



**Environmental Health Bureau**  
**Michigan Climate and**  
**Health Adaptation Program**

# Spring Climate and Health Education Resource Packet



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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 Spring Climate Health Education packet explains the impacts of climate change on health in the spring months and includes fact sheets about 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](https://bit.ly/MiCHAP-news)).

## How to use this resource packet

**Audience:** This resource packet is for everyone. It was created to help local governments and nonprofits educate the public on spring 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.

- Pages 2-3 provide an overview of the impacts of climate change on health.
- Pages 4-7 contain brief descriptions of fact sheets that address specific climate health hazards. They can be shared widely, either digitally or by requesting hard copies from MDHHS by calling 800-648-6942.
  - Preparing For Floods: Manage Stress and Increase Safety.
  - Staying Safe During a Flood.
  - Staying Safe After a Flood.
  - Links Between Climate Change and Ticks Infographic.
  - Tick Bite Prevention.
  - 2021 Michigan Lyme Disease Map.
  - MiTracking Carbon Monoxide Information.
  - MiCHAP Brochure.
  - Drinking Water Well Maintenance (for private water wells).
- Pages 8-17 provide social media posts about seasonal health concerns and how to prepare for a flood.

# What does climate change mean for spring in Michigan?

Since 1950, the Great Lakes region's annual average temperatures increased by 2.3°F and annual precipitation increased by 14%.<sup>1</sup> Spring temperatures are trending warmer, and the spring thaw is occurring earlier, leading to a longer period of frost-free days.

Spring precipitation is increasing, specifically the frequency of storms with heavy rainfall. Heavy rain during the seasonal snowmelt could increase the risk of flooding because the soil is more saturated than it is during drier, hotter months.<sup>2</sup>

Overall, our changing climate means springtime in Michigan could be warmer and wetter. These changes can impact health and safety. The table below shows some springtime health and safety issues and how to prepare.

## How does the changing climate affect spring health and safety?

**Ticks**, which are most active in the spring and fall, carry disease that can sicken both humans and domestic animals. Warmer temperatures mean earlier springs. Earlier springs lengthen the period when ticks are active.

**Carbon monoxide (CO) poisoning** can happen when people improperly use generators during power outages. Unvented space heaters, malfunctioning furnaces and fuel-burning appliances can also cause CO poisoning.

**Flooding** can occur after heavy rainfall. During a flood, physical safety in floodwaters is the primary concern. After a flood, waterborne disease outbreaks can occur and mold can develop in flooded buildings. Mold and damp indoor environments can cause problems with asthma and other respiratory issues.

**Pollen** can cause allergies and trigger asthma attacks for some individuals with asthma. Climate change causes some plants to produce pollen earlier and in larger quantities.

## How to prepare:



Prevent tick bites when outdoors by wearing long sleeves and pants. Use repellent with 20% DEET, picaridin, IR3535, Oil of Lemon Eucalyptus (OLE), para-menthane-diol (PMD), or 2-undecanone.



Avoid wooded and brushy areas with high grass. Walk in the center of trails.



Learn how to safely remove attached ticks. (See fact sheet below.)



The webpage, [Michigan.gov/EmergingDiseases](https://Michigan.gov/EmergingDiseases), provides more information about vector-borne illness in Michigan.



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



Learn how to prepare for a flood, stay safe during a flood and protect your health when you return home after a flood.



Offer extra support to other people who may need it.



Make a plan to ensure the safety of your pets.



If pollen levels are high, consider spending less time outdoors.



Don't touch your eyes while you are outside.



After being outdoors, shower and wash your clothes to remove pollen.



Keep your windows closed during pollen season and consider using air filters indoors.

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



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



It can be helpful to share worries and fears with trusted friends, a therapist or a support group.

## 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 of 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 search Michigan data on environmental topics, health conditions and population characteristics. Users can create tables, charts and maps on these topics. For example, you could use this portal to look up historic data on extreme precipitation or ticks in your county.

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



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](https://bit.ly/MiCHAP-news)).

