VILLAGE OF HASTINGS-ON-HUDSON

HEAT EMERGENCY PLAN



Adopted by the Board of Trustees of the Village of Hastings-on-Hudson March 2020

Approved by: Local Elected Officials and Emergency Management Center



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1. Purpose and Definitions

Purpose

The Village of Hastings-on-Hudson implements its Heat Emergency Plan (HEP) when a Heat Emergency occurs and the National Weather Service (NWS) issues an "extreme heat warning" for our area. The Heat Emergency Plan provides information on our operations to help residents understand our response efforts.

The HEP supports the following functions of the local emergency response effort:

- Maximize the protection of lives while minimizing morbidity and mortality related to excessive heat and humidity levels.
- Document strategies and procedures to respond to extreme health related emergencies; specifically, to establish cooling centers where the public can take refuge in response to extreme heat conditions.

This plan is designed to document and share the protocols of the Hastings on Hudson Emergency Management Operations Center ("EMOC"), as well as to inform the public on the resources and services available in the event of Heat Emergencies.

Every emergency is different and the response to some extent is dictated by the events that surround it. The Village will make best efforts to incorporate the guidance in this document to inform the preparation and response to each emergency.

Definitions

Heat Related Conditions

The National Weather Service (NWS) identifies heat related conditions so as to keep the public informed about danger levels. These are summarized below.

Excessive Heat Outlooks—Be on Alert! are issued when the potential exists for an excessive heat event in the next 3 to 7 days. An "Outlook" provides information to those who need considerable lead-time to prepare for the event.

Excessive Heat Watches—Get Prepared! Heat Watches are issued when conditions indicate the likelihood of an excessive heat event in the next 24 to 72 hours. A "Watch" is used when the risk of a heat wave has increased but its occurrence and timing is still uncertain.

Excessive Heat Advisory or Warning—Take Action! Heat Advisories are issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for an Advisory is when the maximum heat index temperature is expected to be 100° or higher for at least 2 days, and night time air temperatures will not drop below 75°; however, these criteria vary across the country, especially for areas that do not experience dangerous heat conditions frequently. The Heat Advisory warns citizens to take precautions to avoid heat illness: if you don't take precautions, you may become seriously ill or even die.

Heat Index and Relative Humidity

The Heat Index. The Heat Index, also known as the apparent temperature, is what the temperature feels like to the human body when relative humidity is combined with the air temperature. This has important implications for the human body's comfort. When the body gets too hot, it begins to perspire or sweat to cool itself off. If the perspiration is not able to evaporate, the body cannot regulate its temperature. Evaporation is a cooling process. When perspiration is evaporated off the body, it effectively reduces the body's temperature. When the atmospheric moisture content (i.e. relative humidity) is high, the rate of evaporation from the body decreases. In other words, the human body feels warmer in humid conditions. The opposite is true when the relative humidity decreases because the rate of perspiration increases. The body actually feels cooler in arid conditions. There is direct relationship between the air temperature and relative humidity and the heat index, meaning as the air temperature and relative humidity increase (decrease), the heat index increases (decreases).

Relative Humidity. Relative humidity (RH) (expressed as a percent) measures water vapor, but RELATIVE to the temperature of the air. In other words, it is a measure of the actual amount of water vapor in the air compared to the total amount of vapor that can exist in the air at its current temperature. Warm air can possess more water vapor (moisture) than cold air, so with the same amount of absolute/specific humidity, air will have a HIGHER relative humidity if the air is cooler, and a LOWER relative humidity if the air is warmer. What we "feel" outside is the actual amount of moisture (absolute humidity) in the air.

