

FREE Mosquito Awareness Guide

A Public Service of Mosquito Authority

What You Should Know About Mosquitoes, Mosquito-Borne Disease and Mosquito Control

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The 5 Things Every Mom Should Know About Mosquitoes

- 1. Mosquitoes LOVE children.** They run, they play, they sweat, they get out of breath. The carbon dioxide and perspiration they generate by, well, just being kids makes them mosquito magnets. Mosquitoes can sense their next blood meal from more than 150 feet away.

They also spend their time in sandboxes and playhouses and other “mosquito havens.” Mosquitoes love damp, shady areas rich in foliage, and females need less than a bottle cap worth of water to lay eggs.

So the nooks and crannies in that overturned toy, that little rain puddle by the slide and the kiddie pool from last Saturday are the perfect places for mosquitoes to hang out, catch a blood meal, and reproduce.

- 2. Mosquitoes don’t just make you itch.** Even in the United States where mosquito-related deaths are relatively few, mosquitoes can carry deadly diseases like West Nile and Encephalitis.

In total, mosquitoes transmit 28 diseases and kill more people each year worldwide than any other single factor, including heart disease, cancer, AIDS & car accidents.

In other words, mosquitoes aren't just a nuisance.

- 3. Kids are more susceptible.** Most mosquito-related deaths are children. Little bodies just aren't equipped to fight the diseases mosquitoes carry. In severe cases, it is less than 48 hours from the appearance of the first symptom before serious complications or even death.

Mosquito-borne diseases present with common symptoms like fever, nausea and vomiting, making them difficult to detect. *You should contact your doctor immediately if your child has been bitten by a mosquito and shows any of the following symptoms:*

- *sudden high fever,*
- *severe headache,*
- *stiff neck,*
- *confusion,*
- *muscle jerks, tremors, seizure,*
- *rash or hives, and/or*
- *nausea or vomiting.*

- 4. It only takes ONE bite.** While your risk of contracting a mosquito-borne disease increases with the number of bites, it only takes one bite from an infected mosquito to get sick. That's why prevention and protection are so important. This leads us to our next point...

5. There IS something you can do! A few very easy steps can drastically reduce the risk of getting bitten at home. Just remember to drain, dress and defend.

Drain - Remove standing water from around your home. It only takes a bottle cap's worth of standing water to cause a mosquito problem. Common culprits should be monitored regularly for standing water:

- clogged rain gutters,
- corrugated drain pipes,
- bird baths,
- pet bowls,
- trash & recycling bins,
- plant pots, and
- children's toys.

Dress - When practical, wear long pants and long sleeves. Loose-fitting, light-colored clothing is best. Studies have shown that some mosquitoes are more attracted to dark clothing and can most readily bite through tight-fitting, loose-weave clothing.

Defend – Use repellent! The EPA has registered repellents that have been reviewed and approved to pose minimal risk when used properly:

- DEET (N, N-diethyl-m- toluadimide)
- Picaridin (KBR 3023)
- Oil of lemon eucalyptus (p-methan 3.8-diol, or PMD)

Professional Mosquito Control - While nothing can eliminate the threat entirely, when

performed properly by trained professionals, backyard mosquito treatments can help to reduce the danger and risk posed by disease-carrying mosquitoes.

7 Things Everyone Should Know About Professional Mosquito Control

As the industry grows, residential mosquito control services are popping up everywhere. National franchises, mom and pop businesses, and do-it-yourself options abound. It's important that you are aware that not all professional mosquito control companies are equal.

Hopefully this information will help keep you from getting duped into thinking you're getting "mosquito control" when you're not. Hopefully it will tell you what you should look for when you're considering a backyard mosquito control solution. And hopefully it will give you a reason to consider The Mosquito Authority as your choice provider if you choose to go the professional route.

1. Three words: integrated mosquito

management. Good mosquito control is about more than just spraying your yard. Integrated Mosquito Management, or IMM, incorporates additional tactics like habitat removal and larval control. These extra steps effectively break the mosquito lifecycle in your yard, preventing mosquitoes from laying new eggs and making... you guessed it... more mosquitoes.

In other words, your mosquito control professional should be licensed in your state to perform mosquito

control. In most cases, this will ensure he or she has been made aware of the proper process for controlling mosquitoes. If he or she doesn't utilize integrated mosquito management, you shouldn't utilize the service.

