

Mosquitoes

in our communities


The handy guide for busy families, concerned citizens, community leaders, and businesses

A hand with a mosquito on the index finger points towards a mosquito on a ruler. The ruler shows the mosquito is very small, less than an inch long.

This **SMALL** insect has a **LARGE** impact on our way of life in San Gabriel Valley

Get the Answers You Need

- Which insect repellent works best?
- Should I worry about West Nile virus, Zika or dengue fever?
- How do I get rid of mosquitoes?

A mosquito is shown on a ruler for scale.

Providing the highest level of protection against vectors and vector-borne diseases in San Gabriel Valley

www.SGVmosquito.org

626-814-9466



Know The Biology

No one welcomes mosquitoes into their neighborhood. These insects leave itchy bites and have the potential to transmit (spread) diseases to people and pets.

There are more than 3,500 species of mosquitoes worldwide. California is home to more than 50 species, at least 15 of which are found in Los Angeles County. A few species have negative impacts on human health. Working with residents, the San Gabriel Valley Mosquito and Vector Control District monitors and controls mosquitoes year-round.

To understand how to keep your home bite-free, let's go over some basics.

What is a Vector?

A vector is any animal (including insects) capable of transmitting a disease-causing pathogen or “germ” to humans and other animals.

Doing Our Part

Since 1989, the San Gabriel Valley Mosquito & Vector Control District has controlled and monitored populations of the following vectors in your communities:

Mosquitoes



1/4 - 1/2 Inch

Black Flies



up to 1/4 inch

Know The Threat

Mosquito Life Cycle: How Mosquitoes Grow

Egg Raft  (laid on surface of stagnant water)

or Individual Eggs  (laid on containers above water line)

All mosquitoes need non-moving, trapped water with high levels of bacteria and algae (stagnant water) to complete their life cycle. After a female mosquito takes a blood meal (bites), she will look for stagnant water to lay her eggs. Mosquitoes can lay their eggs in containers as small as a **bottle cap!**



Larva (in water) 

Larvae (“wigglers”) are often found at the surface of the water where they breathe. Larvae feed on bacteria and algae in the water and shed their skin four times as they grow.

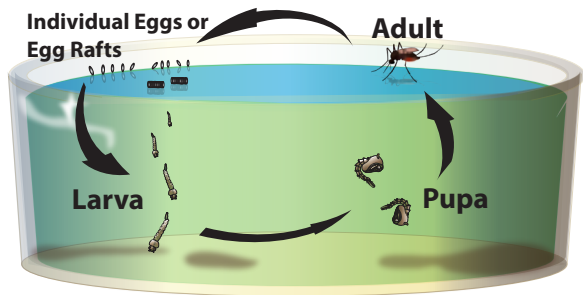
Pupa (in water) 

Pupae (“tumblers”) do not feed, but still breathe at the surface of the water.

Adult 

Most people recognize adult mosquitoes. Mosquitoes feed on plant juices for food. **Only female mosquitoes bite** and can transmit diseases to people and pets. The female mosquitoes need the protein found in blood to produce eggs.

It takes only    **days!**



Did you know?

Vector control delivers free mosquito fish that eat mosquito larvae and pupae in your fountains & ponds!



Meet The Insects That

“We have mosquitoes?” Yes! At least 15 different species of mosquitoes live in Los Angeles County. However, for most residents, **two groups (genera)** of mosquitoes pose the most significant public health risks: *Aedes* and *Culex*.

Vector control continues to monitor and control these mosquitoes wherever they are found. These threats exist where you live, sleep, work and play.

Aedes Mosquitoes

Residents can quickly identify *Aedes* mosquitoes by their black-and-white stripes. *Aedes* mosquitoes thrive in man-made containers and do not fly far. If you are being bitten, there is probably stagnant water in your yard or patio.



A Neighborhood Invasion: *Aedes* mosquitoes do not belong in our Los Angeles County environment. People accidentally bring the eggs into our area in shipments of plants or tires, and while traveling.

Known to Transmit:

To People: Zika, yellow fever, dengue fever, and chikungunya

To Animals: Canine heartworm

Found Primarily:

Indoors and outdoors - Prefers small containers with stagnant water

How They Bite:

Below the waist, multiple times and aggressively during the day




Primarily Bite:

People, occasionally other mammals



Lay Their Eggs:

Individually - Eggs can survive on containers/plants for years 

Life Cycle:

From egg to adult in about 7 days

Bug Us The Most

Culex Mosquitoes

Culex mosquitoes are the most prevalent mosquito in our cities. They thrive by growing in natural and man-made areas where stagnant water collects. *Culex* mosquitoes can fly from a few blocks to 10 miles in search of a blood meal. While these mosquitoes primarily bite birds, they occasionally bite people, which is how they transmit (spread) West Nile virus.



