



WHY USE INSECT REPELLENT?

Insect repellents help reduce exposure to mosquito bites that may spread illnesses such as dengue and malaria.

Which insect repellent should I use?

We recommend using repellents that have been shown to be effective in scientific trials. Of the insect repellents widely available in Singapore, DEET is the repellent that is most effective.

What is DEET?

DEET (chemical name N, N-diethyl-meta-toluamide) is the active ingredient in many insect repellents. DEET is designed for direct application to the skin to repel insects, rather than kill them. In particular, it protects against mosquitoes and tick bites. Products containing DEET are available to the public in a variety of liquids, lotions, sprays and impregnated materials (eg. wrist bands). Concentrations of DEET in products that are designed for skin application to the skin range from 4% to 100%.

What does the DEET concentration mean?

The concentration of DEET in a product indicates how long the product will be effective. A higher concentration does not mean the product will work better, instead, it means that it will be effective for a longer period of time. Therefore, depending on the length of time a person is outdoors, a product containing a lower concentration of DEET may need to be applied more frequently. Typically, 10% DEET will provide protection for two hours, 20% DEET will provide protection for 4-5 hours and only marginally longer up to 50%.

What are the side effects of DEET?

Using insect repellents containing DEET are not harmful if the label directions are followed and the product is used safely. In rare cases DEET products may produce skin rashes, blisters and mucous membrane irritation if products are used with a high concentration of DEET or by exposure to excessive amounts.

In very rare circumstances, slurred speech, confusion and seizures have been associated with the use of DEET but these serious side effects have occurred in people who ingested DEET or used products with 95 percent DEET or more.

DEET use in children

Insect repellents containing DEET have been tested and approved as safe for children (it is not recommended for babies less than 2 months old) but you should still take some precautions with them.

General instructions for DEET use include:

- Choose a repellent with no more than 10%-30% concentration of DEET. Use a lower concentration of DEET if the child will be outdoors for only an hour or two. If they are outside for longer, consider a repellent with a slightly higher concentration of DEET (the higher

concentration means that it will last longer). Concentrations higher than 30% are not more effective and the chemical (absorbed through the skin) can be toxic. Be sure to follow the directions on the label.

- Generally, repellent with DEET should not be applied more than once daily.
- Do not allow children to apply the insect repellent to themselves
- Do not apply on face, under clothing, on cuts or irritated skin.
- Do not apply to the child's hands – that way, they are unable to ingest it if they put their hands in their mouth or cause irritation if they run their eyes.
- Apply the repellent in an open area so that your child do not breathe it in.
- Wash your child's skin with soap and water when they return from outdoors. Wash all clothing before it is worn again.
- Do not use on children younger than 2 months of age (protect infants from mosquito bites by using a carrier draped with mosquito netting with an elastic edge for a tight fit)
- Always apply the lowest effective concentration
- Safe for expectant mothers when used as directed

Natural repellents

If you do not want to use chemical ingredients, you can use natural products formulated as oils, cream, patches or candle. Those for the skin tends to provide short-lived protection so frequent reapplications are required.

These natural products include:

- Oil of lemon eucalyptus provides protection for 1-2 hours. There is also no safety data on its use on children – but do not use in children younger than three years of age
- Citronella has also been shown to be effective but only for much shorter periods of time, 30 minutes. Citronella shows little toxicity but may cause skin irritation.
- Peppermint
- Lemongrass
- Cedar
- Lavender
- Geranium
- Soya bean oil

To make sure you are not allergic to any of these natural repellents, always do a spot test on a small patch of skin for 1-2 days before full on usage. If you suspect an allergic reaction, stop using it, wash the area and see your doctor for advice.