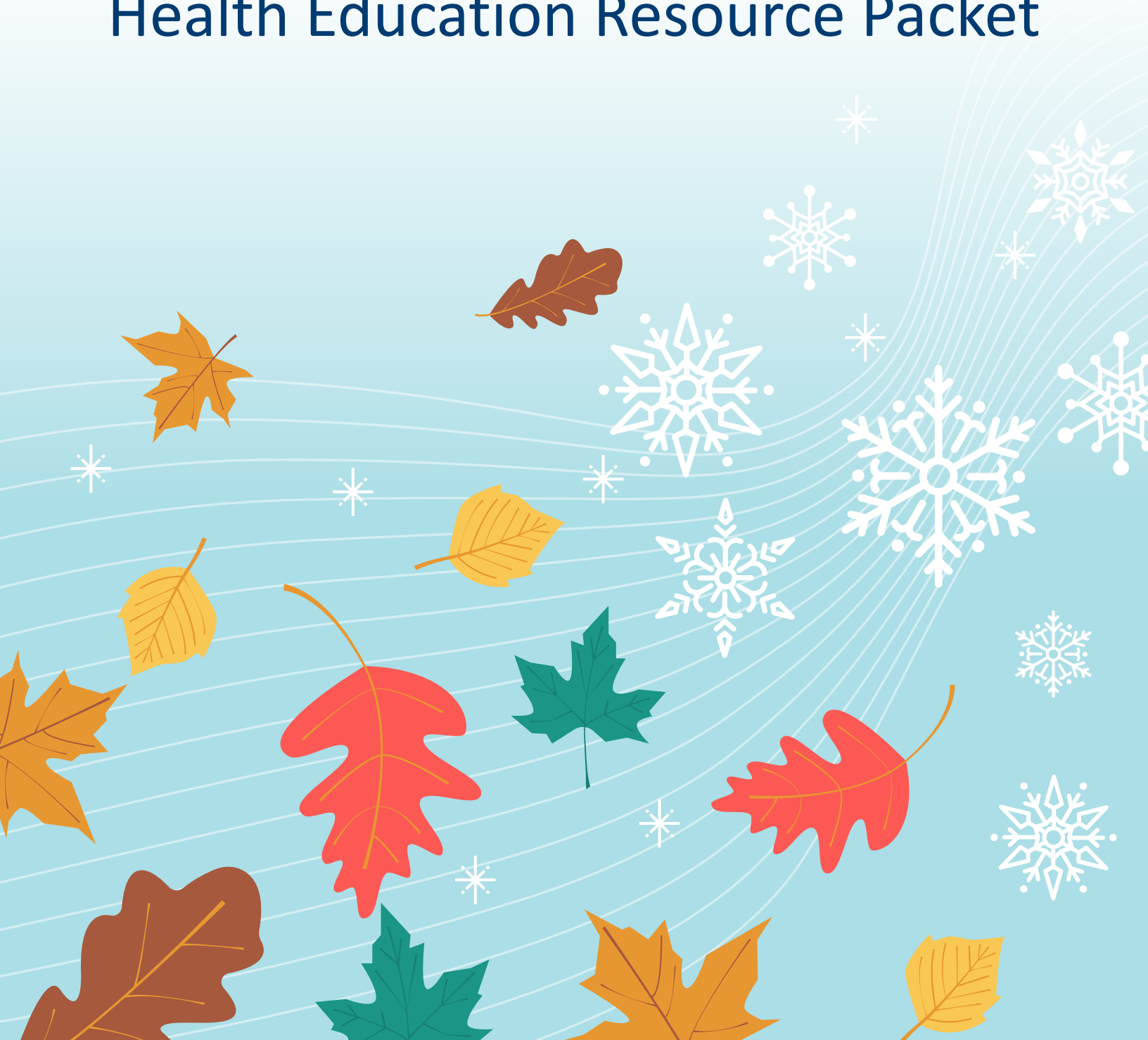




Environmental Health Bureau
Michigan Climate and
Health Adaptation Program

Fall and Winter Climate Health Education Resource Packet



Fall and Winter Climate Health Education Resource Packet

The [Michigan Climate and Health Adaptation Program](#) (MICHAP) supports a climate-resilient public health system by investigating climate-driven health risks, identifying information for decision-making, and collaboratively implementing climate adaptation strategies.