Did you know?

The mosquito species in our cities do not swarm. If you see swarming insects, they're most likely harmless midges or gnats.

Known to transmit:


To People: West Nile virus, St. Louis encephalitis and Western equine encephalomyelitis

To Animals: West Nile virus (horses and birds)

Found Primarily:

Outdoors - Prefers larger containers or sources such as pools, ponds and gutters with stagnant water

When They Bite:

Dawn and dusk 

Primarily Bite:

Birds, people and other animals 

Lay Their Eggs:

As egg rafts floating on water 

Life Cycle:

From egg to adult in about 7 days

It Only Takes One Bite

Thousands of people become ill or die from mosquito-borne diseases every month. Understanding disease cycles is an important step in protecting yourself and your family. Vector control traps and tests the mosquitoes in your community to determine the presences of dangerous pathogens. Using test results, we can more effectively prevent local outbreaks. There are a few viruses that are considered significant public health threats.

West Nile Virus

Culex mosquitoes can transmit West Nile virus (WNV) to people when they bite. Symptoms include body aches and fever. More severe cases can result in paralysis, coma or death. There is no cure or vaccine for humans.

Heartworm in Pets

Certain *Aedes* mosquitoes can transmit a roundworm that lives in the hearts of dogs and cats. Heartworm is transmitted from one animal to another by the bite of a mosquito.



Zika

People infected with Zika can develop mild to moderate symptoms that include body rashes, conjunctivitis (red eye), and fever. Fetuses infected with Zika have a higher risk of developing severe birth defects. There is no cure or vaccine.

Other Diseases of Concern

- Yellow fever
- Dengue fever
- Chikungunya
- St. Louis encephalitis
- Western Equine encephalitis

To Learn More:

www.cdc.gov

www.publichealth.lacounty.gov

Remember!

Only **female** mosquitoes bite and can transmit diseases to people and pets.

Don't Risk Your Health



10 Shark



10 Wolf



100 Elephant



100 Lion



1,000 Crocodile



25,000 Rabid Dog



50,000 Snake



475,000 Human



725,000 Mosquito

World's Deadliest Animals

Number of people killed by animals per year

Source: World Health Organization

Protect Your Family &

Did you know patios and yards are the #1 source of mosquito problems? While the San Gabriel Valley Mosquito and Vector Control District protects your health year-round, you can do your part by hunting down these common sources once a week.

Where Do Mosquitoes Grow?

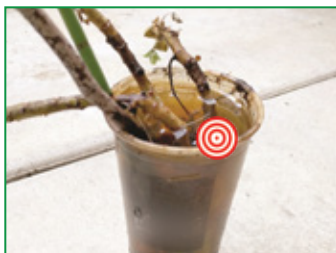
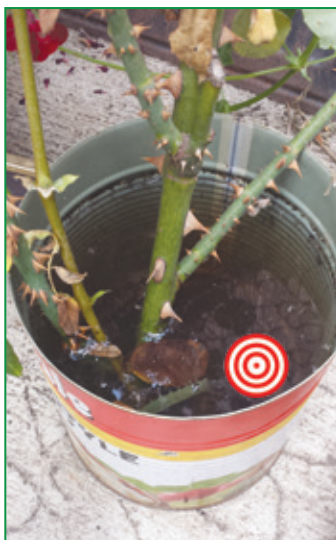
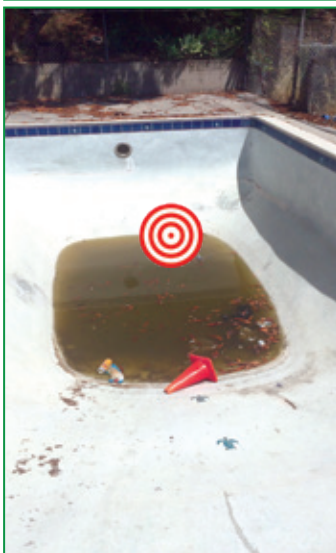
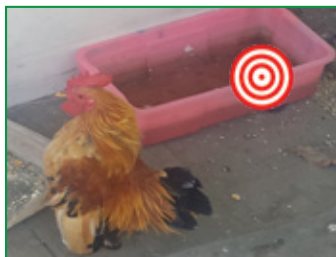
In anything that can hold water for more than 5 days

Avoid an embarrassing yard or patio full of mosquito sources:

- Tightly screen/seal containers
- Drill holes in bottoms of containers
- Dispose of old containers not in use
- Remove all stagnant water!



Take Back Your Home



Stop The Bites And

Choosing a repellent depends on age, activities, and the type of pest you'll encounter. Use this guide to start your search for the most effective repellent ingredients registered with the U.S. Environmental Protection Agency (EPA) and recommended by the Centers for Disease Control and Prevention (CDC).

