

Preventing Mosquito, Tick and Other Insect Bites

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Bites are more than itchy nuisances. They also pose a health threat since mosquitoes, ticks and other insects can transmit many diseases.

Travellers often face different diseases abroad than those they encounter at home. Many of these are transmitted through the bite of a mosquito, tick or other insect. Some of these diseases can be avoided by vaccination or taking preventative medication. However, other diseases cannot, and vaccines and medication do not provide 100% protection. To stay healthy, it is important to avoid insect bites.

Know their habitats and habits

Understanding your environment can lower your risk of bites. Ticks live in wooded areas, shrubs and grasses. Mosquitoes breed in stagnant water, such as swamps and open water containers in residential areas.

Different types of mosquitoes bite at different times of the day. For example, those that spread Japanese encephalitis, malaria, and West Nile bite at night (from "dusk until dawn"). Mosquitoes that spread Chikungunya, dengue fever, yellow fever, and Zika bite during the day (primarily at dusk and dawn), but they can also bite during the night. Note that there can be several types of mosquitoes in one area. Practise bite prevention measures at all times of the day.

Preventing bites while outdoors

- Wear clothing that covers most of your body (long sleeves, long pants, socks, and closed shoes). Tuck pant legs into socks for added protection.
- Use an effective insect repellent. In general, the higher the concentration of the active ingredient in a product, the more long-lasting and effective it is. Follow the instructions on the product label. Reapply after swimming or excessive sweating. The US Centers for Disease Control and Prevention (CDC) lists several active ingredients it considers to be effective mosquito repellents. They have differing efficacy against ticks and other insects.
 - **DEET** (N,N-diethyl-m-toluamide).
 - **Picaridin** also called Icaridin (KBR 3023, or 2-(2-hydroxyethyl)-1-piperidinecarboxylic acid 1-methylpropyl ester).
 - **PMD** (para-Menthane-3,8-diol) - a derivative of oil of lemon eucalyptus. (Note that "pure" oil or "essential oil" of lemon eucalyptus is different and it is not known if it is safe and effective)

- **IR3535** (3-[N-Butyl-N-acetyl]-aminopropionic acid, ethyl ester) - A "biopesticide" made from naturally occurring materials.
- **2-undecanone** – also called methyl nonyl ketone. Derived from wild tomato plants.

- Consider treating clothing and bed nets with an insecticide. These are available as both soaks and sprays, and usually last through several washings. Always follow the manufacturer's instructions.
- Insect repellents can be used with sunscreens. Apply the sunscreen first. Be aware that sunscreen may be less effective when used together with DEET, so you may need to reapply it more often than usual.

Once you return indoors, check your clothing and body for ticks. If you find one, remove it safely and promptly. Do not squeeze the tick as this increases the risk of allergy/allergic reaction.

Recommendations on tick removal differ slightly between local authorities.

- Australia recommends removal by freezing, using a special spray containing ether – this causes the tick to drop off (see the [video](#)).
- Other authorities, including Canada, United States and United Kingdom advise using fine-tipped tweezers or a tick-removal tool. Place the tweezers/tool gently under the tick, as close to the skin as possible, and lifting the tick straight out – do not squeeze or twist. See the [CDC advice article on tick removal](#).

Prevent bites while you are indoors or asleep

- Use fly-wire (mosquito netting) on all windows.
- Use "knock-down" aerosol spray or electric insecticide vaporisers to kill insects in your room.
- Use air-conditioning when possible. It may reduce insect and tick bites.
- Consider sleeping under an insecticide-treated bed net. Pretreated nets are available, some of which can last three to five years through repeated washings. To ensure insects cannot enter any part of the net, tuck it under the mattress or make sure it touches the ground.
- If you are living in an area with sandflies, consider using a bed net with fine mesh. Sandflies are about one-third the size of mosquitoes and can fly through standard mosquito nets (and some other screens). At least 18 holes to the linear inch are required to prevent sandflies from entering.

Disclaimer

This information has been developed for educational purposes only. It is not a substitute for professional medical advice. Should you have questions or concerns about any topic described here, please consult your healthcare professional.