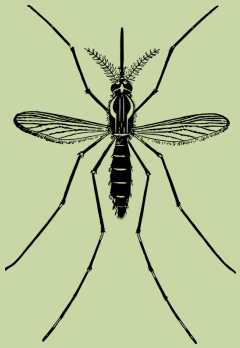


# Insect Repellent Essentials:

## A Brief Guide

**Insect repellents are substances that, when used as directed, can reduce tick, mosquito, and other insect bites. Preventing bites will help you avoid disease-causing pathogens carried by these animals.**

# WHY SHOULD YOU USE INSECT REPELLENT?

**You can protect yourself from ticks and mosquitoes by properly applying insect repellents when outdoors during times of year when these critters are most active.**

## How do they work?

Repellents used on your skin generally work by making it harder for biting insects and ticks to smell or find you.

Not all ticks and mosquitoes carry disease-causing agents, but there are a few in the Northeast that can be harmful:

**Several mosquito species in the Northeast can transmit:**

- West Nile virus
- Eastern equine encephalitis virus
- LaCrosse encephalitis virus
- Jamestown Canyon virus

**Blacklegged (aka deer) ticks:**

- Lyme disease
- Anaplasmosis
- Babesiosis
- Ehrlichiosis
- Powassan virus disease

**Lone star ticks:**

- Ehrlichiosis
- Tularemia
- Heartland virus

**American dog ticks:**

- Tularemia
- Rocky Mountain Spotted Fever

**Brown dog ticks:**

- Rocky Mountain Spotted Fever

Visit **www.cdc.gov/ncezid/dvbd** to learn more about these vector-borne diseases

# WHEN SHOULD YOU APPLY INSECT REPELLENT?

**Apply insect repellent when you are outdoors in tick or mosquito habitats.**

- Ticks in the Northeast can be active year-round and any time of day. They are most active during the warmer months of the year, and can be as small as poppy seeds during the spring and summer.
- **You can still be bitten by a tick in the winter!** If the temperature is warm enough and the snow has started to melt, ticks can be active.

- Mosquitoes are most active during the warmer months of the year, usually from the beginning of April through October.
- In the Northeast, some types of mosquitoes can bite during the day and others at dusk and night time, which means you can be bitten any time of day when outside.

# WHERE DO TICKS AND MOSQUITOES LIVE?

- **Ticks tend to live in heavily-wooded areas, but also in shrubbery, weeds, grass, and piles of leaves**.
- You can be bitten by a tick in any of these areas, walking along the edges of roads or hiking trails, and ***even in your own backyard***.
- Be sure to always thoroughly check yourself for ticks after spending time in these areas!

- **Mosquitoes lay their eggs in standing water**. You can find them in roadside ditches, woodland pools, and containers like flower pots, bird baths, and old tires.
- In addition to natural habitats, mosquitoes can be found around your home and neighborhood.
- Dump out standing water weekly to keep mosquitoes away from your home!

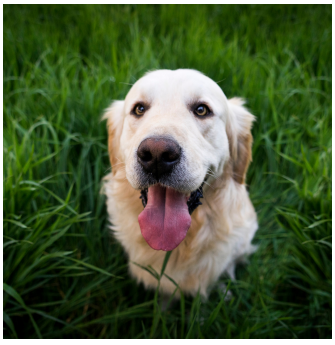
# HOW SHOULD YOU APPLY INSECT REPELLENT?

## The Centers for Disease Control and Prevention (CDC) recommend the following tips for safely applying insect repellent:

- **Follow instructions on the product label.**
- **Apply repellents only to exposed skin or clothing**, never underneath clothing.
- **Never spray repellents over cuts**, wounds, or irritated skin.
- **Do not spray directly on face**—spray on hands first and then apply to face.
- **Do not apply repellents to eyes or mouth**, and apply sparingly around ears.
- **Wash hands after application** to avoid accidental exposure to eyes or mouth.
- **Do not allow children to handle repellents**. Instead, have adults apply to their own hands first, and then gently spread on the child's exposed skin.
- **Avoid heavy application**. Use just enough repellent to cover exposed skin or clothing.
- **After returning indoors, wash** repellent-treated skin with soap and water.

The instructions above are for repellents meant for use on skin. Permethrin is one repellent that is only meant to be used on clothes. **If your product contains permethrin, do not spray it on your skin!**

# CAN I USE INSECT REPELLENT ON MY PETS?



**It is important to use an insect repellent that is specifically made and labelled for your pets**.

Animals can suffer serious health problems if the wrong repellent is used on them.

Check with your veterinarian about details on what to use, and follow directions carefully, to protect your furry family member!

# COMMON MYTHS ABOUT INSECT REPELLENT

## "Any insect repellent will work against all biting ticks and insects."

- **Make sure the insect repellent you purchase is labelled for what you want to avoid!**
- Only EPA-registered products are guaranteed to have the proper testing to prove effectiveness at preventing bites from targeted insects or ticks.
- To be sure your product has been tested for insect and tick bite prevention, look for the EPA Registration Number (EPA Reg. No.) on the label.

