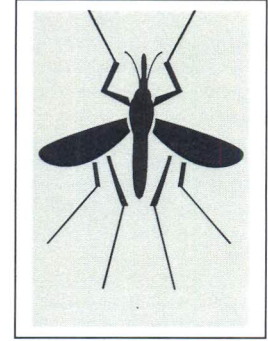




Toni N. Harp, Mayor  
City of New Haven



## STEPS YOU CAN TAKE TO PROTECT AGAINST THE WEST NILE VIRUS

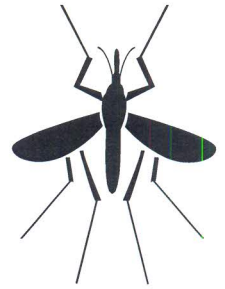
*The City of New Haven wants all residents to be aware that August and September are months when mosquitoes infected with the West Nile Virus are most active. Take the following steps to reduce the mosquito population around your home and property:*

- **Reduce or eliminate all stagnant water.** Remove all discarded tires on your property. Used tires have become the most common mosquito breeding site in the country.
- Make sure roof gutters drain properly, and clean clogged gutters in the spring and fall.
- Turn over plastic wading pools and wheelbarrows when not in use and empty pool covers of water.
- Change the water in birdbaths.
- Make sure all windows and doors have screens, and that all screens are in good repair.
  
- **Protect yourself when outdoors** - minimize outdoor activities between dusk and dawn. Wear shoes and socks, long pants and a long-sleeved shirt when outdoors for long periods of time.
- Consider the use of mosquito repellent (see below)
  
- **Use insect repellents properly.** Always follow the directions on the label.
- Insect repellents are not recommended for children under 2 years old or for pregnant women. Use sparingly on children under 6 years old (the American Academy of Pediatrics recommends that products with no more than 10 percent of DEET be used on any child).
- Do not apply on broken or damaged skin and avoid application on face and hands. Wash off when returning indoors.
- Do not spray in an enclosed area or near food.
- Apply products to the clothing of children rather than directly on the skin.
- Avoid breathing mist when spraying repellent. In the event of an adverse reaction to a repellent containing DEET, wash the treated area immediately and contact your health care provider or the local Poison Control Center at: 1-800-343-2722

FOR MORE INFORMATION, CALL THE BUREAU OF ENVIRONMENTAL HEALTH AT: 946-8174



Toni N. Harp, Alcalde  
City of New Haven



## INFORMACIÓN ACERCA DE LA PICADURA DE MOSQUITO EN EL MANEJO Y PREVENCIÓN DEL VIRUS NILO OCCIDENTAL

**Proteja Su Hogar :** Los mosquitos se desarrollan en cualquier agua estancada por mas de 4 días. Para reducir la población de mosquitos alrededor de su casa y propiedad:

- Reduzca o elimine aguas estancadas.
- Deshágase de latas, envases plásticos, tientos de cerámica o envases similares que puedan retener agua.
- Remueva los neumáticos inservibles de su propiedad. Los neumáticos se han convertido en el criadero de mosquitos mas común en este país.
- Perfore la base del reciclaje para que se mantengan afuera.
- Asegúrese de que los canales de drenaje del techo drenen apropiadamente, en la primavera, y el otoño y limpie los canales obstruidos.
- Invierta las piscinas plásticas y carretillas cuando no estén en uso.
- Cambie el agua en los baños para aves.
- Limpie la vegetación y escombros a la orilla de los estanques.
- Limpie y trate con cloro las piscinas, saunas afuera y baños calientes.
- Drene el agua de las cubiertas de las piscinas.
- Dale mantenimiento a los alrededores de su propiedad para evitar que se acumule y se estanque el agua.
- Asegúrese que todas las puertas y ventanas tengan tela metálica en buenas condiciones.

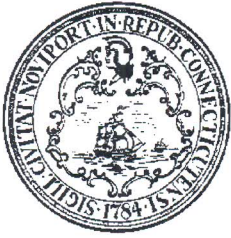
**Protéjase:** Usted puede reducir el riesgo a ser picado por mosquitos por hacer lo siguiente:

- Reduzca al mínimo las actividades al aire libre durante el crepúsculo y la aurora.
- Cuando esté afuera por periodos extensos o cuando los mosquitos están mas activos, use zapatos, medias, pantalones largos y mangas largas.
- Cubra los balones con tela metálica.
- Considere el uso de repelentes de mosquitos, de acuerdo a las direcciones cuando sea necesario para estar afuera y siga las instrucciones del producto.

