



MOSQUITOES

and Mosquito-Borne Diseases



THE FOLLOWING ARE EXCERPTS FROM THE MOSQUITO BOOKLET PUBLISHED BY THE SAN GABRIEL VALLEY MOSQUITO AND VECTOR CONTROL DISTRICT

Fight the Bite! Don't Breed Mosquitoes

A BIT ABOUT THE BITE!

That itchy bump you get after a bite is a reaction to the saliva a mosquito injects when it feeds. Viruses and other pathogens can also be transmitted through mosquito saliva.

FIND SOURCES!

Look for anything that can hold water for more than a few days. Buckets, dirty swimming pools, tires, trash cans, and other containers should be drained and/or cleaned weekly.

AVOID THEM!

Try to limit outdoor activity at dusk and dawn during peak mosquito season (spring through fall).

BLOCK 'EM OUT!

Make sure windows and doors have tight fitting, intact screens. This will help keep other unwanted critters out too!

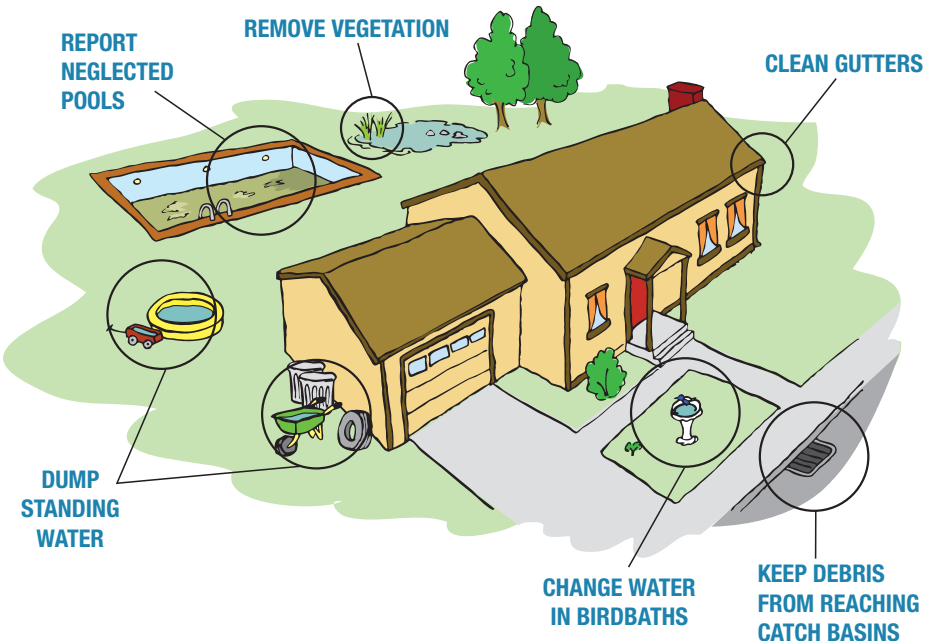
USE MOSQUITOFISH!

These small, hardy fish can eat hundreds of mosquito larvae a day in a backyard pond or other man made source of water.

Call us, we provide them at no charge to our residents.

WEAR REPELLENTS!

Wear long sleeves and pants and use repellents when outdoors. Remember to read the labels and carefully follow instructions on all insect repellents.



Common Residential Mosquito Sources

Residential yards are often the #1 source of mosquito production in a community. Anything that can hold a half inch of water for more than five days can be a source of mosquitoes. This includes puddles in lawns and gardens, flower pot saucers, neglected swimming pools and spas, bird baths, clogged rain gutters, and more. Maintain, manage, or eliminate all types of standing water regularly.

Use this home & garden checklist to help make your activities around your home safer & more enjoyable.

- Trash bins:** Keep lids shut tightly and remove water that accumulates inside. Drill several drain holes in the bottoms.
- Boats:** Check and remove water weekly from boat covers.
- Fountains and bird baths:** Clean or hose out weekly.
- Rain gutters:** Keep clear of leaves and other debris.
- Potted plant saucers:** Don't over water. Flush out saucers with a hose or drill holes in the bottom to allow for better drainage.
- Tires:** Drill holes in tire swings. Recycle used tires or store in a covered area.
- Water bowls for pets:** Rinse and fill with fresh water 1 to 2 times a week.
- Water troughs:** Stock with free mosquitofish from the District.
- Leaky hoses:** Replace damaged hoses and fix leaky faucets and pipes.
- Low areas:** Do not over water lawns or gardens.
- Ponds:** Stock ornamental ponds with mosquitofish. Keep ponds clear and free of excess vegetation.
- Neglected swimming pools and spas:** Maintain even when not in use. Remove standing water on top of covers. Report neglected pools or spas by contacting the District.
- Containers:** Store containers upside down, cover or place in a sheltered area.
- Rain barrels:** Cover tightly with a fine mesh screen.
- Chain link fence:** Cover hollow chain link fence posts with caps.
- Drains:** Make sure that drains are not clogged by debris and flow freely.
- Flat roofs:** Water may puddle on flat roofs during the rainy season. Inspect weekly and remove any standing water.
- Lighting:** Check garden lights and eliminate water from tops of fixtures and from inside floodlights.
- Sculptures:** Check for water that may collect in lawn ornaments. Drain or flush out weekly.
- Screens:** Install and maintain tight fitting window and door screens.
- Rot hole in trees:** Be aware that water can collect in treeholes, crotches and dead tree stumps. Check with an arborist for best way to manage water or fill cavities.
- Water under home:** Use a sump pump to remove water.
- Septic tanks:** Screen vent pipes with a fine mesh screen. Cover exposed tanks or manhole lids with plastic or a similar material and secure in place. Place several inches or more of dirt or sand over the top of the area.
- Wheelbarrows:** Remove water that collects inside or store upside down.