## “If it’s natural, it must be safer!”

- Natural plant oils, like peppermint, lemongrass, geraniol, cedar oil, clove, and thyme oil, can cause skin irritations, especially when in the sun.
- Many natural plant oil repellents have not been properly tested for preventing tick bites, and only prevent mosquito bites for a short amount of time.

## "There's no such thing as too much repellent."

- Applying more than the suggested amount of insect repellent can be potentially dangerous and cause health issues!
- Follow the product instructions for safe and effective application and re-application.

## “Sunscreen that’s also insect repellent... what a great idea!”

- Combination sunscreen/insect repellents combine two products into one, usually as a cream.
- Studies show that repellent ingredients can decrease the effectiveness of the SPF in the sunscreen. These two products also last for different amounts of time.
- For these reasons, you are better off using separate sunscreen and repellents to protect your skin. **Apply your sunscreen first, then put on your insect repellent**.

## “Citronella candles and clip-ons are great for keeping mosquitoes away!”

- Citronella candles and clip-ons are not recommended for effective bite prevention.
- Citronella oil evaporates quickly, and candles have only been shown to reduce mosquito biting by 50%.
- Instead, try using a fan to prevent mosquitoes from flying towards you and biting you.

# SAFE AND EFFECTIVE REPELLENTS

## The CDC recommends using EPA-registered repellents that have been tested for safety and effectiveness.

- EPA-registered insect repellents are proven safe and effective, even for pregnant and breastfeeding women.
- Unregistered repellents may have active ingredients that have not been tested for safety or effectiveness.
- Visit **www.epa.gov/insect-repellents** for information about the safe use of repellents.

**The chart on the back page has information to help you choose an EPA-registered repellent that works for you.**

Listed below are some of the common EPA-registered active ingredients in insect repellents.

Products containing OLE, IR3535 and 2-undecanone **must** be registered with the EPA

**DEET**
**Picaridin**
**IR3535**
**Permethrin**
**Oil of Lemon Eucalyptus (OLE)***

*Not the same as eucalyptus oil!

# TRAVEL RECOMMENDATIONS

**Mosquitoes, ticks, and other disease transmitting insects are found in many places around the world.**

Talk to your health care provider and visit **www.cdc.gov/travel** to learn more about protecting yourself before traveling.

# ADDITIONAL RESOURCES

- Visit **http://neregionalvectorcenter.com** to learn more about the Northeast Regional Center for Excellence in Vector-Borne Diseases' tick and mosquito research and outreach programs!
- Visit **https://www.epa.gov/insect-repellents** to learn more about different types of insect repellents, how the EPA assesses them, and tips on using them safely!
- Visit **https://www.cdc.gov/ncezid/dvbd/about/prevent-bites.html** for more tips on how to avoid tick and mosquito bites from the CDC Division of Vector-Borne Diseases!
- Visit **https://www.consumerreports.org/cro/insect-repellent/buying-guide/index.htm** to check out insect repellent product ratings from Consumer Reports!
- Visit **https://nysipm.cornell.edu/whats-bugging-you/ticks/** for lots of great information on ticks, where they live, and how to avoid them from New York State Integrated Pest Management!
- Visit **https://www.healthychildren.org/English/safety-prevention/at-play/Pages/Insect-Repellents.aspx** for recommendations on using insect repellents on children.

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# CHOOSING A REPELLENT THAT'S RIGHT FOR YOU

| | DEET | Picaridin | IR3535 | Oil of lemon eucalyptus | Permethrin |
|---|---|---|---|---|---|
| How do I apply it? | • Follow label instructions for product application and re-application<br>• Apply directly to skin or clothes. Do not apply under clothes.<br>• Avoid eyes, mouth, and wounded or irritated skin.<br>• Spray on hands and then sparingly apply to face, ears and neck. | | | | **Never apply directly to skin!** Apply **only** to clothes, shoes, tents, & other fabrics. Avoid use around pets - **toxic to cats!** |
| Can I use it on my kids? | Recommended for use on children 2 months & older. Adults should apply. | | | Recommended for use on children 3 years and older. Adults should apply. | All ages can wear treated clothes. Follow label instructions. |
| Is it effective? How long does it last? | Highly effective. Lasts 2 to 8 hours, depending on concentration. | Highly effective. Lasts 3 to 10 hours, depending on concentration. | Moderately effective. Lasts 4 to 6 hours. | Highly effective. Lasts up to 2 hours. | Highly effective repellent & contact insecticide. 0.5% sprays applied to clothing can last for 5 to 7 washes. |
| What can it repel? | Mosquitoes, ticks, fleas, black flies, biting midges | Mosquitoes, ticks, fleas, black flies, biting midges | Mosquitoes, ticks, black flies | Mosquitoes, ticks, fleas, black flies, biting midges, gnats | Mosquitoes, ticks, fleas, black flies,human lice, chiggers |
| Other names for ingredient | N, N-diethyl-meta-toluamide | Icaridin, Piperidine, Propidine, INCI, KBR 3023 | Ethyl butyl acetyl aminopropionate | P-methane-3, 8-diol, PMD | |

Products with lower concentrations of these ingredients may not be as effective at repelling ticks. Always look on the product label to see what pests are effectively targeted by the active ingredient. Visit **www.epa.gov/insect-repellents/find-repellent-right-you** for more product-specific information.