



Extreme Heat and Children's Health

The M-LEEd Center's Community Engagement Core (CEC) increases awareness and understanding of environmental health research.

Stakeholder Advocacy Board members include:

- Community Health and Social Services
- Detroit Department of Public Health
- Detroit Hispanic Development Corporation
- Detroiters Working for Environmental Justice
- Eastside Community Network
- Ecology Center
- Henry Ford Health System Michigan
- Environmental Justice Coalition
- We the People of Detroit

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Find more fact sheets, policy briefs, & multimedia at:
http://mleead.umich.edu/Coec_Resources.php

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Extreme Heat Events are Increasing in Michigan

Temperatures are rising across the globe. As a result, extreme heat events are more common and expected to increase over the next century. Extreme heat is a period of high heat and humidity with temperatures *above 90°F for at least two day.*⁵

These events can be very dangerous for communities that do not usually experience temperatures over 90°F, especially for children and elders.

The Midwest is getting hotter. Detroiters may experience as many as 65 days per summer with temperatures over 90° by the end of the century, a big increase over the current average of 13 days per summer.^{2,8}

How Can Extreme Heat Affect Children's Health?

Heat-related illnesses are common but we can prevent them. They include:

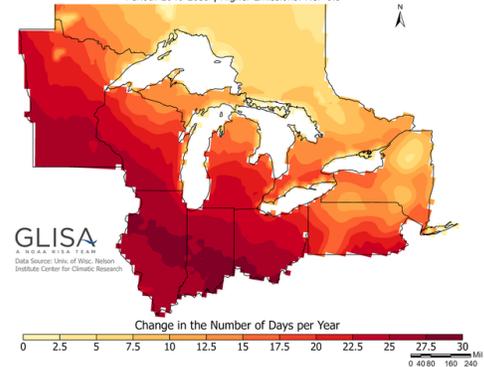
- **Dehydration** or when the body does not have enough water in the body,
- **Heat Cramps** or muscle spasms, often during exercise and sweating in high heat,
- **Heat Exhaustion** is when the body loses most of its water and salt reserves leading to an increased difficulty to cool itself, and
- **Heat Stroke** or the loss of the ability to regulate the body's temperature.

The impacts of extreme heat can also be worse for people who have existing conditions like asthma, heart disease, or diabetes.

Children are more likely than adults to experience health impacts from extreme heat. Like adults, children can experience heat-related issues when exposed to temperatures over 90° for more than 30 minutes.

Unlike adults, though, children produce more heat with activities than adults and usually sweat less, so they do not cool off as fast as adults. Also, children may not always think about taking breaks and drinking enough fluids, making them more vulnerable to heat-related illnesses.^{1,4,6}

Projected Change in the Number of Days over 90°F by Mid-Century
Period: 2040-2059 | Higher Emissions: RCP 8.5



Relative Humidity (%)	NWS Heat Index															
	Temperature (°F)															
	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity
 Caution Extreme Caution Danger Extreme Danger

The **Heat Index** is "what the temperature feels like to the human body when relative humidity is combined with the air temperature." In other words, a temperature of 90 degrees may feel like 100 or 105 degrees if it is a really humid day.⁷

How Can we Keep Children Safe During Extreme Heat?

Summertime is a time to be outside having fun—if we take extreme heat seriously!

Adults can help keep children safe when there are extreme temperatures. When summer is coming, slowly help children adjust to hot temperatures outside over a few weeks.

When temperatures reach 90°F, here are ^{3,9}
5 ways to keep children safe:



1. Never leave a child in an unsupervised parked car.
2. Dress children in light-colored, loose-fitting clothing and use sunscreen.
3. Have children drink plenty of water or drinks with electrolytes (like Pedialyte).
4. Keep children inside during the hottest part of the day, typically between 1pm and 6pm. If you need to, seek shelter in a building with AC or find the nearest cooling center to you: shorturl.at/beuvx
5. Know how to identify heat-related issues in children and how to treat them.

Heat-Related Illnesses: Keep Watch for these Symptoms ⁶

- **Dehydration**
 - Symptoms: dizzy or lightheaded, nausea, headaches, and dry and coated-looking tongue and mouth
 - Action Steps: Take a break, get to a cool environment, and drink plenty of water.
- **Heat Cramps**
 - Symptoms: Flushed, moist skin & painful cramps (likely in the legs)
 - Action Steps: Get to a cooler location, remove excess clothing, and take sips of water. Get medical help if heat cramps last for more than an hour.
- **Heat Exhaustion**
 - Symptoms: Pale moist skin, severe tiredness, fever over 100° F, nausea, vomiting, weakness, and fainting
 - Action Steps: Get to an air-conditioned place if possible, loosen or remove clothing, take a cool bath, and sip on water and sports drinks.
- **Heat Stroke**
 - Symptoms: Warm, dry skin, high fever over 104°F, rapid heart rate, nausea, vomiting, altered mental state, and seizures
 - Action Steps: **Call 911 or get the person to a hospital immediately.** Cool them down with whatever method possible until medical help arrives.

What Does This Mean For Me and My Community?

Here are some steps you can take to protect your community:

- First, take care of yourself! Stay hydrated with water. (Sugary, caffeinated, and alcoholic drinks can dehydrate.)
- Be aware of local extreme weather warnings: www.weather.gov.
- Check on loved ones and neighbors who may live alone or have health issues.
- If you can, maintain AC units. Or, place ice or cold water in front of fans. (Careful not to blow air directly on you or others. This actually dehydrates you faster!)
- Learn about local cooling centers in Detroit and find the nearest one to you

Interested and able to get involved?

- Learn about climate change and join local efforts such as:
 - Eastside Community Network's climate equity efforts,
 - Detroit City Council Green Task Force, and
 - City of Detroit's Sustainability Action agenda
- Identify local programs and resources for improving energy efficiency in your home to reduce energy usage and keep your home cooler in the summer.
- Advocate for more greenspace in your neighborhood, which can have a cooling effect.



**Find cooling centers
in Detroit**

Please see http://mleead.umich.edu/Coec_Fact_Sheets.php for the citations included in this factsheet.

The University of Michigan Lifestage Environmental Exposures and Disease Center (M-LEED) Community Engagement Core (CEC) promotes collaboration among UM environmental health researchers and communities to advance knowledge of environmental health issues that affect community members in Detroit and Southeast Michigan.

Support for this research was provided by grant P30E5017885 from the National Institute of Environmental Health Sciences, National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