About Repellents

Choose and use a repellent containing one of the following active ingredients so you can spend time enjoying the outdoors knowing you are protected from biting insects and the diseases they may transmit.

DEET

DEET-based repellents have provided effective, dependable protection since the 1950s.

Repellents containing DEET are available in various concentrations that repel insects equally well for the length of time they are needed.

DEET-based products are available in a wide variety of forms, including aerosol and pump sprays as well as wipes.

DEET is the most effective and best-studied repellent available.

Repels Mosquitoes	Yes
Repels Ticks	Yes
Ages for Children	Over 2 months

Hours of Protection	Against Mosquitoes	Against Ticks
Less than 10% formula	1–2 hours*†	1–2 hours* for some products
15–20% formula	2–6 hours*†	X
20–25% formula	5–8 hours*†	X
25–95% formula	6–10 hours* for most products	2–4 hours* for some products
95% or more formula	8–10 hours*	5–10 hours* for most products

IR3535®

IR3535®, also called Merck 3535, is registered with the EPA as a biopesticide, but has been used as a synthetic repellent in Europe for over 20 years with no significant harmful effects.

IR3535® was approved for use in the United States in 1999, and is currently available in aerosol, pump sprays and wipes.

While EPA recognizes the use of IR3535® as safe for adults and children, ***be advised that it is an eye irritant.***

Repels Mosquitoes	Yes
Repels Ticks	Yes
Ages for Children	Over 6 months

Hours of Protection	Against Mosquitoes	Against Ticks
Less than 10% formula	2–4 hours*	2–4 hours*
15–20% formula	4–6 hours*	X
20% or more formula	6–8 hours*	8–12 hours* for some products

- * These protection times have been approved for product labels. These times are based on the technical information provided to the EPA by the companies on the effectiveness of the product against mosquitoes and/or ticks. Time frames were consolidated for all brands with the same percentage formulas.
- X** An “X” indicates that the majority of repellent product in this category has not been registered for protection from ticks.
- † Information provided by the Centers for Disease Control and Prevention.

Oil of Lemon Eucalyptus/PMD

Oil of Lemon Eucalyptus is a natural plant-based repellent that is derived from the oil of the leaves of the *Eucalyptus citidora* tree.

Repellents containing oil of lemon eucalyptus provide protection similar to that of products containing low concentrations of DEET.

These products tend to have a strong botanical smell and are available in a wide variety of formulations, including pump sprays and lotions.

Repels Mosquitoes	Yes
Repels Ticks	Yes
Ages for Children	Over 3 years

Hours of Protection	Against Mosquitoes	Against Ticks
20% or more formula	2-6 hours*†	6 hours* for <i>some</i> products

Picaridin/KBR 3023

Picaridin is a synthetic repellent developed in the 1990s that has been commercially available in the United States since 2005. Picaridin is colorless, nearly odorless, and is available in multiple formulations. It provides long-lasting, effective protection similar to that of products containing identical concentrations of DEET.

Be advised that no specific recommendations regarding the use of Picaridin on children have been issued by the manufacturers or the CDC.

Repels Mosquitoes	Yes
Repels Ticks	Maybe
Ages for Children	n/a

Hours of Protection	Against Mosquitoes	Against Ticks
Less than 10% formula	1-2 hours†	X
15% formula	2-4 hours*	X

Choose the right repellent for your activity

If your activity involves:

- Extended Hikes
- Overnight Camping
- Heavy Yard Work
- Barbecues
- Late Night Outdoor Activity
- Outdoor Festival
- Sitting at the Park
- Light Yard Work
- Stroll Around the Neighborhood
- Waterplay

Use products such as:

DEET, IR3535®

PICARIDIN, DEET, IR3535®

Oil of Lemon Eucalyptus

Some formulations of DEET

Reduce, Reuse & Recycle Water RESPONSIBLY

Capturing and storing water has become increasingly important as communities face the threat of water shortages caused by drought and waste. Mosquitoes will readily reproduce in water capture devices, increasing the risk of disease transmission to humans and animals in the area. We must consider all factors as we strive to maintain a sustainable and healthy environment.

Private property owners and home owner associations (HOAs) must maintain water storage/infiltration devices installed on their property. To ensure regular inspections, please report their location and any mosquito problems promptly to the District.

RAIN BARRELS

- Tightly screen all openings on rain barrels with 1/16th inch mesh to prohibit mosquito entry. Check regularly and replace torn or degraded screens.
- Remove water that pools on the lid at least once weekly
- Keep gutters and downspouts clean and free of debris

WATER TANKS (CISTERNS)

- Cisterns (above and below ground) must be tightly sealed to keep mosquitoes out.
- Cover all inlets, outlets, and vents with tight-fitting 1/16th inch mesh screening. Inspect regularly to ensure there are no cracks and seals remain intact.
- The cistern must be accessible for periodic maintenance and inspection for mosquito breeding.

BEST MANAGEMENT PRACTICES (BMPs) FOR MOSQUITO CONTROL

Stormwater retention/treatment devices must be designed and properly maintained to minimize mosquito production, use of mosquito larvicides, mosquito-borne disease transmission, and other public health issues.

- Select and maintain proper slope for all water conveyances
- Ensure swales, ditches, and rain gardens are maintained properly and drain completely within 3-4 days
- Thin emergent vegetation and remove silt annually from stormwater detention basins.
- Select native, low-growing vegetation. Avoid cattails or other invasive species such as creeping water primrose, water hyacinth, and parrot feather which grow rapidly, can be difficult to maintain, and prohibit effective mosquito control and inspection.
- Underground vaults/sumps must be cleaned out regularly. Select devices designed to drain completely.