## References

1. Great Lakes Integrated Sciences & Assessments (GLISA), 2022, Climate Change in the Great Lakes Region updated to 2021 for MICHAP. <https://glisa.umich.edu/climate-change-in-the-great-lakes-region-references/>.
2. PWilson, A.B., J.M. Baker, E.A. Ainsworth, J. Andresen, J.A. Austin, J.S. Dukes, E. Gibbons, B.O. Hoppe, O.E. LeDee, J. Noel, H.A. Roop, S.A. Smith, D.P. Today, R. Wolf, and J.D. Wood, 2023: Ch. 24. Midwest. In: Fifth National Climate Assessment. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart, and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA. <https://doi.org/10.7930/NCA5.2023.CH24>

# Spring 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.

## Preparing For Floods: Manage Stress and Increase Safety

Flooding is becoming more common in Michigan. This fact sheet provides information that can help individuals, families and communities prepare for flooding. Good preparation can help people to cope with and recover from flooding events.

The [Preparing for Floods](#) fact sheet can be accessed on the MICHAP webpage.

(URL: [bit.ly/Prepare-Floods](http://bit.ly/Prepare-Floods))



### PREPARING FOR FLOODS: MANAGE STRESS AND INCREASE SAFETY

Climate change is increasing the risk of flooding in Michigan. Heavy rainstorms are becoming more common and annual precipitation (snow, rain, ice) is likely to increase. <sup>1</sup> Preparing for these events can help individuals, families, and communities to better cope with, and recover from, flooding. Two other documents provide more information about how to stay safe during and after a flood:

- [Staying Safe During a Flood \(URL: xxx\)](#)
- [Staying Safe After a Flood \(URL: xxxx\)](#)

**Extreme weather events and stress**

People affected by flooding often experience high levels of stress and anxiety. Stress and anxiety can last a short time or continue for months or years after a flood. Anxiety brought on by floods and other effects of climate change can lead to long-term depression, post-traumatic stress disorder, and rises in aggressive behavior and domestic violence.<sup>2</sup>

Preparing in advance of an extreme weather event can help to protect physical safety and reduce stress and anxiety. This document provides basic information on how to prepare for floods to get yourself, your family, and your community a better sense of security.

**Who is most at-risk during a flood?**

Some people may be less able to cope with or bounce back from a flood. Planning how to help those who will need extra support before a flood happens can reduce anxiety and stress. People who are more at risk include:

- People over 65.
- Infants and children.
- Pregnant and postpartum people.
- People with existing health conditions or disabilities.
- Low-income individuals and families.
- People who live alone.
- People without strong social networks.
- People with mental health conditions.
- People with limited English proficiency and some immigrant groups.
- Those living in geographically isolated or under-resourced areas.

#### Help Others

Know how you'll help people and pets who normally rely on you.

1

## Staying Safe During a Flood

This fact sheet explains some of the health risks during a flood. It also suggests ways to protect the health of individuals, their families and communities.

The [Stay Safe During a Flood](#) fact sheet can be accessed on the MICHAP webpage.

(URL: [bit.ly/During-Floods](http://bit.ly/During-Floods))



### STAYING SAFE DURING A FLOOD

Climate change is increasing the risk of flooding in Michigan. Heavy rainstorms are becoming more common, and annual precipitation (snow, rain, ice) is likely to increase.<sup>1</sup> This fact sheet explains some of the health risks associated with flooding. It also suggests ways you can protect yourself and your family during a flood.

This is the second fact sheet in the 'Flooding and Safety' series. The other two are:

- [Preparing for Floods: Manage Stress and Increase Safety \(URL: xxx\)](#)
- [Staying Safe After a Flood \(URL: xxxx\)](#)

**Avoid floodwaters to protect yourself and your family from injury and sickness**

Moving floodwaters is a risk for everyone. Six inches of moving water can make you fall, and is enough water to cause you to lose control of your car. Every year, more deaths occur because of flooding than any other hazard related to thunderstorms.<sup>2</sup> Floodwaters are dangerous even to people who know how to swim well, and shallow standing water is dangerous for small children.

In addition to drowning, exposure to floodwaters can result in:

- Wound infections and skin rashes.
- Tetanus.
- Intestinal illnesses and diarrhea caused by E. coli and Salmonella.
- Displaced animals, insects, and reptiles, which may bite.