This resource packet explains the climate impacts to health in the fall and winter months and includes fact sheets from MICHAP and other Michigan Department of Health and Human Services (MDHHS) partners on how to protect health and safety.



To receive email updates from the Michigan Climate and Health Adaptation Program, [subscribe at this link](https://bit.ly/MiCHAP-news) (URL: bit.ly/MiCHAP-news).

How to use this resource packet

- Audience:** This resource packet is for everyone. However, it was created to help local governments and nonprofits educate the public on fall and winter climate health topics.
- Purpose:** This resource packet is a collection of information from Michigan Department of Health and Human Services (MDHHS) and State of Michigan partners about seasonal climate hazards and their potential health impacts. Local governments and nonprofits can use these materials to communicate climate and health issues to their audiences.
- Pages 2-3 provide an overview of the impacts of climate change on health and highlight some further resources for learning more.
 - Pages 4-6 contain brief descriptions of fact sheets that address specific climate health hazards. They can be shared widely, either digitally or by requesting hard copies for distribution from MDHHS by calling 800-648-6942.
 - MICHAP Cold Health and Safety Fact Sheet 5
 - MiTracking Carbon Monoxide Poisoning Fact Sheet 5
 - 2023 Michigan Lyme Disease Risk Map..... 5
 - Tick Bite Prevention..... 6
 - MICHAP Program Fact Sheet 6
 - Pages 7-14 provide social media posts that address a number of seasonal health concerns and advise the public how to prepare in the event of an oncoming winter storm or period of extreme cold.

What does climate change mean for fall and winter in Michigan?

Since 1950, the Great Lakes region's annual average temperatures increased by 2.3°F and annual precipitation increased by 14%.¹ The fall and winter seasons are no exception; both seasons have experienced an increase in the average seasonal temperature.² Warmer fall weather leads to a delayed first frost.³ Warmer winter temperatures reduce ice cover on the Great Lakes.⁴

Overall, winter precipitation is expected to increase, although some areas could see a transition from snow to other forms of precipitation such as rain, freezing rain, and sleet.^{4, 5}

While temperatures are trending warmer, periods of extreme cold and snow can still occur. Polar vortexes and winter storms could be intensifying due to climate change, although the science remains inconclusive.⁶

How does the changing climate affect fall and winter health and safety?

Ticks can stay active longer into the fall because of warmer temperatures. In Michigan, the blacklegged tick that transmits Lyme disease is active when outdoor temperatures are above 40°F. ([MDHHS Emerging, Zoonotic, and Infectious Disease](#))

Carbon monoxide (CO) poisoning can occur from exposure to unvented space heaters, malfunctioning furnaces, gas or fuel-burning appliances, or generators when improperly used to heat a home during cold weather or power outages.

Extreme cold temperatures can cause frostbite and hypothermia.

Winter storms create slick conditions, leading to slips and falls and dangerous roads. ([Michigan Prepares](#))

Mental health can be negatively impacted by climate change. The increasing frequency of extreme weather events means that more people could experience loss and trauma. Environmental changes that impact livelihoods, outdoor activities, and cultural traditions can also worsen mental health. ([CDC Climate Effects on Health](#))

How to prepare:



Know how to [prevent tick bites](#) when outdoors.



Install carbon monoxide alarms in your home and check the batteries regularly.

Learn about [safely using gas or other fuel-burning appliances](#) indoors.



Prepare an [emergency kit](#) for your home and car.



Sign up to receive local emergency alerts or alerts through the [FEMA app](#).



[Weatherize your home](#) to increase indoor thermal comfort.



Know where warming centers are located in the event of extreme weather. Call 211, visit [Mi211.org](#) or check your local county emergency management website.



If you or loved ones need mental or emotional support, reach out to the [Substance Abuse and Mental Health Services Administration](#) counseling line at 1-800-662-4357.

Additional tools and resources

[CDC Environmental Justice Index](#)

This index uses publicly available data to rank the health impacts of environmental injustice at the census tract level. It is a useful tool to review high level environmental health, population health and demographic indicators, and can help to prioritize areas that may require action to improve health equity.