Source NWS: https://www.weather.gov/ama/heatindex)

Heat Index Classifications

Classification	Heat Index	Effect on the body
Caution	80°F - 90°F	Fatigue possible with prolonged exposure and/or physical activity
Extreme		Heat stroke, heat cramps, or heat exhaustion possible with prolonged
Caution	103°F	exposure and/or physical activity
Danger	103°F - 124°F	Heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity
Extreme	125°F or	Heat stroke highly likely
Danger	higher	

(National Weather Service; https://www.weather.gov/safety/heat-ww)

Heat Vulnerability Index

The Heat Vulnerability Index (HVI) helps to quickly identify heat-vulnerable populations. The New York State Department of Health (NYS DH) calculates a Heat Vulnerability Index for local communities using four categories of vulnerability:

Category	Description
Language Vulnerability	Among populations with limited understanding of English, language is often a barrier to accessing resources and understanding alert messages issued in English during heat events. Heat awareness messages should be announced in the common languages spoken in the area to best communicate heat risks.
Socio-economic Vulnerability	The economic status of individuals can affect how they cope with extreme heat. While recommendations to use air conditioners during hot days are typically a part of cool-down messaging, this may not be an affordable option for low-income households. Community resources like cooling centers can help provide the public with a few hours of relief from hot weather. Public transportation helps to make to these facilities accessible to families and individuals who may not own a vehicle.

Environmental Vulnerability	Built environment and urban heat island effect contribute to heat vulnerability in urban areas. Unlike surfaces covered in vegetation, areas covered by sealed surfaces, such as asphalt and concrete (buildings and pavements), tend to retain heat. Developing parks, increasing green space, constructing green roofs, and using materials that cool rooftops and pavements can help with regional cooling.
Elderly Isolation/ Elderly Vulnerability	Elderly people are often the first population to be affected by extreme heat, especially those who are socially isolated from family and the community - they face additional challenges including fewer options for healthcare and timely assistance. Efforts to reduce the health effects of heat should also target the elderly.

Source: https://www.health.ny.gov/environmental/weather/vulnerability_index/docs/westchester.pdf

The Heat Vulnerability Index (HVI) can help inform interventions to target specific vulnerable populations. For example, local agencies can: 1) set up more cooling centers in vulnerable areas where homes are less likely to have air conditioning; 2) provide transportation to and from cooling centers when public transportation is unavailable; 3) include risk communication and alerts in multiple languages for populations with low English proficiency; and 4) conduct additional outreach efforts to check on vulnerable populations (those with disabilities, elderly living alone, etc.).

The HVI scores for census tracts in NYS ranged from 9 to 24 with a mean of 13.93 (2017 data).

For the Village of Hastings-on-Hudson, using data from the NYS Department of Health and conducting a zip code crosswalk, we get the following index value:

Heat Vulnerability Index for Hastings-on-Hudson	12

Source: https://www.sciencedirect.com/science/article/pii/S003335061730327X with zip code crosswalk from https://www.huduser.gov/portal/datasets/usps crosswalk.html

Although Hastings-on-Hudson falls <u>below the average HVI</u> for NYS, it is still important to have a robust heat emergency plan in place, particularly in the face of climate change and greater unpredictability of weather patterns.

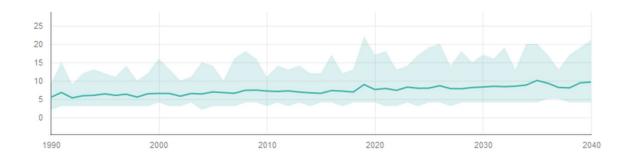
Climate Change and Warming Trends

Data garnered from 22 different climate models, indicates that Hastings-on Hudson will experience an increased number of hotter days and greater frequency of heat waves in the future.

Source: Temperate Tool produced by ICLEI, a global network of more than 1,750 local and regional governments committed to sustainable urban development.

Heat Wave Duration — the maximum number of days with daily high temperatures exceeding 5 degrees Celsius - around 9 F - of their historical norm 1971 baseline: 6 days

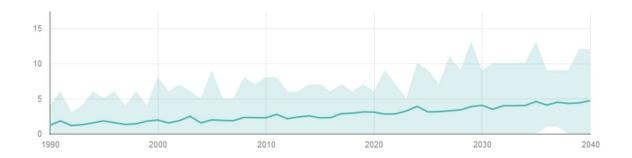
2020	2030	2040	
7.5 days	8.2 days	9.6 days	



Heat Wave Incidents – Number of times in a year when the daily high temperature exceeds 5C ($^{\circ}$ 9F) above historic norm for at least 5 consecutive days.