ALWAYS FOLLOW LABEL INSTRUCTIONS

Repellent Facts



Bracelets only protect the area around the wrist.



Belt Fans and **Candles** only protect the area immediately around the device. A strong breeze can easily render these useless.



Citronella and other “mosquito plants” will not repel mosquitoes on their own. Leaves must be crushed and repellent oils extracted to be effective.



Bug zappers rarely trap and kill mosquitoes. Mosquitoes are drawn to carbon dioxide (what we breathe out) and body heat, not the light emitted by zappers.

More Ways to Stay Safe

In addition to eliminating stagnant water and using insect repellent, follow these steps to prevent further mosquito bites at home and when traveling:

- Maintain screens on windows and doors
- Wear loose-fitting long sleeves and pants
- Once a month, inspect your rain barrels to make sure lids are tightly screened and in good repair with no holes
- Watch CDC's travel advisories and follow their recommendations



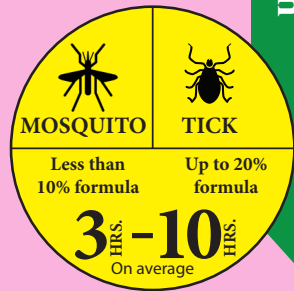
Repel The Mosquitoes

Effective Repellent Ingredients

Picaridin

For many people, Picaridin is an effective alternative to DEET. Picaridin is generally odorless and colorless, allowing many brands to offer pleasantly scented options.

 **For Children:** Over 2 Months

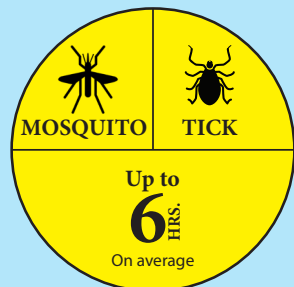


Oil of Lemon Eucalyptus

This is a natural plant-based repellent that is available as pump sprays and lotions.

Oil of lemon eucalyptus repellents provide similar protection to products containing DEET.

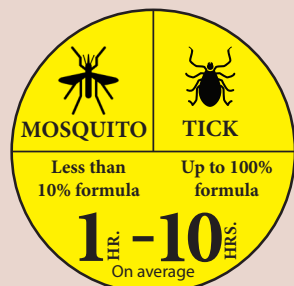
 **For Children:** Over 3 years



DEET

Repellents containing DEET are available in a variety of forms. DEET is widely used against mosquitoes and other biting insects.

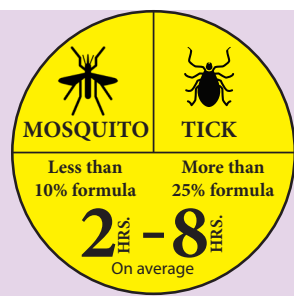
 **For Children:** Over 2 Months



IR3535

Repellents containing IR3535 are available as aerosol, pump sprays and wipes.

 **For Children:** Over 6 Months

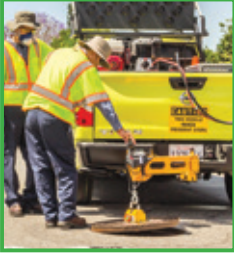


More info: www.epa.gov/insect-repellents

Controlling Mosquitoes

You're not alone in the fight against mosquitoes. We work **year-round** because mosquitoes can survive the winter in Los Angeles County. We use an integrated approach by monitoring your community for disease, controlling for vectors, and educating the public.

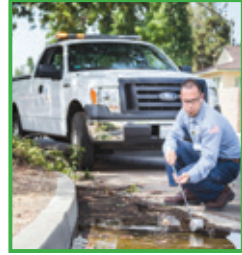
Monitoring & Controlling Vectors



Underground storm drains



Waterways (rivers and channels)



Street gutters



Pools and ponds



Mosquito traps for disease testing



Mosquito species identification

Prevention Starts with Education

EcoHealth Vector Education School Programs



Students “bug out” with an Education Specialist in grade-specific (K-12) curriculum aimed at advancing California Next Generation Science Standards (NGSS). www.VectorEducation.org

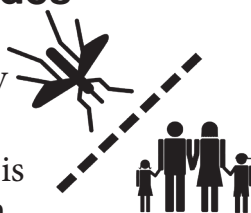
Presentations, Workshops and Fairs

We host booths, speak to clubs and other community organizations. For more information, visit www.SGVmosquito.org.

Protecting Your Community

Public Health Pesticides

As part of our Integrated Vector Management (IVM) strategy, we always attempt to physically remove the sources of mosquitoes.