[Climate Mapping for Resilience and Adaptation](#)

This map from the U.S. Climate Resilience Toolkit provides real-time statistics and maps on where people, property, and infrastructure may be exposed to hazards.

[HHS emPOWER Map - Medicare Electricity-Dependent Populations](#)

This map “displays the total number of at-risk electricity-dependent Medicare beneficiaries in a geographic area (i.e., state, territory, county or ZIP Code).” The map can help identify areas where there are populations who are more at risk during power outages because of their dependence on medical and assistive electronic devices. This information can inform emergency preparedness, response, recovery and public health activities.

[Michigan Environmental Public Health Tracking \(MiTracking\)](#)

The MiTracking data portal allows users to explore county-level data related to extreme heat, extreme precipitation, ticks, air quality, and other environmental, health, and population indicators through tables, charts and maps.

The [MDHHS Michigan Prepares](#) page and Michigan State Police [MI-Ready](#) page have information on winter weather and extreme cold.

References

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2. Climate Change Indicators: Seasonal Temperature. Environmental Protection Agency Climate Change Indicators. Updated August 1, 2022. <https://www.epa.gov/climate-indicators/climate-change-indicators-seasonal-temperature>
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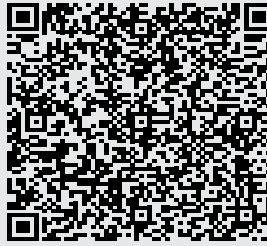
Fall and Winter Climate and Health Fact Sheets

The following section contains thumbnails and short descriptions of each fact sheet. To access the full fact sheet online, click on the link or use your phone's camera to scan the QR code.

Cold Health and Safety

This fact sheet explains some of the health risks associated with cold weather and ways you can protect yourself and your family.

bit.ly/Cold-Health-Michigan



Salud Y seguridad en el Frío

Esta hoja informativa explica algunos de los riesgos para la salud asociados con el clima frío y las formas en que puede protegerse a usted y a su familia.

bit.ly/Spanish-Cold-Health



COLD HEALTH AND SAFETY

MICHIGAN WINTER WEATHER

This fact sheet explains some of the health risks associated with cold weather and ways you can protect yourself and your family. Read on to learn about hypothermia, frostbite, carbon monoxide poisoning, and falls.

Health Risks of Cold Weather

Hypothermia is a sickness that can happen when your body loses heat faster than it can produce it. Your body temperature drops so low that your body loses the ability to function. People are at risk of hypothermia in very cold weather, or even in cool weather if their skin is wet from water or sweating.

Signs of hypothermia include shivering, slurred speech, confusion, fumbling hands, sleepiness, and unconsciousness. Babies look bright red or have very cold skin. They may seem fidgety or very sleepy.

Frostbite is a type of injury that is caused when skin freezes because it is exposed to extremely cold temperatures. Frostbite can cause permanent damage to the body. In severe cases, the skin tissue may be so damaged that the affected body part needs to be removed (amputated).

Stages of Frostbite

Frostnip: Mild frostbite. Skin may appear red and feel cold or numb.	
Superficial frostbite: Affected areas feel warm and tingly. Red skin turns white or pale.	
Deep frostbite: Skin turns white or bluish gray. Affected area will not warm and may feel painful. Joints and muscles may no longer function.	

Note: Changes in color of affected area may be difficult to see on darker skin.

Prevent Hypothermia and Frostbite

- Wear a hat or headband that covers your ears.
- Limit your time outdoors.
- Avoid alcohol and drugs.
- Dress in several layers of loose, warm clothing.
- Wear mittens with liners instead of gloves.
- Wear socks and liners that provide insulation and move sweat from your skin.

Who is most at risk for hypothermia and frostbite?

- People with poor blood circulation
- People who are not dressed warmly enough
- Older adults, especially those who do not have adequate food, clothing, or heating
- Babies sleeping in cold rooms
- People who stay outdoors for long periods of time
- People using drugs or alcohol

MICHIGAN CLIMATE AND HEALTH ADAPTATION PROGRAM

DE 1

Carbon Monoxide (CO) Poisoning

This fact sheet explains why CO poisoning happens and how to prevent it.

bit.ly/CO-PoisoningFacts



miTracking

Michigan Environmental Public Health Tracking

Carbon Monoxide Poisoning

What is Carbon Monoxide (CO)?

