

# REPELLENT SAFETY

- Always follow label instructions when using repellents.
- Apply repellents only to exposed skin and/or clothing.
- Do not apply repellents over cuts, wounds or irritated skin.
- Do not spray repellent directly on your face—spray on your hands and then apply to face. Use repellent spray sparingly around eyes, mouth and ears.
- Children should not handle repellents. Apply repellent to your own hands first and then put it on the child. You may not want to apply to children's hands.
- Use separate repellent and sun-screen products because they need to be reapplied at different times.
- Do not spray aerosol or pump products in enclosed areas.
- After using repellents, wash treated clothing before wearing again.
- If you or your child suffers an adverse reaction following repellent use, discontinue use, wash affected areas and contact your physician or a local poison control center.

# CHOOSE THE RIGHT REPELLENT FOR YOUR ACTIVITY

## DEET, IR3535®

- Extended Hikes
- Overnight Camping

## Some formulations of DEET

- Waterplay

## PICARIDIN, DEET, IR3535®

- Heavy Yard Work
- Barbecues
- Late Night Outdoor Activity
- Outdoor Afternoon Festival

## Oil of Lemon Eucalyptus

- Sitting at the Park
- Light Yard Work
- Stroll Around the Neighborhood

# FIGHT THE BITE

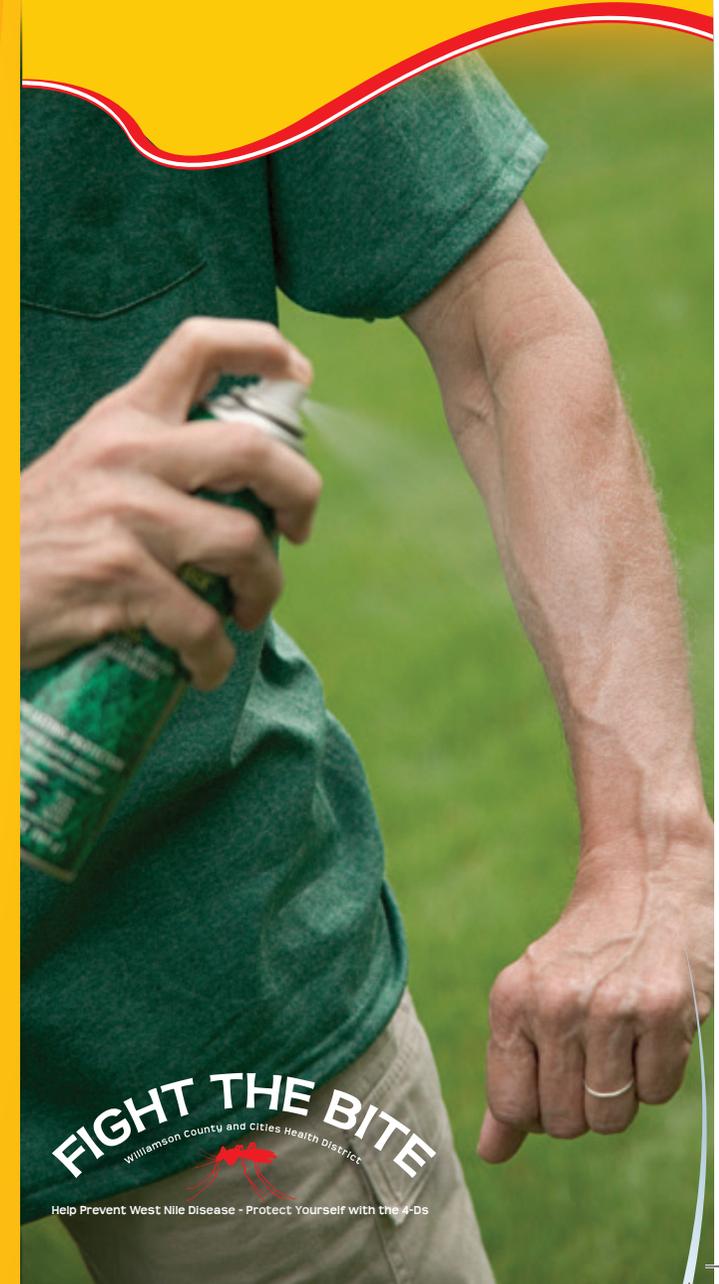
by practicing the 4Ds of protection:

- 1. DRAIN** standing water on your property so mosquitoes won't breed
- 2. DEFEND** using an EPA-approved insect repellent
- 3. Stay indoors at DUSK and DAWN**
- 4. DRESS** in long sleeves and pants and spray insect repellent on your clothes



Williamson County and Cities  
Health District  
Mosquito Management Program  
100 West 3rd Street  
Georgetown, TX 78626  
www.wcchd.org  
512-943-3622

# CHOOSING THE RIGHT REPELLENT



**FIGHT THE BITE**  
Williamson County and Cities Health District  
Help Prevent West Nile Disease - Protect Yourself with the 4-Ds

# THE BEST REPELLENT IS THE ONE YOU WILL ACTUALLY USE.

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 two months

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

## 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

\* 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	Maybe
Ages for Children	Over three years

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

## 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	Maybe
Ages for Children	Over six 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*	2-4 hours* <i>for some products</i>