When physical control isn't possible or if there is a serious and immediate threat to public health, we will use pesticides to eliminate the public health threat.

Fighting Larvae and Pupae

A majority of our pesticide use is on immature stages of mosquitoes. Tackling mosquitoes in stagnant water is extremely effective using the following materials.

B.t.i. (*Bacillus thuringiensis*) and B.s. (*Bacillus sphaericus*)

Naturally-occurring soil bacterium that targets mosquito larvae

Methoprene

Mosquito juvenile growth hormone

Spinosad

Naturally-occurring bacterium

Surface film oil

Suffocates larvae and pupae

Mosquito fish

These hardy fish will gobble up mosquito larvae and pupae in your pond and fountain

Fighting Adult Mosquitoes

It is more difficult to control mosquitoes when they are adults and flying, but tools are available to control mosquito infestations or disease outbreaks. These materials target the adult mosquitoes (adulticides).



Most applications of adulticides use less than 1 fl. oz. (2 tbsp) per acre. They are dispersed in diluted amounts as ultra-fine droplets, which break down to harmless ingredients very quickly in the environment.

Pyrethroid and Pyrethrin

Derived from chrysanthemum flowers

Organophosphates

Highly effective at controlling mosquito populations

To minimize our use of adulticides, please do everything you can to eliminate stagnant water on your property and encourage your neighbors to do the same.

For more information, visit npic.orst.edu

Don't Be Fooled

There are many insects that look like mosquitoes, but they are not! Don't let these mosquito imposters bug you. These insects are harmless, have short life spans, and will usually go away in a couple weeks.

Midge

Midges swarm, but do not bite.

Mosquitoes in LA County cities do not swarm



up to 1/2 inch



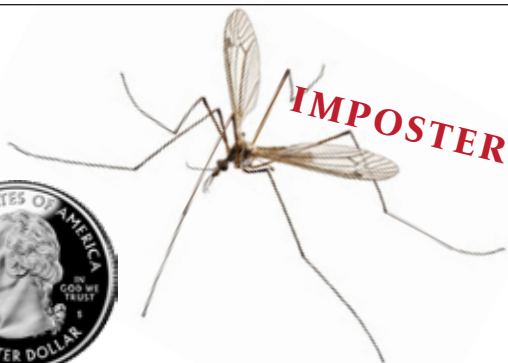
Crane Fly

Also called Mosquito Hawks or Mosquito Eaters

It's a myth: Crane flies do not bite and they do not eat mosquitoes!



up to 2 inches



Fungus Gnat

Fungus gnats swarm, but do not bite.

Mosquitoes in LA County cities do not swarm



up to 3/8 inch



Mosquito Source Checklist

Most mosquito problems exist in backyards and patios. Take 10 minutes weekly to Tip 'n Toss. Tip out stagnant water, and toss, recycle or safely store containers that can collect water. This will greatly reduce the risk of getting sick. Here are the top mosquito problems commonly found around a home:



- | | |
|---|--|
| <input type="checkbox"/> Rain barrels and containers | <input type="checkbox"/> Tarps |
| <input type="checkbox"/> Trash and trash bins | <input type="checkbox"/> Old tires |
| <input type="checkbox"/> Roof rain gutters | <input type="checkbox"/> Ponds |
| <input type="checkbox"/> Street gutters | <input type="checkbox"/> Swimming pools and spas |
| <input type="checkbox"/> Yard drains | <input type="checkbox"/> Wheelbarrows |
| <input type="checkbox"/> Bird baths and fountains | Other Mosquito-proofing Tips |
| <input type="checkbox"/> Plant containers and plant saucers | <input type="checkbox"/> Fix broken window screens |
| <input type="checkbox"/> Troughs and pet water bowls | <input type="checkbox"/> Fix leaking water |
| <input type="checkbox"/> Toys that hold water | <input type="checkbox"/> Inform your neighbors |



No Stagnant Water. No Mosquitoes. No Diseases.

Read This Mosquito Guide

Do any of these fit into your lifestyle or future plans? If you answer “Yes” to at least one of the following, then this guide is for you!



Travel



Have a family



Own or rent home



Go to outdoor events



Collect rain water



Share plant cuttings



Own pets



Hike or camp

Mosquito Control is a Year-round Effort in San Gabriel Valley

You play a vital role in preventing a
disease outbreak in your neighborhood



Did You Know...?

- San Gabriel Valley Mosquito and Vector Control District is one of five vector control districts in L.A. County.
 - Our agency covers 26 cities and unincorporated parts of Los Angeles County in San Gabriel Valley.
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Report Mosquito Issues & General Info

SGVMosquito.org | 626-814-9466

Educators: VectorEducation.org

1145 N. Azusa Canyon Road

West Covina, CA 91790