

ISK CLIMATE CHANGE & HEALTH SERIES

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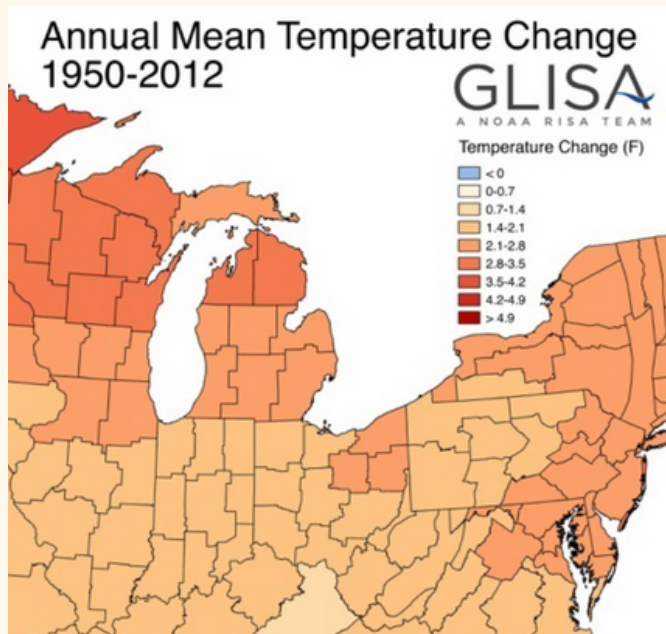
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HEAT ISSUE



Michigan is heating up

If you've lived in Michigan most of your life, my guess is you've noticed it getting warmer. In fact, as the map below shows, between 1950 and 2012, the average temperature rose between 2°F and 3.5°F depending on the region, and it is continuing to climb. While this might not seem like much, when it comes to average annual temperature, even a 2° difference can cause outlier temperatures throughout the year. For example, January 2023 was 10.1°F above normal in Michigan. While this temperature shift can also cause changes like having less snow and more rain and having far less ice cover on the Great Lakes, which have their own impacts, the most dangerous direct impacts to our health come from extreme heat during heat waves. This month, we'll talk about the direct and indirect impacts of heat on our health.



This map from NOAA shows a 2.1° - 3.5°F increase in Michigan's average annual temperature between 1950 and 2012

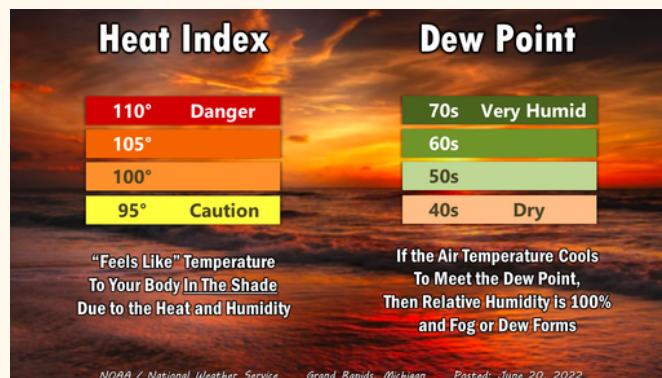
Heat-related illness

Heat-related illnesses are essentially the health impacts that come directly from exposure to extreme heat. Physically, this can include dehydration, heat stroke, heat rash, heat cramps, and heat exhaustion. Mental health can also be impacted, with studies showing links between heat and increased symptoms in individuals with anxiety, depression, and bipolar disorder; increased aggression; potential for increased domestic violence; decreased cognitive function; and increased substance use. A 2011 study even found that for every 1.8°F increase, mental health-related deaths increased by 2.2%.

While heat-related illness can affect anyone, like most climate change-related health risks, certain groups are more vulnerable, including elderly individuals, young children/infants, outdoor workers, pregnant women, individuals with disabilities, and those without housing or air conditioning (AC). In some cases, individuals who take certain medications might also be more vulnerable, as some medications can impact the body in ways that make it more

susceptible to heat-related illness. In addition, some drugs can lose or gain potency when stored at high temperatures (or in high humidity), causing them to be less effective. [Click here](#) for a great clinician resource on handling medications in the heat.

Heat can also exacerbate existing physical conditions, such as cardiovascular disease and hypertension, so individuals with pre-existing conditions also have a higher risk.