**You never know what's hidden or floating in floodwaters.**

**Floodwaters or standing waters contain many things that may harm you.**

Learn more about possible hazards at the following Center for Disease Control's (CDC) webpages:

- [Chemical hazards \(URL: CDC.gov/Disasters/Chemicals.html\)](#)
- [Electrical hazards \(URL: CDC.gov/Disasters/Electrical.html\)](#)

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## Staying Safe After a Flood

This fact sheet explains health risks after a flood and ways to protect the health of individuals, their families and communities during the recovery process.

The [Stay Safe After Floods](#) fact sheet can be accessed on the MICHAP webpage.

(URL: [bit.ly/After-Floods](http://bit.ly/After-Floods))



### STAYING SAFE AFTER A FLOOD

Floods can create conditions that are harmful to both your physical and mental health. This fact sheet explains health risks after a flood and ways you can protect the health of your family and community during the recovery process.

This is the third fact sheet in the 'Flooding and Safety' series. The other two are:

- [Preparing for Floods: Manage Stress and Increase Safety \(URL: xxx\)](#)
- [Staying Safe During a Flood \(URL:xxxx\)](#)

Flood-related Hazard	Floodwaters	Damaged or flooded drinking water source	Power outages
<b>Common threats to health, and safety after a flood</b>	<ul style="list-style-type: none"> <li>• Hidden dangers, such as human and animal waste, trash, toxic chemicals, hazardous waste, downed power lines, and other debris.</li> <li>• Drowning when trying to walk or swim through floodwaters.</li> <li>• Flooded roadways cause car crashes or sweep cars away.</li> </ul>	<ul style="list-style-type: none"> <li>• Contamination from damaged public water supplies and private residential wells.</li> <li>• Polluted drinking water supplies that cause diarrhea and other kinds of sickness.</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon monoxide poisoning from improper generator use.</li> </ul>
<b>What to do to stay safe</b>	<ul style="list-style-type: none"> <li>• Stay out of floodwaters.</li> <li>• If you must wade through or touch floodwaters, wash with soap and clean water as soon as possible.</li> <li>• Take care of wounds as soon as possible.</li> <li>• Do not drive into floodwaters. Turn around, don't drown!</li> </ul>	<ul style="list-style-type: none"> <li>• Test private wells. Visit <a href="#">MDHS, State's Office for more information about testing in Michigan (URL: bit.ly/MDHSWaterTest)</a>.</li> <li>• Follow guidance at <a href="#">Disinfect, Wash, After a Disaster (URL: bit.ly/Disinfect-Wells)</a>.</li> <li>• If on city water, check for boil water advisories.</li> <li>• Do not drink floodwater, or use it to wash dishes, brush teeth, or wash and prepare food. Drink clean, safe water.</li> </ul>	<ul style="list-style-type: none"> <li>• Never use a generator inside your home or garage.</li> <li>• Generators should be at least 20 feet from any door, window, or vent.</li> </ul>

#### Help Others

Check in on elderly neighbors and people that may need help cleaning up.

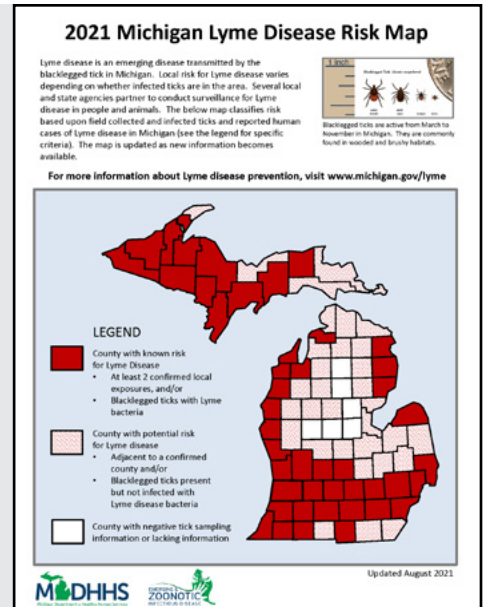
Those who rely on electricity to refrigerate medication or for medical equipment may also need help.