**Uso Apropiado De Repelente de Insectos :** Los repelentes de insectos que contienen DEET pueden ser efectivos si se usan de acuerdo a las direcciones del fabricante. Ocasionalmente, los productos que contienen DEET han sido asociados con algunos problemas de salud (reacciones de la piel, incluyendo salpullidos, inflamación, picazón y irritación de los ojos. Menos que frecuente, puede ocurrir, entorpecimiento del habla, confusión y ataques epileptico). Se recomiendan las siguientes precauciones para el uso de repelentes de insectos que contienen DEET:

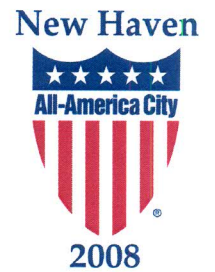
- Siga siempre las instrucciones en la etiqueta.
- Los repelentes de insectos no se recomiendan para niños menores de 2 años de edad ni para mujeres embarazadas use escasamente en niños menores de 6 años de edad (La Academia Americana de Peditras recomienda que en niños se usen productos que contengan no más de 10 por ciento de DEET).
- No use cantidades excesivas..
- No aplique en piel lesionada o lacerada..
- Evite aplicarlo en la cara y en las manos.
- Lavesea al regresar para adentro.
- No aplique en aerosol en áreas cerradas (sin ventilación) o cerca de alimentos.
- Aplique el producto en la ropa de los niños y no directamente en la piel.
- Si usted está afuera por periodos prolongados y nada o suda, usted debe volver a aplicar el productos ya que puede haberse disuelto.
- Evite aplicar el producto debajo de la ropa.
- Evite respirar los vapores cuando se aplica el producto en aerosol. Si usted cree que alguien está experimentando una reacción adversa a un repelente que contenga DEET, lave el área tratada inmediatamente y comuníquese con su proveedor de cuidado de la salud o con el Centro de Control de Envenenamiento local al: 1-800-343-2722

**PARA MAS INFORMACION, LLAME AL DEPARTAMENTO DE SALUD AL 946-8174**



TONI N. HARP  
MAYOR

CITY OF NEW HAVEN  
COMMUNITY SERVICE ADMINISTRATION  
DEPARTMENT OF HEALTH  
BUREAU OF ENVIRONMENTAL HEALTH  
54 Meadow Street - 9<sup>TH</sup> Floor • New Haven • Connecticut 06519  
Phone 203-946-8174 • Fax 203-946-6509



BYRON KENNEDY, MD, PhD, MPH  
DIRECTOR OF HEALTH

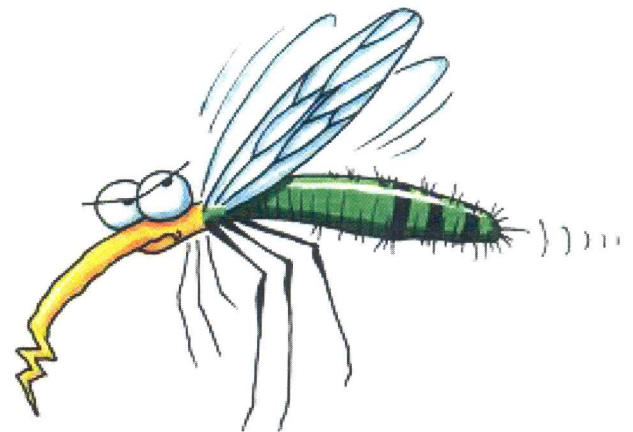
Precautions to Avoid Mosquito Bites Include:

- Minimize time outdoors at dusk and dawn
- Be sure door and window screens are tight fitting and in good repair
- Wear shoes, socks, long pants, and long-sleeved shirts. Clothing material should be tightly woven (to keep mosquitoes away from the skin) and light colored
- Use mosquito netting when sleeping outdoors
- Consider using mosquito repellent when it is necessary to be outdoors and always use them according to label instructions
- The most effective repellents contain DEET or Picaridin.
- When using DEET, use the lowest concentration effective for the time spent outdoors (for example, 6% lasts approximately 2 hours and 20% for 4 hours) and wash treated skin when returning indoors. Do not apply under clothing, to wounds or irritated skin, the hands of children, or to infants less than 2 months.