1971 baseline: 1 per year

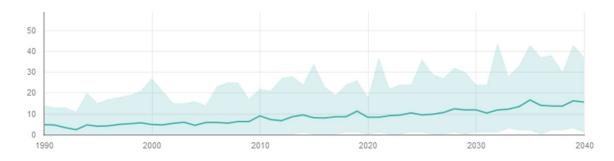
2020	2030	2040	
3	4	5	



Extreme Heat Events — Total number of times per year that the daily maximum temperature exceeds the 99th percentile of historic observations.

1971 baseline: 3 per year

2020	2030	2040
8.3	11.8	15.6



Source: ICLEI (https://www.iclei.org/) and the Temperate tool (https://temperate.io/)

2.0 Vulnerable Populations

Identifying Vulnerable Populations

In Hastings-on-Hudson we have identified a number of vulnerable populations for our outreach efforts as well as to ensure availability of cooling centers and other resources in the event of heat emergencies.

Based on the most recent census data (2010 census), Hastings-on-Hudson has the following demographic characteristics:

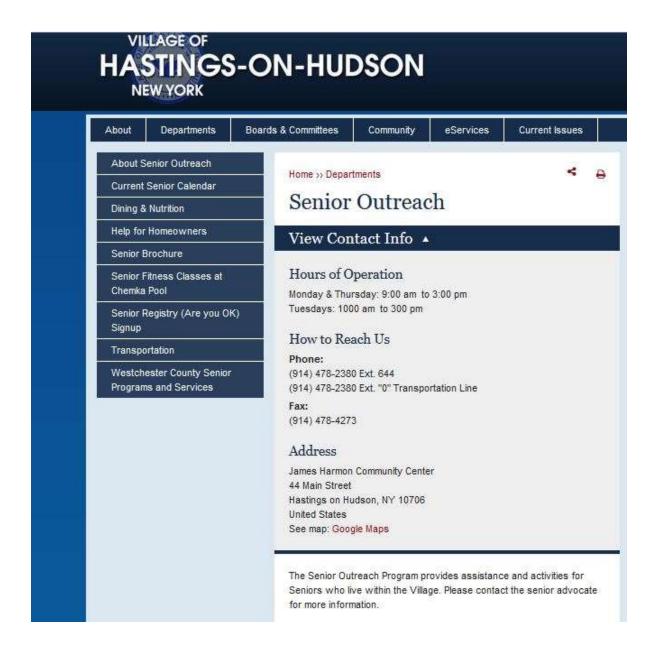
Demographics	Percent of Population	Number of People	Vulnerability Categories	Implication for Village
Population estimate (July 2018)	100%	7,849		
Children under age 5	4.8%	377	At-risk population	Alerts
Over 65 living alone	4.5%	357	Elderly Isolation	Elderly at risk person outreach
Hispanic or Latino	9.0%	710	Language	Spanish language outreach
Persons in poverty	4.1%	322	Socio-Economic	Potential lack of air-conditioning

Source: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF; https://www.census.gov/quickfacts/hastingsonhudsonvillagenewyork

The numbers above may be overstated based on actual Village experience, especially with regards to the number of seniors living alone. Also, there will be overlap between the numbers, e.g. you can have people in poverty being senior citizens of Hispanic origin, etc.

Based on actual usage of cooling centers during previous heat emergencies, typically 20 to 30 people use the James Harmon Community Center facility at various times in a day.

Hastings-on-Hudson has a **senior outreach** program as well as opt-in lists that allow residents to receive notifications and messages from the Village. There are currently around 140 seniors who have opted in and have provided phone contact details to the Village's Senior Outreach Coordinator.



3.0 Working with Emergency Services and Utility Companies

Hastings-on-Hudson has an Emergency Management Operations Center ('EMOC") which is activated before and during emergencies. The Purpose of EMOC is to oversee all types of emergencies that affect the welfare of the citizens of the Village. The HOH EMOC consists of the Village Manager and the Chiefs of the Police, Fire and DPW departments, with the added help of the Village Clerk and Building Inspector. The Technology Department acts as the Public Information Office and disseminates the information to the public as well as media outlets as needed.