You can't see, taste or smell carbon monoxide (CO). It can be deadly when you breathe it in. CO is often called the "silent killer." Carbon monoxide is a gas that forms whenever fuel is burned.

Where does CO come from?

Most CO poisonings take place at home. Sources that are not properly cared for or vented cause most CO poisonings. The most common causes of Michigan deaths are faulty furnaces and water heaters. Below are some other sources of CO:

CO in Michigan

145 people died and 3,868 people sought medical treatment for CO poisoning between 2009 and 2013 in Michigan according to numbers collected by MDHHS.

Who is at risk?

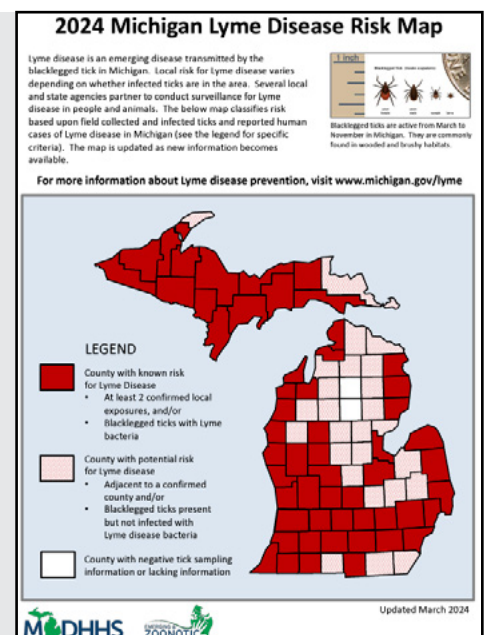
Anyone can be at risk for carbon monoxide poisoning. Those who are most at risk of harm to their health are:

- Fetuses and infants
- Pregnant women
- The elderly
- People with heart disease, lung disease, or anemia

Map: Michigan Lyme Disease Risk

This map shows Michigan counties with known and potential risk for Lyme disease.

bit.ly/2024-Lyme-Map



Tick Bite Prevention

This fact sheet is from the report, "Michigan Trends in Tickborne Disease, 2016-2020" and provides information on how to prevent and check for ticks.

bit.ly/Tick-bite-prev



Tick Bite Prevention

Be aware of your surroundings!

- People and pets most often encounter ticks in shady, moist wooded and grassy areas and fields near wooded areas.
- Ticks are most active in Michigan April-September, but can be active when outdoor temperatures are at least 40°F.
- Ticks are rarely encountered indoors unless brought inside on a person's clothing or by a pet.

Take precautions before visiting areas with ticks

- Apply EPA-registered insect repellent to skin or clothing according to the label's instructions.
- Walk in the center of trails and avoid walking in areas with tall grass and brush.
- Check yourself and pets all over for ticks after spending time outdoors.
- Talk to your vet about tick bite prevention products for your pets.

Tick Removal

1. With fine-tipped tweezers or a tick removal key, grasp the tick as close to the skin as possible.
2. Slowly and firmly pull the tick straight out. Do not twist, spin, or jerk the tick.
 - The tick's mouthparts may remain in the skin. If the mouthparts cannot be removed easily, leave the bite site alone to heal.
3. Wash the bite site and your hands with soap and water, then apply an antiseptic to the bite site.
4. Save the tick in a small, clean sealable container for later identification.

Check your clothing and body for ticks after being outdoors in grassy, brushy, or wooded areas where ticks live!

CHECK THESE PARTS OF YOUR BODY AND YOUR CHILD'S BODY FOR TICKS:

- IN AND AROUND THE HAIR
- UNDER THE ARMS
- INSIDE BELLY BUTTON
- BETWEEN THE LEGS
- AROUND THE NECK
- BACK OF THE KNEES

WHERE TO CHECK YOUR PET FOR TICKS

- IN AND AROUND THE EARS
- AROUND THE EYELIDS
- UNDER THE COLLAR
- UNDER THE FRONT LEGS
- BETWEEN THE BACK LEGS
- BETWEEN THE TOES
- AROUND THE TAIL

↑ Conduct a full-body check for ticks after spending time outdoors. Ticks can attach anywhere on the body but tend to prefer the locations indicated above.