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## Map: Michigan Lyme Disease Risk

[This Michigan Lyme Disease Map](#) shows Michigan counties with known and potential risk for Lyme disease.

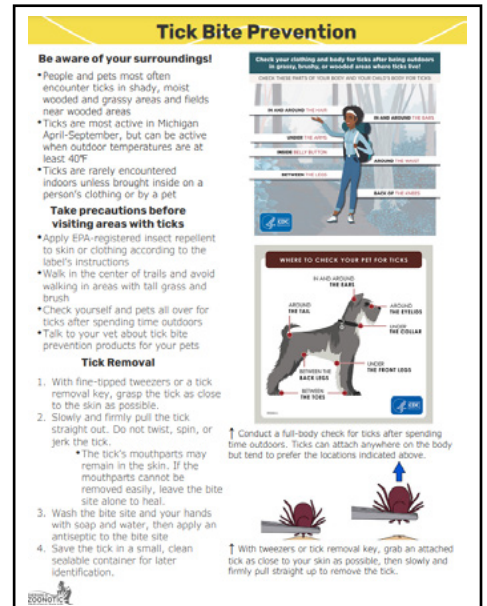
(URL: [bit.ly/2021-Lyme-Michigan](http://bit.ly/2021-Lyme-Michigan))



## Tick Bite Prevention

[This tick bite prevention fact sheet](#) is from the report, “Michigan Trends in Tickborne Disease, 2016-2020,” and provides information on how to prevent and check for ticks.

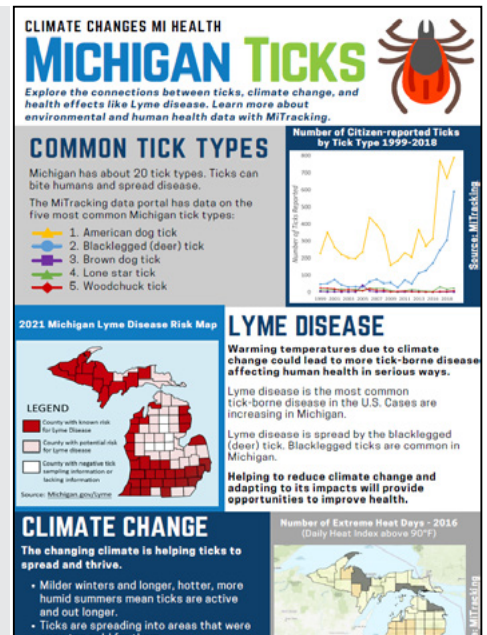
(URL: [bit.ly/Tick-bite-prev](http://bit.ly/Tick-bite-prev))



## Links Between Climate Change and Ticks Infographic

[The climate and ticks infographic](#) explores the connections between climate change, ticks and health effects, such as Lyme disease.

(URL: [bit.ly/MI-ticks-climate](http://bit.ly/MI-ticks-climate))



## Carbon Monoxide (CO) Poisoning

[This fact sheet on carbon monoxide](#) explains why CO poisoning happens and how to prevent it.

(URL: [bit.ly/CO-PoisoningFacts](http://bit.ly/CO-PoisoningFacts))



## Climate Change in Michigan and the Public Health Response

[The MICHAP fact sheet](#) highlights some of the ways that Michigan's climate is changing and shows how those changes might affect human health.

(URL: [bit.ly/MiCHAP-Facts](http://bit.ly/MiCHAP-Facts))



English Version QR Code

## Cambio Climático en Michigan y la Respuesta de Salud Pública

(URL: [bit.ly/MiCHAP-hoja-informativa](http://bit.ly/MiCHAP-hoja-informativa))



Spanish Version QR Code

## Drinking Water Well Maintenance- Private Wells

April showers bring May flowers, but they can also bring flooding. For Michiganders with wells, flooding can impact the safety of your drinking water.

[The well maintenance fact sheet](#) provides tips on how to maintain your well and protect your drinking water.

(URL: [bit.ly/WellMaintenance](http://bit.ly/WellMaintenance))



**mTracking**  
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.

**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

**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.

### 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%.

**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
- Elder adults
- People living in poverty

### Drinking Water Well Maintenance

Maintaining your well and the surrounding area is important for protecting your drinking water and your health. Here are tips on how to maintain your well through regular inspections, testing, and treatment.