Measures to Reduce Mosquitoes Around the Home Include:

- Dispose of water-holding containers, such as ceramic pots, used tires, tire swings
- Drill holes in the bottom of containers such as those used for recycling
- Clean clogged roof gutters
- Turn over objects that may trap water when not in use such as wading pools and wheelbarrows
- Change water in bird baths on a weekly basis
- Clean and chlorinate swimming pools, and when not in use, pool covers
- Use landscaping techniques to eliminate areas where water can collect on your property.

Source: CT Dept of Public Health



*"YOUR HEALTH IS OUR COMMUNITY'S WEALTH"*

## INFORMATION ABOUT MOSQUITOES, BIRDS AND THE WEST NILE VIRUS

*THE WEST NILE VIRUS MAY MAKE ANOTHER APPEARANCE IN CONNECTICUT THIS SUMMER. THERE IS NO EVIDENCE AT THIS TIME THAT THE WEST NILE VIRUS IS A THREAT TO HUMAN HEALTH IN OUR COMMUNITY. HOWEVER, IT IS A GOOD IDEA TO BE AWARE, LEARN ABOUT, AND BEGIN PREVENTION METHODS NOW. THIS PAGE WILL HELP YOU DO THIS.*

### **What is West Nile Virus?**

West Nile Virus is a mosquito-borne viral infection that can cause inflammation of the brain. The main host of this virus is the wild bird community (like crows). You can get West Nile Virus from the bite of an infected mosquito. The virus does not spread from person to person, nor is it spread from an infected bird to humans.

### **Mosquito Facts**

Mosquitoes are small flying insects that feed on human and animal blood or plant juices. Only female mosquitoes bite to get a blood meal for their growing eggs. While mosquitoes are generally considered a nuisance, they occasionally can transmit disease. While there are about 43 different species of mosquitoes in the State of Connecticut, most mosquitoes do not transmit West Nile virus. The *Culex pipiens* mosquito is the one most commonly associated with West Nile virus.

### **Where do Mosquitoes Live and Breed?**

Mosquitoes lay their eggs in stagnant water that stands more than four days around the home. Weeds, tall grass and shrubbery provide an outdoor home for adult *Culex* mosquitoes, which also may enter houses through unscreened windows or doors or broken screens.

### **When are Mosquitoes Most Active?**

*Culex* mosquitoes are most active between dusk and dawn when the air is calm, and that is when the females are most likely to bite. However, they may be present at any time of the day.

### **What do Birds Have to do with West Nile Virus?**

During the late summer and early fall of 1999, groups of crows and other birds died in some areas of Connecticut and New York. These birds were found to be infected with the West Nile-like virus. Mosquitoes carrying the virus were also identified. Last year's mosquito surveillance, however, showed that very few areas in Connecticut had infected mosquitoes.

### **Have There Been any Human Cases of West Nile Virus in Connecticut?**

At the present time, no cases of West Nile Virus have been identified in Connecticut.

### **Protecting Your Home**

*Culex* mosquitoes can develop in any stagnant water that lasts more than 4 days. To reduce the mosquito population around your home and property:

- 
- Reduce or eliminate all stagnant water.
  - Dispose of tin cans, plastic containers, ceramic pots or similar water holding containers.
  - Remove all discarded tires on your property. Used tires have become the most common mosquito breeding site in the country.
  - Drill holes in the bottoms of recycling containers that are kept outdoors.
  - Make sure roof gutters drain properly, and clean clogged gutters in the spring and fall.
  - Turn over plastic wading pools and wheelbarrows when not in use.
  - Change the water in birdbaths.
  - Clean vegetation and debris from the edges of ponds.
  - Clean and chlorinate swimming pools, outdoor saunas and hot tubs.
  - Drain water from pool covers.
  - Use landscaping to eliminate stagnant water that collects on your property.
  - Make sure all windows and doors have screens, and that all screens are in good repair.

