the key ways in which climate change is expected to affect people's health.

## Heat-Related Illnesses and Deaths

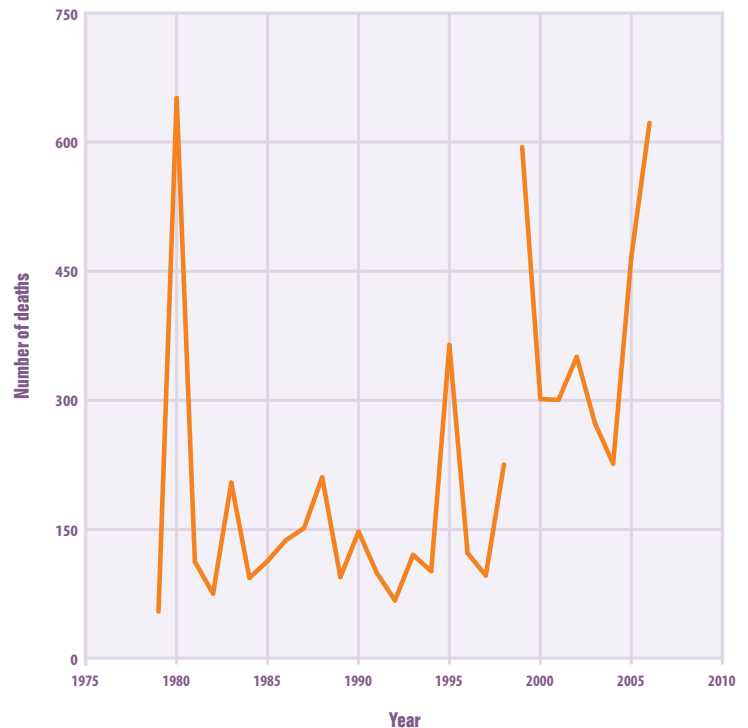
When people are exposed to extreme heat, they can suffer from potentially deadly illnesses such as elevated body temperatures, heat cramps, heat exhaustion, and heat stroke. As the world's average temperature gets warmer, some areas are already experiencing an increase in the number of extremely hot days, and scientists expect severe heat waves to become more frequent and more intense in the future.

Heat is already the leading cause of weather-related deaths in the United States, with more than 6,300 deaths resulting from exposure to extremely hot weather between 1979 and 2006. Rising temperatures, however, might result in fewer deaths from extreme cold.

## Respiratory Problems

In some parts of the United States, smog (ground-level ozone) levels are expected to increase as temperatures rise. Smog can irritate the respiratory system, reduce lung capacity, and aggravate asthma. People with existing respiratory or heart problems would be at increased risk.

## Heat-Related Deaths in the United States, 1979-2006



Between 1998 and 1999, the World Health Organization revised the international codes used to classify causes of death. As a result, data from before 1999 cannot easily be compared with data from 1999 and later.

Source: U.S. Centers for Disease Control and Prevention. 2009.  
<http://wonder.cdc.gov/mortSQL.html>



Office of Air and Radiation (6207)  
EPA 430-F-10-003  
[www.epa.gov/climatechange](http://www.epa.gov/climatechange)  
April 2010

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## Diseases and Allergies

Diseases such as cholera and salmonella, which are transmitted through contaminated food or water, could become more widespread with climate change because of increased flooding.

Changes in temperature and rainfall in some areas are likely to increase the range and the length of activity for ticks and mosquitoes, which can spread diseases such as Lyme disease, malaria, and West Nile virus. In fact, the large transmissions of West Nile virus during the summers of 2002 through 2004 in the United States have been linked to the above average temperatures seen in these years. These impacts may be more prevalent in developing countries, however, since many climate-sensitive diseases such as malaria have been virtually eliminated in the United States due in part to public health measures.

Climate change could also cause more severe allergy symptoms because a warmer climate is expected to promote the growth of the molds, weeds, grasses, and trees that cause allergic reactions in some people. Climate change has already caused the spring pollen season to begin earlier in North America. Ragweed has been observed to grow faster and flower earlier in urban areas where effects of climate change are enhanced compared with rural areas.

### Who Is at Risk?

Certain people are more at risk of experiencing the health impacts of climate change than others, including those who:

- Are elderly, very young, disabled, poor, or living alone.
- Have existing medical conditions such as heart disease or asthma.
- Live in urban neighborhoods that are already stressed by air pollution, aging infrastructure, and the heat island effect, which makes cities hotter than surrounding rural areas.

The degree to which people will be affected also depends on the ability of a region to prepare for and respond to risks. Improvements in emergency preparedness, health-care systems, and other response measures can all help reduce the health impacts of climate change.

## For More Information

For detailed information about greenhouse gas emissions, the effects of climate change, EPA efforts underway, and tips on what you can do, visit EPA's Climate Change Web site at [www.epa.gov/climatechange](http://www.epa.gov/climatechange).