**Well Inspection**  
**Wellhead and Well Cap**  
Check the wellhead (the part of the well that's above ground) and the well cap (the part that covers the wellhead) several times a year. Look at the wellhead casing and cap for any cracks or openings that shouldn't be there. The cap keeps rainwater, insects, and small animals from getting into the well.  
If you find problems, contact a registered well driller. To find a registered well driller in your area, visit [Michigan.gov/WellnessConstruction](http://Michigan.gov/WellnessConstruction) and choose "Directory of Registered Constructors."

**Well System**

- Have a registered well driller inspect the well system every 10 years or as needed. The inspection will include the condition of the well, pump, storage tank, piping, and valves. When it's time for a new well, contact a registered well driller for installation and to properly abandon (plug or seal) the old well.

**Surroundings**  
Look around your well to see if items or materials are nearby that could impact your well.

- Do not store, use, or dump harmful materials such as paint, fertilizer, pesticides, and motor oil near the wellhead. If you do use lawn fertilizer, follow the application instructions. Don't over apply near the wellhead.
- Keep the top of your wellhead 12 inches above the ground. Slope the ground away to help keep water from ponding near the wellhead.
- Do not plant shrubs and trees near the well.
- Be sure you can easily get to your wellhead for maintenance and/or for pump replacement. Never build a deck or porch over a wellhead. Buildings should be at least 3 feet from the wellhead.
- Keep dog kennels or animal holding areas at least 50 feet from your well.
- If your home has a septic system it's important to maintain it. Poor maintenance can lead to contaminants getting into your drinking water.

**Routine Well Maintenance**  
Regular maintenance is recommended for your well, including water testing and inspection. Having a maintenance routine will keep you informed of your drinking water quality and possibly identify problems.

**Water Testing**  
Michigan homeowners are required to test their drinking water for coliform bacteria when a well is installed. Consider testing your drinking water if flooding has happened near your well, your well has had repairs, or you notice changes in your water's taste, color, or odor. The Michigan Department of Health and Human Services (MDHHS) recommends testing:

- Every year for coliform bacteria, E. coli, nitrate, and nitrite
- Every three to five years for arsenic, copper, and lead
- Check with your local health department to see if there are other times you need to test your drinking water. They may recommend other testing based on water conditions in the area.



# Social Media Posts

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

- Flood safety and preparation.
- Residential well maintenance.
- Tick awareness and safety.
- Safe generator use to avoid carbon monoxide poisoning.

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 copy and paste the post content to share along with the corresponding image.

# Facebook, Nextdoor and Instagram Posts

Be prepared! Climate change is increasing the risk of flooding in Michigan. Heavy rainstorms are becoming more common and annual precipitation (snow, rain, ice) is likely to increase.

One way to be ready for the unexpected is to prepare an emergency kit. Store enough food, water and medicine to last at least three days.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))



Prepare your home to better weather the storm!

Climate change is increasing the risk of flooding in Michigan. If you live in an area that could flood, consider taking steps to prepare your home to better cope with, and recover from, flooding.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))



Climate change is increasing the risk of flooding in Michigan. Some people may be less able to cope with the financial or mental impacts of a flood. Planning how to help those who will need extra support can reduce their anxiety and stress.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))



Stay safe during floods! Climate change is increasing the risk of flooding in Michigan. This means more Michiganders will have to learn how to keep themselves and their families safe during floods.

Floodwaters can be dangerous for many different reasons:

- Six inches of moving water can make you fall.
- A foot of water will float many cars.
- Floodwaters can contain many things that can harm you, like large debris, fallen power lines, human and livestock waste and animals that can bite.