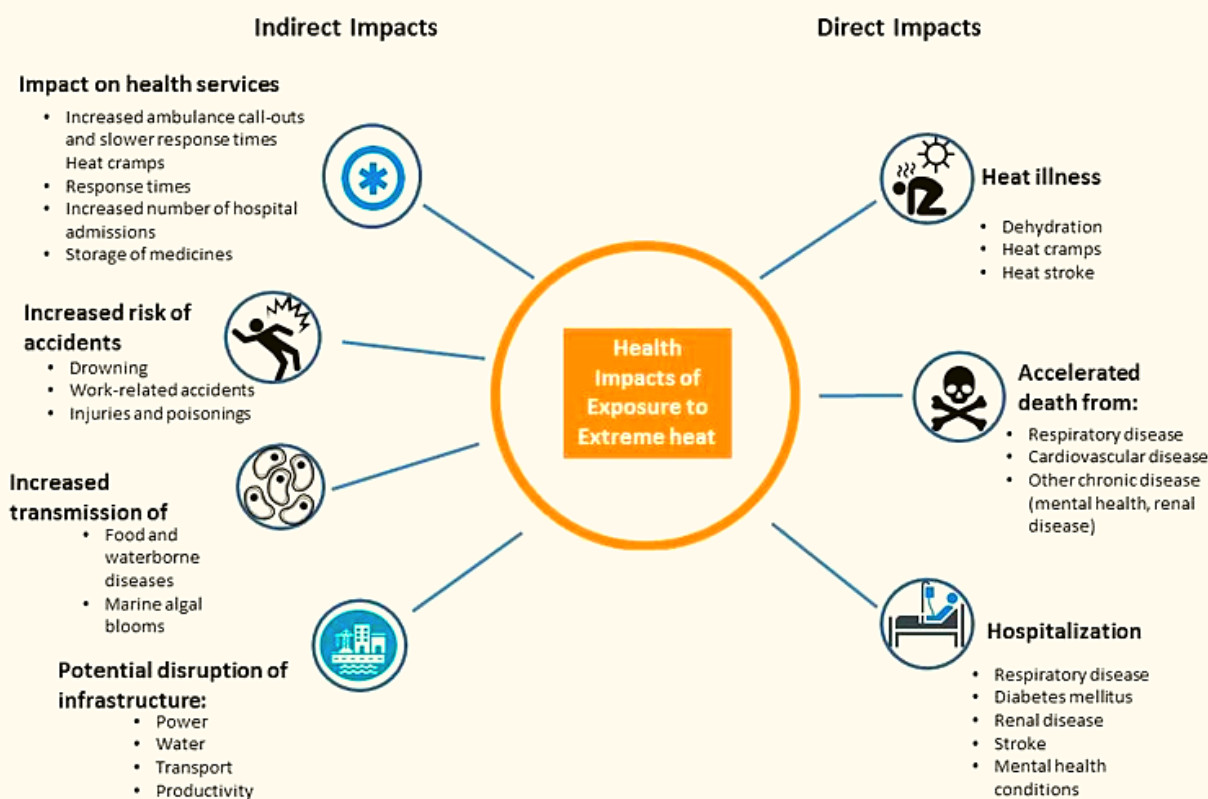
This guide from NOAA and the National Weather Service shows heat index and dew point levels to look out for when checking the weather

Indirect impacts

By contributing to decreased air quality, heat can cause more frequent and more severe allergies and asthma. As we learned in last month's issue, higher average temperatures also mean more vectors and therefore more cases of vector-borne diseases like Lyme.

When heat is high, ER visits for heat-related illness, asthma, etc. increase, as well as use of emergency MH services. This puts pressure on the healthcare system and can make it more difficult for individuals to access regular or emergency care. The potential for longer or more intense hours can also impact healthcare workers' ability to keep themselves healthy.

Economic impacts also come into play when temperatures rise. For individuals or families, higher energy use for AC and refrigeration can be costly (and further exacerbates climate change!) and premature spring warmth followed by frost can damage crops and impact livelihoods. On the state level, heat contributes to increased spending on health care, such as emergency and disease services. For example, in 2012, Michigan spent about \$8 million on Lyme-related health care costs. With less Lyme, where else could that money go?



Referring to this visual summary of direct and indirect heat impacts from the World Health Organization can help us keep heat in mind in our practice

Actions to take

Here are some things we can do personally and professionally to adapt and stay safe:

Personal	Professional
<ul style="list-style-type: none">• Keep an eye on weather forecasts to be prepared for high heat/high humidity days.• Have a plan for high heat days – what will you do differently on high heat days?• Stay hydrated – drink water throughout the day and avoid drinks containing a lot of sugar or alcohol, which can dehydrate.• Watch for signs of heat-related illness and get help for yourself or others immediately if symptoms emerge.• Try to avoid exertion outdoors during high heat afternoons; stick to mornings and evenings when temps are cooler.• Wear sunscreen to avoid sunburn, which can exacerbate heat-related illness.• Wear lightweight clothing.• Spend time in air conditioning when possible.• Keep sleeping space as cool as possible by closing curtains during the day, using a fan, or using AC.• Keep children and infants shaded and cool.	<ul style="list-style-type: none">• Check in with clients about their mental and physical health during heat waves.• Be aware of clients' vulnerabilities to heat:<ul style="list-style-type: none">◦ Is the individual an outdoor worker?◦ Does the individual have medical conditions worsened by high heat?◦ Does the individual take medications that can be impacted by high heat?◦ Does the individual lack housing or access to a cooled space?◦ Does the individual lack transportation?• Educate clients on the personal action steps they can take to keep themselves and their loved ones safe in high heat.• Educate clients about indirect effects of heat, such as increased allergy and asthma risk• Educate clients on recognizing signs and symptoms of heat-related illness• Make a plan with clients for high heat days• Encourage use of a portable, reusable water bottle

Resources

There are lots of helpful resources you can use for yourself, your loved ones, and your clients. Click the links below to explore, save, and print them!

Resources that include useful infographics:

- [Signs & Symptoms of Heat-Related Illness](#)
- [Simple tips to stay safe during extreme heat conditions](#)
- [Staying Safe in Hot Weather \(for older adults\)](#)
- [Michigan preparedness report card from States at Risk](#)

Other resources and learning materials:

- [Article on impact of heat on electrical grid](#)
- [Michigan.gov resource on extreme heat](#)
- [Wildfires and extreme heat burning ever closer to Michigan](#)

Again...Don't forget the doggos!

Dogs and other pets are also at risk for heat-related illnesses...and most of them are stuck in fur sweaters all year round! Be sure your pets have plenty of water in familiar places around the house and avoid leaving them outside for long periods of time or in the car during high heat days. Look out for signs like heavy panting, excessive drooling, difficulty breathing, vomiting, lethargy, and lack of coordination, which could indicate heatstroke.



Let's talk

This month, talk to your colleagues about heat in Michigan:

- Do they have any tips for staying safe?
- What kinds of temperature differences have they noticed in Michigan year-round?
- Do they engage with clients about heat waves or heat-related illness?
- Have they noticed signs of heat-related illness in clients?