HOH EMOC manages emergencies by first determining the threat, then planning and producing a response, and then putting into action a response that protects and safeguards the public's welfare.

Weather-related emergency alerts are received by the HOH EMOC in the following ways:

- National Weather Service (NWS)
- Westchester County Department of Emergency Services (WCDES)
 (https://emergencyservices.westchestergov.com/divisions/office-of-emergency-management)
- Con Edison, the primary utility company for the Village
- Local media, including TV and radio
- Westchester specific online news sources, e.g. http://westchester.news12.com/weather
- Coordination with any other agencies that may be impacted by weather related emergencies

Coordination with Utilities

Con Edison (https://www.coned.com/en) supplies power to residents in the Village. The Village is in regular contact with officials at Con Edison and there is direct communication during conditions that impact power/energy (storms, fire, heat and snow advisories, etc.). There is also ad hoc communication as required.

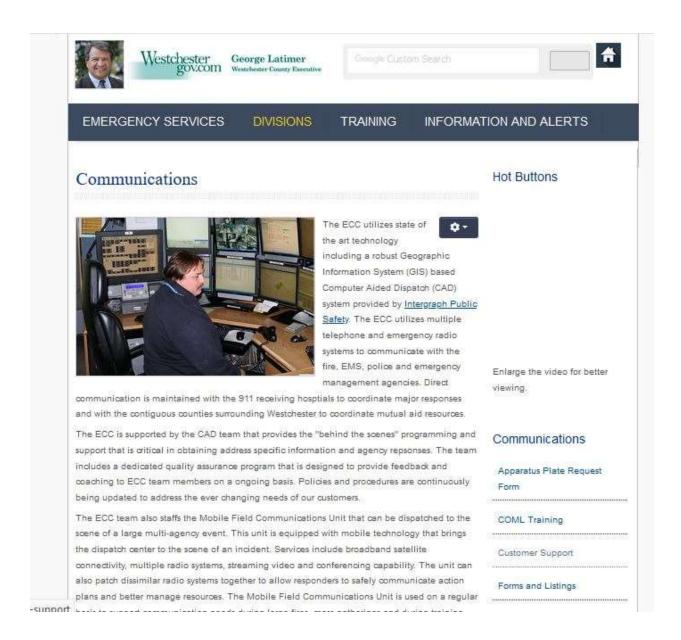
Suez Water (https://www.mysuezwater.com/) supplies water to the Village and Village Officials and the emergency department have direct contact so as to address any water related issues. Suez is responsible for maintaining the water hydrants across the Village.

Coordination with Westchester County Department of Emergency Services

The Village of Hastings-on-Hudson is part of the Division 60 Control Emergency System deployed by the Westchester County Office of Emergency Management. (https://emergencyservices.westchestergov.com/divisions/communications-60-control)

The Division 60 Control emergency system allows the Village Fire and EMS departments to receive dispatches, alerts and communications regarding various emergencies including weather related emergencies.

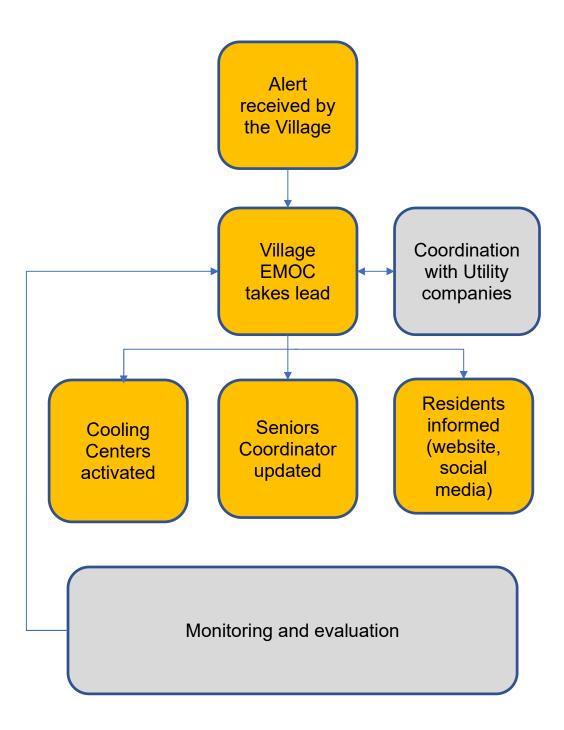
Westchester County Division 60 Control Communications for Emergencies