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### **West Nile Virus and Encephalitis**

Viral encephalitis or people infected with the West Nile Virus may not have any symptoms at all; mild cases may include a slight fever and/or headache. Severe infections are marked by a rapid onset of a high fever, head and body aches, and usually occur five to fifteen days after exposure. There is no specific treatment for viral infections, other than to treat the symptoms and provide supportive care. Those who may be most susceptible to encephalitis are infants, the elderly and persons with weakened immune systems.

### **Protecting Yourself**

Most mosquitoes do not transmit disease. Although it is not necessary to limit any outdoor activities (unless there is evidence of mosquito-borne disease), you should reduce your risk of being bitten by mosquitoes.

- 
- Minimize outdoor activities between dusk and dawn.
  - Wear shoes and socks, long pants and a long-sleeved shirt when outdoors for long periods of time, or when mosquitoes are most active.
  - Cover outdoor playpens with mosquito netting.
  - Consider the use of mosquito repellent when it is necessary to be outdoors, and use according to product directions.
- 

### ***Proper Use of Insect Repellents***

Insect repellents containing DEET can be effective, if used according to the manufacturer's directions. Products containing DEET have occasionally been associated with some health problems (skin reactions, including rash, swelling and itching; eye irritation; and less frequently, slurred speech, confusion and seizures). The following precautions are recommended when using insect repellents containing DEET:

- 
- Always follow the directions on the label.
  - Insect repellents are not recommended for use on children under 2 years old or for pregnant women.
  - Use sparingly on children under 6 years old (the American Academy of Pediatrics recommends that products with no more than 10 percent of DEET be used on any child).
  - Do not use excessive amounts.
  - Do not apply on broken or damaged skin.
  - Avoid application on face and hands.
  - Wash off when returning indoors.
  - Do not spray in an enclosed area or near food.
  - Apply products to the clothing of children rather than directly on the skin.
  - If you are outdoors for long periods of time and you swim or sweat, you may have to reapply the product as it will dilute.
  - Avoid applying repellent under clothes.
  - Avoid breathing mist when spraying repellent.
- 

If you believe someone is having an adverse reaction to a repellent containing DEET, wash the treated area immediately and contact your health care provider or the local Poison Control Center at:

**1-800-353-2722**

For more information about mosquitoes, West Nile virus, encephalitis, and insect repellents, call:  
New Haven Health Department  
Health Information Line  
54 Meadow Street  
New Haven, CT 06519  
(203) 946-7878

To report possible mosquito breeding sites or dead birds, call:

New Haven Health Department  
Bureau of Environmental Health  
(203) 946-8174

To report residential property that may harbor mosquito breeding sites (discarded tires, bathtubs, etc.) call:

Livable City Initiative (LCI)  
(203) 946-8386

Curbside pick-up of bulk trash items (tires, old appliances, furniture) may be scheduled by appointment only, call:

New Haven Department of Public Works  
(203) 946-7700

## FUN FACTS ABOUT MOSQUITOS

### **1. Mosquitoes are the deadliest animals on Earth.**

That's right, more deaths are associated with mosquitoes than any other animal on the planet. Mosquitoes may carry any number of deadly diseases, including malaria, dengue fever, yellow fever, and encephalitis. Mosquitoes also carry heartworm, which can be lethal to your dog.

### **2. Only female mosquitoes bite humans and animals; males feed on flower nectar.**

Mosquitoes mean nothing personal when they take your blood. Female mosquitoes need protein for their eggs, and must take a blood meal in order to reproduce. Since males don't bear the burden of producing young, they'll avoid you completely and head for the flowers instead. And when not trying to produce eggs, females are happy to stick to nectar, too.

### **3. Some mosquitoes don't bite humans, preferring other hosts like amphibians or birds.**

Not all mosquito species feed on people. Some mosquitoes specialize on other animals, and are no bother to us at all. *Culiseta melanura*, for example, bites birds almost exclusively, and rarely bites humans.

### **4. Mosquitoes fly at speeds between 1 and 1.5 miles per hour.**

That might sound fast, but in the insect world, mosquitoes are actually rather slow. If a race were held between all the flying insects, nearly every other contestant would beat the pokey mosquito. Butterflies, locusts, and honey bees would all finish well ahead of the skeeter.