↑ With tweezers or tick removal key, grab an attached tick as close to your skin as possible, then slowly and firmly pull straight up to remove the tick.

Climate Change in Michigan and the Public Health Response

This fact sheet highlights some of the ways that Michigan's climate is changing and shows how those changes might affect human health.

bit.ly/MiCHAP-Facts



Cambio Climático en Michigan y la Respuesta de Salud Pública

Esta hoja informativa destaca algunas de las principales formas en las que el clima en Michigan está cambiando y muestra cómo esos cambios pueden afectar la salud.

bit.ly/MiCHAP-hoja-informativa



Climate Change in Michigan and the Public Health Response

Prepared by the Michigan Climate and Health Adaptation Program (MiCHAP)

This fact sheet highlights some of the major ways that Michigan's climate is changing, shows how those changes might affect human health, and outlines how MiCHAP is working to prepare the public health system to adapt.

The climate is changing in the Great Lakes Region

Between 1951 and 2017:

The average annual temperature has increased by 2.3 °F.



The total annual precipitation (snow, ice, rain) has increased by 14%.



Source: GLISA, 2019. glisa.umich.edu/climate-change-in-the-great-lakes-region-references/

How can climate change harm health?

Increasing temperatures and rising amounts of precipitation can affect human health in different ways.



Heat Harm: Heat strains the heart and lungs and can increase the risk of dying for people with cardiovascular disease. Heat can worsen air quality, which increases the risk of respiratory illness.



Spread of Disease: Warmer winters and more frost-free days allow disease-carrying insects and rodents to survive and expand their range.



Threats to Water Quality: More frequent heavy rain events can increase flooding and stress the infrastructure that provides safe drinking water. Warming water temperatures, fertilizer runoff and sewer overflows pollute rivers and lakes, and can cause harmful algal blooms.

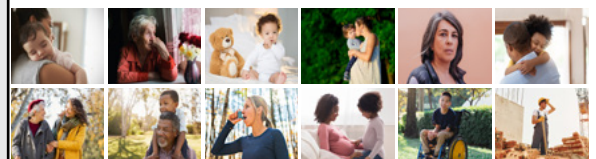


Disruptions to Well-Being: Living through natural disasters can cause both short-term and long-term impacts on mental health. Uncertainty about the future can cause anxiety and depression.

Who is most likely to be harmed by climate change?

Impacts from climate change can affect the health of anyone in our community, but some groups of people are at greater risk. The people most likely to be harmed are:

- Children
- Pregnant people
- People with chronic illnesses and allergies
- People who are disabled
- Outdoor workers
- Older adults
- People living in poverty



Social Media Posts

The following social media posts have been designed to communicate fall- and winter-related health and safety information to Michigan residents. Topics covered include:

- Extreme Cold
- Carbon Monoxide
- Ticks

Posts are organized by social media platform. View and save images by clicking the icon/image. The image will open in a new window where you can then download and save to your files. You can then open your social media platform and select the saved image to upload for posting. Copy and paste the post content to share along with the corresponding image.

Nextdoor and Facebook

It's going to get COLD outside in the next few days! MDHHS recommends staying safe by limiting your time outside. When you do go outside, protect yourself by dressing warmly and appropriately.

For more information about how to stay safe during cold weather, take a look at [MDHHS's Cold Health and Safety Fact Sheet](#).



When it's cold outside, families and individuals may need extra support with food, housing, or paying bills. Here are four ways to get help during cold weather:

- Call 211 or visit [Mi211.org](https://www.mi211.org) to connect with help right in your community.
- Visit [MDHHS Heat and Utilities](#) if your heating or electric service has been shut off.
- Visit [MDHHS Energy and Weatherization](#) if you need help paying for energy and weatherization costs.
- Read through the [Cold Health and Safety Fact Sheet](#) for more information about how to stay safe during cold weather.