Protect yourself and your family by staying out of floodwaters.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](https://bit.ly/Flood-safety))



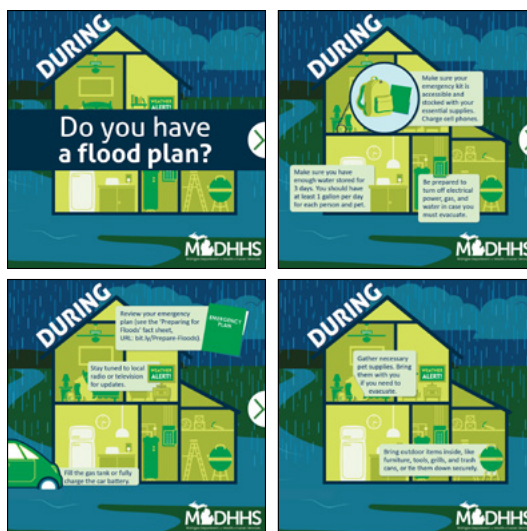
Climate change is increasing the risk of flooding in Michigan. Do you know what to do during a Flood Watch or Flood Warning?

Having a flood plan in place gets your home and family ready to leave fast. Follow these tips.

- Take only essential items with you.
- Turn off gas, electricity and water at main switches or valves.
- Disconnect appliances to prevent electrical shock when power is restored.
- Follow designated evacuation routes and expect heavy traffic.
- Do not drive or walk into flooded areas.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](https://bit.ly/Flood-safety))

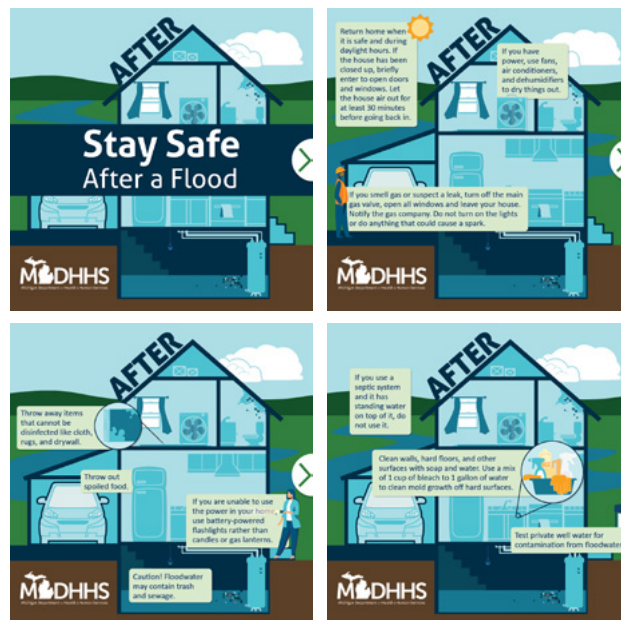


Stay safe after a flood! Being cautious can help to avoid some common health and safety hazards in a flooded home:

- When returning home after a flood, use caution and make a plan to re-enter your home safely.
- Do not turn power on or off while standing in water. Call an electrician to check the house's electrical system.
- Do not use electric tools or appliances while standing in water.
- Return home in the daylight.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))



Mold can develop quickly after a flood. If a home has been wet for 24 hours, assume mold is present.

Mold can cause a stuffy nose, sore throat, coughing or wheezing, burning eyes or skin rashes. Some people may have severe reactions.

To clean up safely, wear the proper gear and use the right cleaning products. Use regular, unscented bleach, soap and clean water to clean and sanitize undamaged food cans (free of punctures and dents), toys and hard surfaces, such as countertops and dishes.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))



Spring showers bring flooding water!

If you have a well, flooding can be a problem. Water can collect contaminants found on the ground as it pools. If your well is poorly constructed or maintained, these contaminants could end up in your drinking water. Flood water can also carry debris that can damage the wellhead, allowing contaminants to enter your drinking water.

If flooding happens near your well, consider testing the water you drink for coliform bacteria, nitrate and nitrite.

Learn about other times you should consider testing your well water at [bit.ly/MiWellTesting](http://bit.ly/MiWellTesting). You can also call MDHHS Drinking Water Hotline 844-934-1315.



Private residential well owners, do you check for cracks and openings on your wellhead and well cap several times a year?

A wellhead and well cap keep polluted rainwater, insects and small animals from getting into the well. If these get in, it can make your water unhealthy.

Learn more about well maintenance at [bit.ly/MiWellMaintenance](http://bit.ly/MiWellMaintenance). You can also call the MDHHS Drinking Water Hotline at 844-934-1315.