2. Good mosquito control starts early and ends

late. The most effective way to control mosquitoes is prevention. Since mosquito eggs remain viable throughout the winter (no matter how cold it gets,) it's important to treat those larvae before they have the chance to hatch. Early spring, before the weather hits 60 degrees overnight, is the best time to apply larvacide, eliminate habitat and kill the few adult survivors.

It is also important to continue mosquito control efforts until fall. Mosquitoes can lay as many as 300 eggs at once, as often as every 3 days. At this rate, it doesn't take long for mosquitoes to reclaim your yard as their breeding ground.

Your mosquito control professional should insist upon early and late treatments in an effort to get you the best control – and the fewest mosquitoes – possible from year to year.

3. It starts with you. The standard mosquito treatment cycle is about 21 days, or three weeks. (That corresponds with both the mosquito lifecycle and the breakdown of the chemical solution, important components of integrated mosquito management.) BUT it only takes between 7 and 14 days for a mosquito egg to hatch once it's been laid.

It is important to do a walk-through of your property once a week or so and look for new areas of standing water that did not exist as of your last mosquito treatment.

Your mosquito control professional should also alert you to any potential problem areas that require your action, like clogged gutters, piles of leaves and brush, or kiddie pools.

- 4. It's great for kids and pets.** Things are going to get a little technical here, so lean in. In most cases, the solution used to treat your trees, shrubs and foliage is going to consist of a pyrethroid. A pyrethroid is simply a synthetic compound similar to the natural pyrethrins produced by the chrysanthemum flower.

While many people are concerned about the safety of treating with chemicals, it is important to know that pyrethroids make up the majority of commercial household insecticides, as well as lice shampoos prescribed by doctors for children and flea and tick shampoos recommended by veterinarians for pets.

Additionally, the EPA has stated that “exposures from the many current uses of pyrethrins and pyrethroid insecticides do not pose risk concerns for children or adults. Further, the cumulative assessment supports consideration of registering additional new uses of these pesticides.”

In the case of The Mosquito Authority, the solution used in your yard is milder than the DEET found in mosquito repellents you apply directly to your skin. The mixture is approximately 3% of the pyrethroid Bifenthrin 7.9 to 97% water. While treating your yard, technicians should wear gloves. No face masks or additional protective equipment is required.

Your mosquito control professional should always be able to tell you what solution they are using in your yard, ensure that it is being used as intended, and provide appropriate documentation when asked.

5. Be wary of “natural” or “green” alternatives.

Ingredients commonly promoted as “natural” or “green” repellents like garlic and essential oil blends are known to be less effective than more traditional chemical solutions. As a result, these treatments are usually performed more often and still may not eliminate the entire problem.

If you are considering one of these treatments, you should check with your mosquito control professional regarding the efficacy and frequency of their alternative treatments. You should also verify any treatment includes habitat elimination and larval control. **Perhaps most importantly, you should be prepared to take extra steps to protect yourself from mosquito bites in case the treatment is not 100% effective, such as wearing repellent, staying indoors at dawn and dusk, and wearing long pants and long sleeves when necessary.**

Again, your mosquito control professional should be able to tell you what solution they are using in your yard. He or she should also be able to provide documentation regarding the efficacy of alternative solutions and verify they are practicing integrated mosquito management.

6. The risk to beneficial insects and other wildlife.

The solution used to control mosquitoes may be harmful to many different insects, as well as fish and aquatic life. However, properly-trained technicians will minimize the impact on beneficial insects by avoiding the places they frequent, namely flowering plants. It is entirely possible to perform a comprehensive and effective mosquito treatment without harm to aquatic life as well.

As a note, birds, deer and other wildlife will thank you for controlling mosquitoes, as they are likely a mosquito's first and favorite target, even above humans. Additionally, habitat elimination and larval control have no negative impact on anything other than mosquitoes.

Your mosquito control professional should always utilize technicians trained in performing comprehensive, effective mosquito control while minimizing the impact on beneficial insects and other wildlife.

7. You get what you pay for. When surveying your mosquito control options, don't hesitate to ask about each of these 7 factors to ensure you get the best control. Many

times a “bargain” service proves to be ineffective. Look for a 100% Satisfaction Guarantee.

Your mosquito control professional should be just that: professional. Don't settle for less-than-effective service that may put you and your family at risk.

3 Questions to Ask Your Doctor About Mosquito-Borne Disease

When it comes to mosquito-borne disease, timing is key. In many cases, early diagnosis and treatment reduces the risk of severe complications or even death. Ask your doctor these three questions to help prepare yourself in the event you are bitten:

- 1. What mosquito-borne diseases are present in this area?** Certain mosquitoes and the diseases they carry are more prominent in some areas of the country than others. West Nile Virus, for example, is present almost everywhere in the United States. Eastern and Western Equine Encephalitis, however, are found predominantly in the eastern and western United States, respectively.