It is important to take care of your emotional health when coping with extreme weather. Caring for your own emotional well-being will help you to help others and to think clearly when reacting to dangerous conditions and emergencies. When a stressful event happens:

- Try to eat healthy food and get enough sleep.
- Share your feelings with friends and family members.
- Stay informed. Many communities have emergency notification systems that you can sign up for.
- Help children by sharing age-appropriate information with them, reassuring them, addressing rumors, and answering their questions.

Visit the CDC's page on [Coping with Disaster or Trauma](#) for more resources.



Did you know the black-legged tick must be attached for at least 24 hours in most cases before it can transmit Lyme disease?

Avoiding tick bites and quick tick removal are the best ways to prevent Lyme disease.

Learn more about tick bite prevention in Michigan's great outdoors at bit.ly/MichTickPrevention.

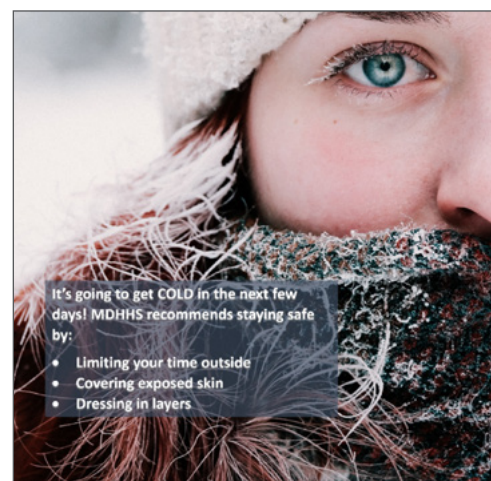


Facebook, Twitter, or Nextdoor

When temperatures drop, some families need support with food, housing, or bills. Michigan211 can connect people to help in their communities!



It's going to get COLD in the next few days! The [MDHHS's Cold Health and Safety Fact Sheet](#) provides information about how to stay safe during cold weather.

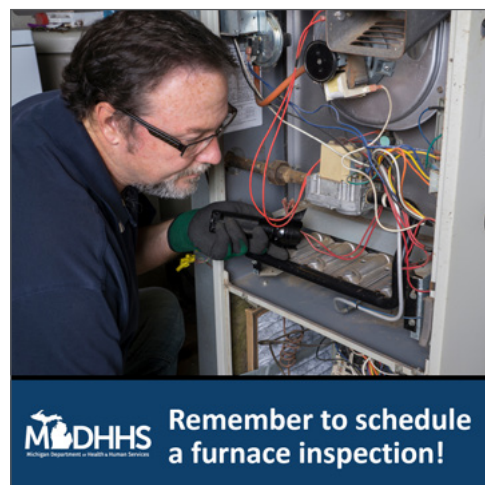


Carbon monoxide (CO) alarms save lives! We see more people get sick from carbon monoxide as temperatures drop and furnaces fail. Take a minute to check or replace the batteries in your alarm. Learn more about CO at bit.ly/COMiTrack. #MiTracking



Colder weather will be here before you know it! Schedule a furnace inspection this fall to make sure you're ready.

A professional can make sure the furnace is operating properly. Always make sure your outside vent is clear of snow and other debris. Learn more at #MiTracking bit.ly/COMiTrack.



Daylight Saving Time ends this weekend, which means it's time to replace those batteries in your carbon monoxide (CO) detector! Learn more about CO at bit.ly/COMiTrack. #MiTracking



You remembered to set your clocks back last weekend, but did you remember to test your carbon monoxide detector, too?

Don't have a detector? You can buy them for about \$20. Learn more at bit.ly/COMiTrack. #MiTracking



Not all cold weather health hazards happen outdoors! Many carbon monoxide (CO) poisonings occur when people:

- Try to heat an indoor space with the wrong heating device.
- Place a generator too close to their home.

You can't see or smell carbon monoxide! To learn how to avoid CO poisoning, visit the [MDHHS page on CO poisoning](#).