### **5. A mosquito's wings beat 300-600 times per second.**

This would explain that irritating buzzing sound you hear just before a mosquito lands on you and bites.

### **6. Mosquito mates synchronize their wing beats to perform a lover's duet.**

Scientists once thought that only male mosquitoes could hear the wing beats of their potential mates, but recent research on *Aedes aegypti* mosquitoes proved females listen for lovers, too. When the male and female meet, their buzzing synchronizes to the same speed.

### **7. Salt marsh mosquitoes may travel up to 100 miles from their larval breeding habitat.**

Most mosquitoes emerge from their watery breeding ground and stay pretty close to home. But some, like the salt marsh mosquitoes, will fly lengthy distances to find a suitable place to live, with all the nectar and blood they could want to drink.

### **8. All mosquitoes require water to breed. Some species can breed in puddles left after a rainstorm.**

Just a few inches of water is all it takes for a female to deposit her eggs. Tiny mosquito larva develop quickly in bird baths, roof gutters, and old tires dumped in vacant lots. If you want to keep mosquitoes under control around your home, you need to **be vigilant about dumping any standing water every few days.**

### **9. An adult mosquito may live 5-6 months.**

Few probably make it that long, given our tendency to slap them silly when they land on us. But in the right circumstances, an adult mosquito has quite a long life expectancy, as bugs go.

### **10. Mosquitoes can detect carbon dioxide from 75 feet away.**

Carbon dioxide, which humans and other animals produce, is the key signal to mosquitoes that a potential blood meal is near. They've developed a keen sensitivity to CO<sub>2</sub> in the air. Once a female senses CO<sub>2</sub> in the vicinity, she flies back and forth through the CO<sub>2</sub> plume until she locates her victim.

Source: <http://insects.about.com/od/flies/a/10-facts-about-mosquitoes.htm>

# Insect Repellents

## A Guide to Using Insect Repellents Safely

Environmental & Occupational Health Program • July 2014



Bites from insects such as mosquitos and ticks can transmit diseases such as West Nile and Lyme. Therefore it is important to reduce your exposure to these insects. Insect repellents have a role in keeping insects away from you and your family. However, they have chemical ingredients and so must be used correctly to be safe.

### Prevent Bites

- Stay inside during the early morning and late afternoon when mosquitos are most active.
- Stay out of wooded and brushy areas where ticks are more likely to be found.

### Choose an Insect Repellent Carefully

- Read the label to check the ingredients and directions for use.
- Look for one of the 3 main active ingredients used - DEET , Picardin, or IR 3535.
- Buy a product with the least amount of active ingredient for the type of insect of concern and the amount of time you plan to stay outdoors.

### Use the Insect Repellent Correctly

- Use a pump spray instead of an aerosol spray.
- Put only on exposed areas of skin or on outside clothing.
- Do not allow children to handle the product.
- Do not use too much product.

### SAFETY

Insect repellents are generally safe **IF used according to the directions and the precautions taken as stated on the label.** Pay attention to the safety precautions for children. The Environmental Protection Agency (EPA) registration of the product assures that the product has been reviewed and proven to be effective and safe.

## Reducing Your Exposure to Insect Bites

- For mosquitos: Remove items from the yard that can collect water such as old tires, wading pools, and buckets  
 Keep door and window screens repaired  
 Avoid wearing scents and bright colored/flowered clothing
- For ticks: Wear light colored shirts and pants tucked into boots when walking in wooded areas  
 Check for ticks and shower after coming indoors; check pets  
 Keep your yard free of leaf litter and tall grass

## Choosing an Insect Repellent

Insect repellents are pesticides that must be registered by the EPA and should be used with caution. They come in many forms including pump sprays, aerosols, lotions, creams, liquids, solids and towelettes. The active ingredients in most insect repellents are DEET, Picardin, or IR 3535, for exposed skin and permethrin, for clothing only. Read the product labels carefully to determine the:

- Kind of insect(s) that are repelled
  - Active Ingredient (main chemical)
  - EPA registration number
  - Concentration of the ingredient: Repellents containing a higher percentage of active ingredient provide longer-lasting protection. For example, to repel mosquitoes a product with a 10% concentration may last 2 hrs; a 20% concentration might last 5 hrs. Use the lowest concentration that will get you the protection time you need.
- Note: A higher concentration is often required to repel ticks than to repel mosquitoes.