Ask your doctor what diseases are most common to your geographic location. You can also use the [U.S. Geological Survey's Disease Maps](#) as a guide.

- 2. What symptoms should I look for?** Different diseases present with different symptoms. Your doctor can tell you which symptoms are associated with the diseases in your area, as well as which symptoms require a visit to the doctor's office or hospital immediately.

For general information, refer to “So You’ve Been Bitten? 4 Symptoms to Look Out For” and the “Mosquito-Borne Disease Quick Reference Sheet” in this guide.

- 3. What if I think one of my family members is infected?** In the event you suspect a mosquito-borne disease, you should know exactly what to do. Should you call your doctor or go directly to the emergency room? What should you do if it’s the evening or weekend? You should leave your doctor’s office with the exact protocol you should follow, including after-hours contact information.

Always call 911 if you or your family member is having a medical emergency like difficulty breathing or seizures. The operator will best be able to advise you in these situations.

4 Things to Look for in a Repellent

Repellents are a good way to protect yourself from mosquitoes – at home or away – but the endless options can be difficult to navigate. To make sure you are getting the best protection for you and your family, follow these guidelines:

- 1. DEET, Oil of Lemon Eucalyptus, Picaridin, or IR3535** – These active ingredients are the most effective in preventing mosquito bites. In addition to having one of these active ingredients, the repellent you choose should be registered with the EPA. You can generally find an EPA registration number on the back of the bottle next to the product barcode.

Special Considerations:

DEET - How much you need is based on your specific circumstances. Concentrations of more than 30% are not considered to be any more effective, so stick with a concentration of 30% or less.

Oil of Lemon Eucalyptus – Products with this active ingredient should not be used on children younger than three years of age.

For more information on repellents and to find the repellent that is right for you, please visit the [Environmental Protection Agency](#).

- 2. NO Sunscreen** – In the event you need protection from both the sun and mosquitoes, use two separate products. Sunscreen can affect the absorption of the repellent. Additionally, sunscreens generally need to be applied more often than repellents. By using a combined product you risk too little sun protection and/or too much repellent exposure. The general recommendation is to apply sunscreen first, then repellent.
- 3. Topical Application** - Wrist bands, patches, pills, bug zappers and other non-topical options are not recognized as effective ways to repel mosquitoes. Stick with a cream, spray or liquid that can be applied directly to the skin.
- 4. Clear Instructions** – Choose a repellent that is clearly labeled to ensure you are getting the right amount of protection from the right insects. The instructions should clearly state how often the repellent should be reapplied. The new, voluntary label from the EPA is a good example of both. (See below.)



Pay particular attention when applying these products to children. For example, it is not recommended to use repellents on babies younger than two months old. Products with Oil of Lemon Eucalyptus should not be used on children younger than three years old.

For more information about insect repellents and children, please visit the [American Academy of Pediatrics](#).

How to Protect Yourself from Mosquitoes

In order to be effective, mosquito control must be comprehensive. Just remember... Drain, Dress, Defend.

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So You've Been Bitten?

4 Symptoms to Look Out For

Mosquito-borne diseases can be difficult to detect. Many times people affected with mild cases of diseases like West Nile can have no symptoms at all. Other times these diseases can present with the same symptoms as more common illnesses, like flu.

If you or a family member have been bitten, these are the symptoms you should look out for. And remember, while mosquito-borne diseases are relatively rare here in the United States, they can be deadly. We advise you to always take a “better safe than sorry” approach.

- 1. Sudden High Fever** – Seek immediate medical attention if you or your child has been bitten by a mosquito and develops a sudden high fever, especially if it is accompanied by any of the following symptoms.
- 2. Cognitive Impairment** – Many mosquito-borne diseases can cause severe headache, confusion, and even seizures. In some cases, you just feel “off.” It is important to be especially vigilant after a child has been bitten, as cognitive symptoms can be difficult for children to express.
- 3. Muscular Reactions** – Look for a stiff neck, muscle jerks or tremors. In the case of the relatively-new disease, Chikungunya, joint pain is a main symptom.

- 4. Allergic Symptoms** – Nausea, vomiting, hives or other rashes commonly associated with allergic reactions can be indicative of a mosquito-borne disease.

This Mosquito Awareness Guide is a public service of Mosquito Authority. For more information, please visit BugsBITE.com.