4.0 Triggers, Alerts and Actions

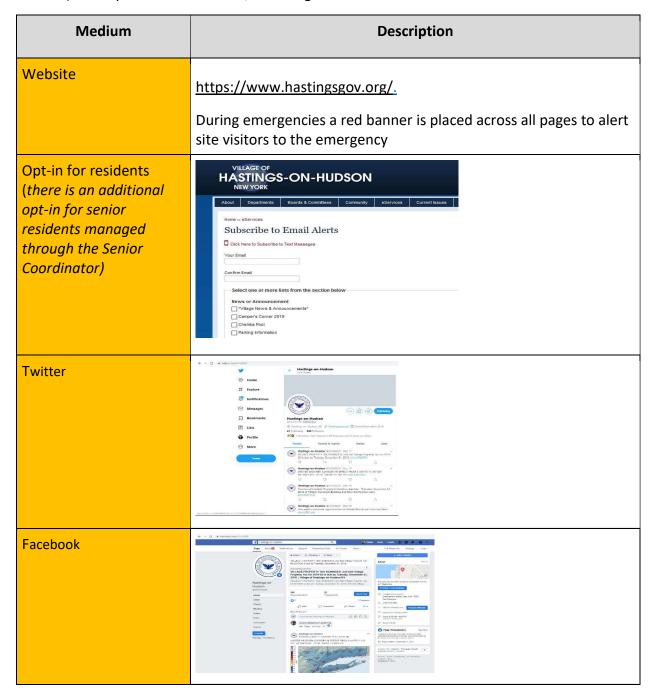
Emergency Protocol Process

The Village HOH EMOC will activate a process when a Heat Watch and Heat Warning/Emergency is declared. The process is as follows:



Keeping Residents Informed

Hastings-on-Hudson uses several communications channels (Website, social media, TV station, Radio etc.) to keep resident informed, including on weather related matters:



Medium	Description		
TV Station	CUCK HERE TO "TELLIT TO VILLAGE HALL"		
	Village of Hastings-on-Hudson		
	Z.Maple Ave. Hastings-on-Hudano. NY. 18798		
	web: http://itastings.gov.cru		

	WHOH.TV Channel 75 TV Schedule. CHANNEL 43 VERIZON FIOS		
	School District TV Channel 77 Schedule CHANNEL 27 VERIZON FIOS		
	STAY CONNECTED DOWNLOAD ALL OF OUR SMARTPHONE APPS, HERE:		
	WHOTATV (AND SOURTHURES) TO SUBSCHIEG OF ON UNSUBSCHIEG OF OTO http://hastingsgov.org/nubscribe		
	TO SUBSCRIBE OR ORSOBER AND SO TO INDUMENDATION OF A DESCRIPTION OF A DESC		
	For information regarding access for persons with disabilities, please visit https://hastingsgov.org or call 914-478-3400.		
	The Heatings-on-Hudson Technology Department asks that you consider the environment before printing this e-mail.		

Heat Advisory Alerts

Heat Advisory Alerts issued by the HOH EMOC will include the following information:

Section	Content
Details on weather	Time and date of heat event; expected temperatures; duration of heat event; insert links to local NWS site as applicable
Information on Cooling Centers	Details on primary and secondary cooling centers (location, timing, facilities); pool; link to Westchester county site for other cooling centers*
Outreach to senior citizens	Contact information for senior outreach coordinator (phone/ email) along with services provided
Tips on how to stay cool	Tips from FEMA, American Red Cross, New York State website**
Emergency contact information	911; Hastings emergency numbers and contacts

^{*}https://www.health.ny.gov/environmental/weather/cooling/countycenters.htm#westchester