### [Search for a Repellent that is Right for You](#)

#### The Active Ingredients Found in Insect Repellents:

**DEET** (N,N-diethyl-meta-toluamide) repels biting pests such as mosquitoes and ticks when applied to skin or clothing. If used as directed, DEET is generally of low toxicity and considered safe by most public health agencies. However, DEET can irritate the eyes and has a pungent odor. Do not use concentrations above 30%.

**Picardin** repels a wide range of pests when applied directly to exposed skin but does not irritate skin or eyes, and has no odor. It is a good alternative to DEET.

**IR 3535** (3-[N-Butyl-N-acetyl]-aminopropionic acid, ethyl ester) is effective against mosquitos, ticks and biting flies. It can be an eye irritant but is not a skin irritant. It is a good alternative to DEET.

**Permethrin** is a repellent and insecticide that is applied ONLY to clothing, not exposed skin. It is the ingredient used in treated clothing to repel ticks and mosquitoes. Clothes should be washed separately. These products continue to repel and kill insects after several washings. It can also be applied to outdoor equipment such as tents.

**Botanical** (plant-based) products such as oil of lemon eucalyptus or the synthetic version (PMD) do not provide the same level of protection and may contain allergens. They have not been tested or registered by EPA. They should not be used on children under the age of three.





Using the insect repellent correctly:

- Read and follow all directions and precautions on the product label
- Apply outdoors
- Apply to face by putting on hands first and then rubbing on face. Do not spray directly onto face
- Do not apply near eyes or mouth; apply only to exposed skin or outside clothing
- Do not apply over cuts, wounds, or irritated skin
- Do not apply near food
- Use just enough repellent to cover exposed skin and/or clothing.
- **Do not use under clothing**
- After returning indoors, wash treated skin with soap and water or bathe
- Wash treated clothing before wearing it again

**HEALTH EFFECTS**

If you (or your child) get a rash or other reaction from a repellent, stop using the repellent, wash the repellent off with mild soap and water, and call a local poison control center for further guidance. If you go to a doctor, it might be helpful to take the repellent with you.

Repellents with a concentration of DEET over 50% have caused skin reactions, eye irritation, and blisters; concentrations over 95% may cause serious side effects such as seizures.

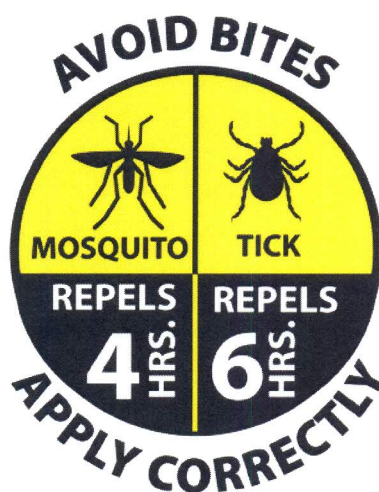
**Children and Insect Repellent**

- The American Academy of Pediatrics (AAP) recommends that insect repellents not be used on infants under the age of 2 months.
- Use a product with the lowest concentration of active ingredient that is effective for the length of time you will be out; if using DEET, keep the concentration to below 30% for children.
- When using on children, apply to your own hands and then put it on the child. Do not apply to the hands or near eyes and mouth of young children.
- Use netting on infant strollers and carriers.
- Always store insect repellents safely out of the reach of children.



**Other Considerations:**

- Do not use products that have insect repellent as part of sunscreen, lotions or other body products. Instead, apply sunscreen or lotion and then repellent.
- Do not use outdoor foggers, they contain toxic ingredients; do not use candles, they can be respiratory irritants and are only mildly effective as a repellent.
- Electronic bug zappers, treated wristbands and ultrasonic devices are ineffective.



Proposed EPA labeling for insect repellents

**For More Information:**

- [CDC Protection against Mosquitoes, Ticks, & Other Insects & Arthropods](#)
- [EPA Insect Repellents: Use and Effectiveness](#)
- [National Pesticide Information Center Choosing and Using Insect Repellents](#)
- [EWG's Guide to Bug Repellents](#)