Spring is a great time to get your well inspected!

Climate change is increasing the frequency of flooding in Michigan. If flooding occurs around your well, it could impact the quality of your drinking water.

You can protect your drinking water by being sure your well is in good working order.

Well systems should be inspected by a professional at least every 10 years. Making sure your well system is in good condition means safer water to drink!

Learn more well maintenance tips at [bit.ly/MiWellMaintenance](http://bit.ly/MiWellMaintenance). You can also call the MDHHS Drinking Water Hotline at 844-934-1315.



April to September is when ticks are usually active in Michigan. Ticks can be active when outdoor temperatures are at least 40°F. With warming temperatures, ticks are out and active longer. Ticks can carry diseases like Lyme disease, so knowing when they are active is important for health. Learn more about ticks at [bit.ly/MiTrack-Ticks](http://bit.ly/MiTrack-Ticks) and more about Michigan's changing climate and health effects at [bit.ly/MIClimateAndHealth](http://bit.ly/MIClimateAndHealth).



When a tick bites, it does not hurt. It will stay attached for several days as it swells up with blood. An infected tick must be attached for 24+ hours before the Lyme disease bacterium can be transmitted in most cases. Avoiding tick bites and quickly removing ticks are the best ways to prevent infection! Learn more prevention tips, how to remove a tick, and find tick identification help at [bit.ly/MITickPrevention](https://bit.ly/MITickPrevention).



Pets can also get Lyme disease if bitten by an infected tick. The best way to stop ticks from biting your pets is to use flea and tick preventives and check them regularly for ticks. Talk to your vet about tick bite prevention products.

For more tick bite prevention information go to [bit.ly/MITickPrevention](https://bit.ly/MITickPrevention).



AFTER being outside prevent tick bites by:

- Removing ticks from your clothes, wear light-colored clothing to make ticks easier to see.
- Performing “tick checks” on humans and pets after being outdoors, even in your own yard.
- Showering soon after coming inside.
- Placing clothes in a dryer on high heat for at least 10 minutes to kill ticks you might have missed.

For more tick information go to [bit.ly/MITicks](https://bit.ly/MITicks). #MiTracking



In Michigan, climate change is bringing more flooding. Preparing your home now can reduce health and safety hazards later.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))



Climate change is causing more flooding.

Do you know about your community’s emergency plans, warning signals, evacuation routes and locations of emergency shelters?

Visit [211-Michigan](#) or call your local health department to find out more about emergency planning in your area.



Do not drive through flooded roadways. Six inches of water is enough to cause you to lose control of your car.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

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**If you are ordered to evacuate during a flooding emergency...**

- Take only essential items.
- Turn off gas, electricity, and water at main switches or valves.
- Disconnect appliances to prevent electrical shock when power is restored.
- Follow designated evacuation routes and expect heavy traffic.
- Do not drive or walk into flooded areas.

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Department of Health & Human Services

After a flood some people will need extra help because of age, medical condition, or other circumstances.

Learn more about how to stay safe before, during, and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))

**Help Others After a Flood**

Check in on elderly neighbors and people that may need help cleaning up.

Those who rely on electricity to refrigerate medication or for medical equipment may also need help.

**MICHIGAN**  
Department of Health & Human Services

Standing water in a home could be contaminated by sewage or dangerous chemicals, and mold can develop quickly.

Learn more about how to stay safe before, during and after a flood with the [Michigan Flood Safety Fact Sheet Series](#).

(URL: [bit.ly/Flood-safety](http://bit.ly/Flood-safety))

**A flood can make your home dangerous, even after the water is gone. Stay safe cleaning up after a flood.**

**Who should not enter a home with mold damage?**

- Children
- People with asthma or other breathing problems
- People with weakened immune systems

**What to wear while cleaning up after a flood:**

- Goggles or eye protection
- N-95 respirator
- Long-sleeved shirt
- Protective gloves
- Long pants
- Waterproof boots

**MICHIGAN**  
Department of Health & Human Services

If spring storms knock out power, use generators safely to avoid CO poisoning. Always use generators outdoors away from doors, windows and vents. NEVER use generators in homes, garages, basements or other enclosed or partially enclosed areas. Learn more at [bit.ly/CO-safety](http://bit.ly/CO-safety).

