

Permethrin and DEET – The Miracle Combination

The best way to avoid insect bites-and the diseases insects transmit-is to apply a DEET repellent to your exposed skin and treat your clothing with permethrin. This is especially important for those travelers who will be spending extensive time outdoors, camping, etc. The effectiveness of this combination is confirmed by many studies, such as the one reported by the *Medical Letter* (May 1989) that demonstrates 100% protection against mosquito bites. In a similar study done by the U.S. Army in Alaska, the combination afforded 99.9% protection.

PROTECTIVE CLOTHING

Clothing provides a physical barrier to biting insects, provided it is sufficiently thick or tightly woven. For increased protection, especially when there is more intense mosquito activity (e.g. in the evening), you should wear long-sleeved shirts and trousers. Tucking your pant leg into your socks or boots is a good idea because mosquitos often bite around the lower leg and ankles.

Chemically Treated Clothing

Clothing protection is dramatically increased when the fabric is sprayed or impregnated with a chemical that will either repel or directly kill any insect that alights on the fabric. Both DEET and permethrin are used as clothing treatments, but DEET has largely been replaced for this purpose by the more effective permethrin.

PERMETHRIN

Unlike DEET, which is used primarily on the skin, permethrin is applied to fabric, such as clothing or mosquito nets. Permethrin, however, is not a repellent-it is a powerful, rapidly acting contact insecticide that knocks down, or kills, insects that come in contact with it. Features of permethrin:

- Permethrin kills or stuns insects touching treated fabric
- Permethrin adheres tightly to fabric and will last through multiple washings. It will not harm or stain fabric, even silk.
- Unlike DEET, permethrin will not soften plastic or synthetic materials.
- It is effective against mosquitos, ticks, flies, and chiggers. Permethrin is more effective against ticks than DEET.
- Permethrin is biodegradable and does not accumulate in the environment. However, it should not be discarded in ways that will harm marine life.

Although highly toxic to insects, permethrin is not hazardous to mammals; skin absorption of the chemical is extremely low, and any absorbed permethrin is rapidly metabolized. To date, no cases of human toxicity, carcinogenicity, or mutagenicity have been reported. In fact, products such as 5% ELIMITE antiscabies cream, contain permethrin and are safe enough to be applied directly to scalp and skin for medical purposes.

