



FAQ 8. How can I avoid mosquito bites?

Probably the simplest action for avoiding mosquito bites is to **try to avoid areas where mosquitoes are most active**, such as near coastal marshes, wet woodlands or other swampy locations. If you happen to live in a mosquito-prone area or have occasion to visit such, then your next line of defense is **to stay indoors, if possible, during peak mosquito activity**, which for many species is near dusk, during the evening or night, and into early morning. However, some particularly troublesome species, such as the common saltmarsh mosquito or the Asian tiger mosquito, are also very active daytime biters. Since many people must be outside and active during the day, it is hard to avoid the peak activity of these species. It is also important to use door and window screens and keep them in good repair. Wherever mosquitoes might still be a problem inside a residence, the old practice of using mosquito bed-netting could be resurrected.

The type of clothing you wear can also help to reduce mosquito bites. If it's not too hot or uncomfortable, consider **wearing long-sleeve shirts and pants** when outside. Wearing **light-colored clothing** also helps (avoid red colors). If the mosquito infestation is truly bad and you must remain outside, you might want to consider using a fine-mesh head net, or a mesh "bug out" jacket that can be treated with a repellent. Using yellow light bulbs for outside lighting might also help.

Avoiding outside activities that require a lot of exertion and generate a lot of carbon dioxide, a powerful natural mosquito attractant, is advisable in mosquito-infested areas. Physical exertion also produces body heat and lactic acid in sweat, which are also attractants for mosquitoes. Do not use strong-smelling perfumes or cologne, nor fragrant soaps, shampoos or hairsprays that can attract mosquitoes.

Probably the most common remedy for having to work, live or recreate outdoors in mosquito-infested areas is the use of **chemical repellent**. Scientific studies have shown that the most effective types of repellents contain the chemical **DEET** (e.g. OFF, Cutter, Muskol, Ben's, Sawyer). Other types of repellents are also available, including certain brands of cosmetic creams that might have some repellent effect (e.g. Avon Skin-So-Soft), or various "natural" oils, spices or other extracts (e.g. eucalyptus oil, lemongrass, pennyroyal, allspice, bay, camphor, cinnamon, citronella, geranium, lavender, nutmeg, peppermint, pine, thyme). Use whatever repellent you think works best for you.

There is a very small percentage of people who might have some adverse health reactions to high concentrations of DEET (e.g. 50-100%), so as a general rule it is recommended to **use repellents containing a DEET concentration of 30% or less. Do not use repellents on infants under 2 months old.** From the standpoint of health precautions, it is better to more frequently apply formulations with lower DEET concentrations, versus infrequently applying formulations with higher DEET concentrations. Be sure to follow all application instructions on a repellent's label. If you want to avoid using DEET-based repellents all together, the EPA has recently determined that two other products also provide some effective relief – **picaridin** and **oil of lemon eucalyptus**. **Do not use oil of lemon eucalyptus products on children under 3 years old.** See the cdc website for more information.

(<http://www.cdc.gov/ncidod/dvbid/westnile/mosquitorepellent.htm>)

Another type of chemical defense is to spray clothing with permethrin, a synthetic pyrethroid (e.g. Permanone), which actually functions as both an insecticide and a repellent, and is also used to help prevent tick problems. If permethrin is used, it should be applied only to clothing and never directly to skin, and all instructions for use must be closely followed.

Finally, there are other measures that you can take around your home or property to reduce mosquito bites that were discussed in FAQ 1 (i.e. **practice good water sanitation**). Some people also find that burning certain materials (e.g. **citronella** candles, sticks or coils) to be of some limited help in keeping mosquitoes away from their personal airspace. It is important to do whatever is practicable to protect yourself from mosquito bites.