**NEVER use your generator indoors.**

**MICHIGAN**  
Department of Health & Human Services



Spring showers bring flooding water!

If you have a well, flooding water can be a problem. Water can collect contaminants found on the ground as it pools.

Learn about times you should consider testing your well water at [bit.ly/MiWellTesting](https://bit.ly/MiWellTesting) or call 844-934-1315.



Private residential well owners, do you check for cracks and openings on your wellhead and well cap often?

A wellhead and well cap keep polluted rainwater, insects, and small animals from getting into the well.

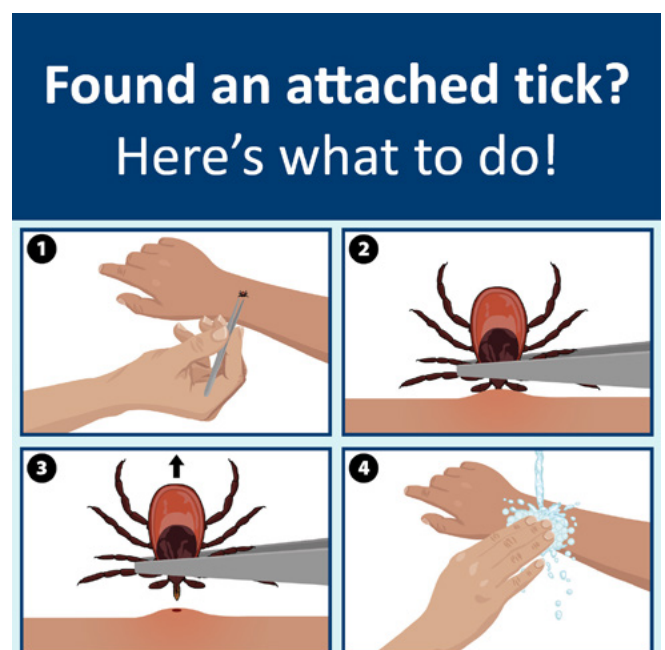
Learn more at [bit.ly/MiWellMaintenance](https://bit.ly/MiWellMaintenance) or call 844-934-1315.



To remove a tick:

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 more information about ticks go to [bit.ly/MichTickPrevention](https://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](http://bit.ly/MichTickPrevention).



Know where ticks live! People and pets most often come across ticks in:

- Shady, moist wooded and grassy areas.
- Fields near wooded areas.

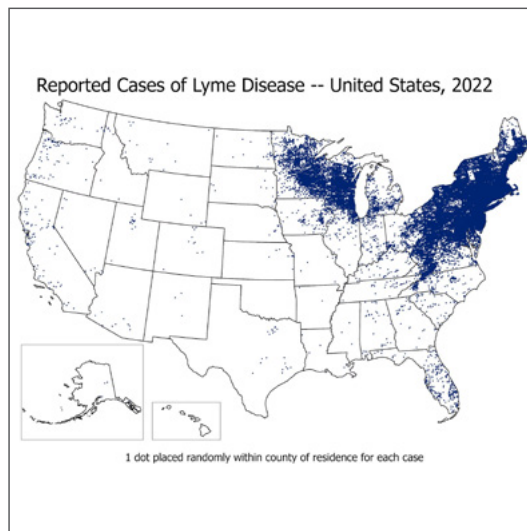
After visiting these areas, take a shower to prevent tick bites. Learn more tick tips BEFORE visiting areas with ticks at [bit.ly/MITickPrevention](http://bit.ly/MITickPrevention).



Make sure to do a “tick check” after being outside. Check out the images below for common tick hiding areas. You can find tick identification information at [bit.ly/MITickPrevention](http://bit.ly/MITickPrevention).



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](https://bit.ly/EZIDMILyme).



Take precautions before visiting areas with ticks! Apply EPA-registered insect repellent to skin or clothing according to the label's instructions. Learn more tick bite prevention tips at [bit.ly/MITickPrevention](https://bit.ly/MITickPrevention).



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