^{**}https://www.health.ny.gov/environmental/emergency/weather/hot/

5.0 Cooling Centers

Cooling Centers are a key means to provide relief during heat emergencies. Hastings-on-Hudson has one primary cooling center and two back up centers that provide sufficient capacity based on prior usage and Village demographics. Information about the cooling centers is summarized below:

Name	Address	Handicap accessible	Air- conditi oning	Generator	Restrooms	Village owned	Other features
James Harmon Community Center (capacity 275) Primary Cooling Center	44 Main St, Hastings- on- Hudson, NY 10706	Yes	Yes	Yes (175 KWH)	Yes	Yes	Remote opening and closing; extended hours; kitchen/ pantry
Hastings Public Library (capacity 180)	7 Maple Ave, Hastings- on- Hudson, NY 10706	Yes	Yes	No	Yes	Yes	Secondary facility
Andrus on Hudson	185 Old Broadway Hastings- on- Hudson, NY 10706	Yes	Yes	Yes	Yes	No	Overnight stay potential if needed

The James Harmon Community Center is the primary cooling center resource for the Village of Hastings-on-Hudson and the Library is the secondary resource. Andrus on Hudson is a private senior living facility that has cooperated with the Village during emergencies.

The Village owned cooling centers can be found on the list maintained by the New York State health Department.

(https://www.health.ny.gov/environmental/weather/cooling/countycenters.htm#westchester)

James Harmon Community Center on 44 Main St., Hastings-on-Hudson

Primary cooling center



Technical specifications for the Generator at James Harmon Community Center:



Spray and Swimming Pool

The Village of Hastings also operates an outdoor swimming pool – the Chemka Pool - which can be used as a resource in the event of a heat emergency.(https://www.hastingsgov.org/chemka-pool)

The pool is open from mid-May to early September.

The Chemka Pool also has a spray pool which can provide relief during heat emergencies.



Transportation

Hastings-on-Hudson has a land area of only 2 square miles. In the event of heat emergencies, the Fire Department, as well as volunteers, bring residents to the cooling centers as needed.

6.0 Plan Updating and Revisions

This Heat Emergency Plan will be periodically reviewed and updated as needed. It may be updated more frequently in the following situations:

- A determination by the Hastings-on-Hudson EMOC to review the Plan (either post an extreme heat event or other contributing factor).
- New York State or Westchester County requirements and recommendations.
- Mayor's determination that a review is required.

7. Resources and Exhibits

Federal Emergency Management Agency: Extreme Heat Fact Sheet



In most of the U.S., extreme heat is a long period (2 to 3 days) of high heat and humidity with temperatures above 90 degrees.







IF YOU ARE UNDER AN EXTREME HEAT WARNING

Find air conditioning, if possible.





Check on family members and neighbors.

Avoid strenuous activities.



Drink plenty of fluids.

Watch for heat illness.



3

Watch for heat cramps, heat exhaustion, and heat stroke.

Wear light clothing.



Never leave people or pets in a closed car.

U.S. Environmental Protection Agency: Planning for Excessive Heat Events



During an average summer, approximately 1,500 people die from excessive heat events in the U.S.¹ A single heat wave in Chicago killed more than 700 people in 1995. In Europe, a record heat wave claimed an estimated 35,000 lives in 2003. In both cases, most of the victims were 65 or older.

October 2007

"It's Too Darn Hot" -

Planning for Excessive Heat Events

Information for Older Adults and Family Caregivers

id you know that each year more people die from "excessive heat events" than from hurricanes, lightning, tornadoes, floods, and earthquakes combined?² Anyone can be adversely affected by excessive heat, but older adults are particularly vulnerable.

Excessive heat events are prolonged periods when temperatures reach10 degrees Fahrenheit or more above the average high temperature for a region.³

Excessive heat events are believed to have a disproportionate public health impact in cities. One reason is that roads and buildings absorb the sun's energy and contribute to the formation of "heat islands." While rural areas cool off at night, cities retain this absorbed heat. As a result, urban residents get less nighttime relief from high temperatures. Fortunately, there are simple steps that older adults, their care-givers, and community leaders can take to

decrease the impact of excessive heat events.