You may be surprised at how many emergency department visits and hospitalizations are caused by carbon monoxide (CO) poisoning! Explore the data at bit.ly/MiTrackingDPCO. #MiTracking



You are all set for the holidays, but did you forget a working carbon monoxide detector? Keep your family safe! Make sure to have at least one on every floor of your home. Learn more about CO at bit.ly/COMiTrack. #MiTracking



Need a last-minute gift idea? Carbon monoxide (CO) detectors run about \$20 and can save lives! Learn more about CO at bit.ly/COMiTrack. #MiTracking



Found an attached tick? Here's what to do.

The best way to remove a tick is to:

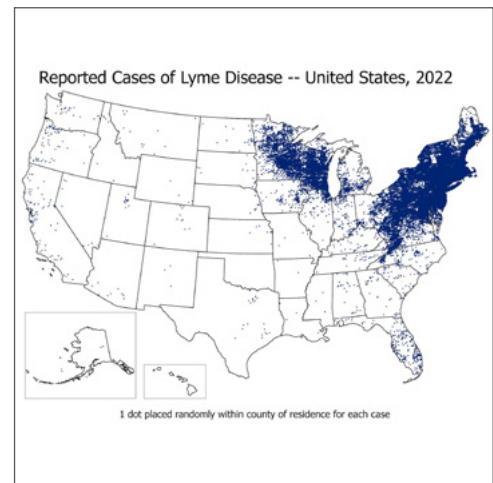
1. Use fine-tipped tweezers.
2. Grab the tick as close to your skin as possible.
3. Slowly pull straight up with steady, even pressure.
4. Wash the bite and your hands with soap and water.

For detailed tick removal instructions and prevention information go to bit.ly/MichTickPrevention.

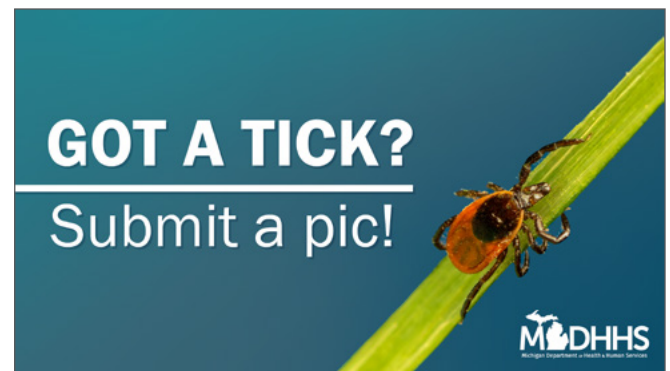


Nearly 95% of U.S. Lyme disease cases occur in just 14 states. Michigan is one of those states.

Learn more about Michigan Lyme disease at bit.ly/EZIDMILyme.



Need help identifying a Michigan tick? Submit a picture for identification. Learn more at bit.ly/MIGotATick.



This autumn, keep your family safe from the threat of ticks. Learn simple ways to prevent bites and avoid Lyme disease.

Learn more about tick bite prevention in Michigan's great outdoors at bit.ly/MichTickPrevention.

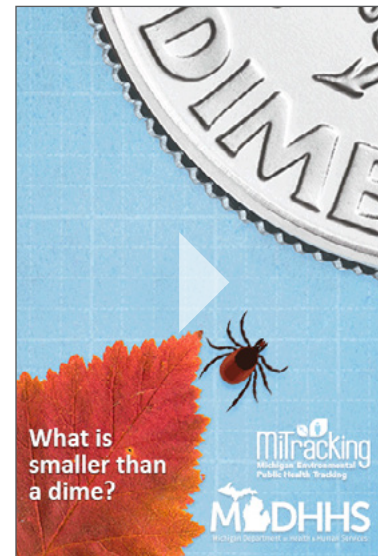


Michigan's forests and fields are full of beauty, but maybe some ticks, too. Protect yourself and your four-legged companion this season.

Learn more about tick bite prevention in Michigan's great outdoors at bit.ly/MichTickPrevention.



Ticks may be small, but they are a growing concern in Michigan. Learn how to protect yourself and squash the threat of Lyme and other tick-related diseases. Go to bit.ly/MichTickPrevention.



Climate change leads to more frequent and severe extreme weather events. Knowing what that means for your community can reduce health impacts. Explore climate change data at bit.ly/MiTrackingDPcc. #MiTracking



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