

Insect Bite Control

Tests by the military have shown that treatment of clothing with Permethrin 0.5% solution alone is 97.7% effective for mosquitoes and when used in conjunction with an insect repellent such as DEET at 33% concentration the combination is 99.9% effective. Permethrin alone is 100% effective for ticks.

In the USA this approach is effective for preventing Lyme disease, West Nile fever, Rocky Mountain Spotted Fever (also prevalent in eastern sierras of California as in Yosemite area), mosquito borne encephalitis (Florida), flea-borne bubonic plague.

Even overseas the best defense is to avoid getting bitten in the first place. I first used this dual prong approach on a trip to Cambodia where with three weeks of travel in areas of high concentrations of mosquitoes neither of us had a single bite.

Step One

Buy clothing treated with Permethrin or treat your clothing yourself. Pre-treated clothing is expensive as it adds \$10-15 to each item and often it is only provided for shirts and blouses and not provided at all for pants or shorts or socks. Treating yourself enables use of existing clothing and treatment of shorts, swimsuits, socks, bandanas, gloves, and other articles of clothing.

Treat clothing with Permethrin at 0.5% or higher concentration solution. This chemical bonds with fibers of clothing and will last through 6 to 50 washings depending upon the concentration used.

If traveling to an area where bed netting is needed it would be prudent to treat your own net with Permethrin and take it with you. Often the bed nets are sized for a single sleeping bed and couples with a double bed arrangement will not be adequately protected.

Buy concentrated Permethrin and dilute with water - 1 quart of 36.8% Permethrin solution costs \$28.31 on Amazon and will produce 73 quarts of treatment solution at .5% concentration or 26 quarts, more than six gallons, at .13% concentration.

Apply diluted solution using a one quart garden pump sprayers (cost of \$5) to soak the clothes and then allow them to air dry. Shirts, pants, skirts, and socks should be treated.

Permethrin was developed by Coulston working with the US military and they recommend 0.8% for garments to last through 1 year or 50 detergent washings, whichever comes first, or .5% concentration which will last for 6 weeks or 6 launderings. For many people the .5% concentration will suffice for their planned trip though for little additional cost they can provide a treatment that will last for one full year of use.

Step Two

Use a topical insect repellent of either 33% DEET or 20% Picaridin and be sure to smear it over the skin. Spraying alone will not provide a complete uninterrupted layer of repellent. Concentration is

important and many commercial products contain lower concentrations and will not be as effective and this is not reflected in the price.

DEET has been shown to be as effective at 33% as at 100% and separate tests have shown no increase in protection in concentrations greater than 50%. DEET can damage plastics and synthetic clothing fibers.

Picaridin (also known as Icaridin in some countries) should be in a 20% or greater concentration. Commercial products include Natrapel and Sawyer but the concentration of any bottle purchased needs to be verified as low concentration versions are also sold by Sawyer in particular.

For chiggers and similar insects the Skin So Soft product is a very effective repellent. Johnson & Johnson is now selling an insect repellent that includes Skin So Soft as an active ingredient but I prefer to buy the 100% Skin So Soft and mix it with 20% or greater concentration Picaridin repellent.