Who is At Risk from Extreme Heat?

Older adults, as well as young children, are at high risk from excessive heat events. For the growing number of aging Americans, the body's cooling mechanisms may become impaired. Living alone or being confined to a bed and unable to care for one's self further increases risk.

Existing health conditions such as chronic illness, mental impairment, and obesity can also heighten an individual's vulnerability. Persons taking certain medications are likewise susceptible.

In addition, people who live on the top floors of buildings without air-conditioning are more likely to be exposed to excessive heat. Participating in strenuous outdoor activities and consuming alcohol during unusually hot weather likewise exacerbates heat-related health effects.

"Excessive heat events" are surprisingly deadly. Vulnerable groups like older adults are at particularly high risk.

The good news is that there are simple steps people can take to protect themselves.

How Can I Reduce Exposure to Excessive Heat?

The best defense against excessive heat is prevention. Air-conditioning is one of the best protective factors against heat-related illness and death.⁴ Even a few hours a day in air conditioning can greatly reduce the risk. Electric fans may provide comfort, but when temperatures are in the high 90s fans do not prevent heat-related illness.

During excessive heat events, the following prevention strategies can save lives:

- Visit air-conditioned buildings in your community if your home is not air-conditioned.
 These may include: senior centers, movie theaters, libraries, shopping malls, or designated "cooling centers."
- Take a cool shower or bath.⁵
- Drink lots of fluids. Don't wait until you are thirsty to drink. If a doctor limits your fluid intake, make sure to ask how much to drink when it's hot. Avoid beverages containing caffeine, alcohol, or large amounts of sugar. These drinks cause dehydration.
- Ask your doctor or other health care provider if the medications you take could increase your susceptibility to heat-related illness.
- Wear lightweight, light-colored, and loose-fitting clothing.
- Visit at-risk individuals at least twice a day.
 Watch for signs of heat-related illness such as hot, dry skin, confusion, hallucinations, and aggression.
- · Call 9-1-1 if medical attention is needed.

How Does Excessive Heat Affect the Body?

The body normally cools itself by increasing blood flow to the skin and perspiring. Heat-related illness and mortality occur when the body's temperature control system becomes overloaded. When this happens, perspiring may not be enough. High levels of humidity can make it even harder for the body to cool itself.

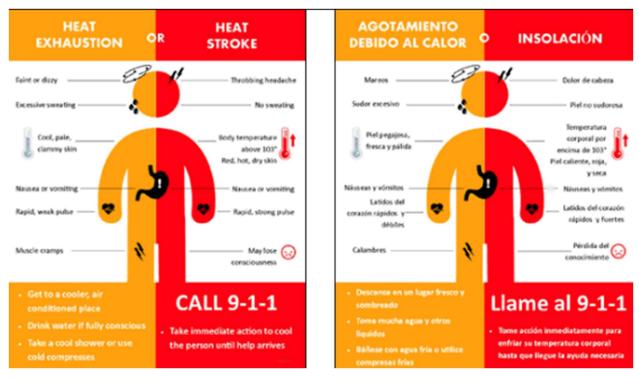
How are Excessive Heat and Heat Stroke Related?

Heat stroke is the most serious health effect of excessive heat events. It is the failure of the body's temperature control system. When the body loses its ability to cool itself, core body temperature rises rapidly. As a result, heat stroke can cause severe and permanent damage to vital organs.

Victims can be identified by skin that appears hot, dry, and red in color. Other warning signs are confusion, hallucinations, and aggression. If not treated immediately, heat stroke can result in permanent disability or death. The good news is that heat stroke can be prevented by taking the easy steps outlined on this page.



National Weather Service: Heat Related Illnesses



Source: https://www.weather.gov/safety/heat-illness

Other Resources

NY State Heat Emergency: Hot Weather Tips

https://www.health.ny.gov/environmental/emergency/weather/hot/

American Red Cross: Tips for Heat Waves

https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/heat-wave-safety.html

Department of Homeland Security: Heat Emergency Tips

https://www.ready.gov/heat