Press release

How to handle holiday horrors – Mosquito Bites

Everyone loves a summer holiday, but it can also throw up some challenges for our skin. Mosquito bites can be really frustrating both home and abroad.

Consultant Dermatologist & British Skin Foundation spokesperson, Dr Anjali Mahto explains how to deter the summer pests, what to do when bitten and why they are attracted to us in the first place.

An estimated 10-20% of people are highly attractive to mosquitoes and consistently get bitten more often than their counterparts. Whilst genetics are thought to count for up to 85% of our susceptibility to insect bites, scientists have a number of ideas as to why some of us are more prone to being ravaged by mosquitoes than others.

Blood type

Research suggests that certain blood types are more attractive to mosquitoes than others. A large number of the population secrete saccharides or sugars through the skin dependant on their blood type that mosquitoes are able to sense. Studies as early as 1972, suggest that mosquitoes seem to prefer those with Type O blood. Mosquitoes land on skin with Type O blood nearly twice as often as those with Type A. People with Type B blood fall somewhere in between this range.

Carbon dioxide

Mosquitoes are attracted to exhaled carbon dioxide via receptors in an organ known as the maxillary pulp and can detect their prey from up to 50 metres away. Consequently, those that exhale more gas i.e. often larger people with increased body habitus, are more likely to get bitten.

Metabolism

Aside from carbon dioxide, mosquitoes also rely on other substances, often at close range, to home in on their targets. These include chemical and compounds secreted in skin and sweat, including lactic acid, uric acid, ammonia, steroids, and cholesterol to name a few. Strenuous exercise can result in a build-up of lactic acid which may make individuals more susceptible. Genetic factors are likely be involved in the composition of these substances that are naturally secreted by our bodies.

Bacteria

Large numbers of bacterial species naturally inhabit human skin. Researchers have shown that certain bacterial subtypes present in large numbers e.g. Staphylococcus epidermidis, make individuals more attractive to mosquitoes whilst others e.g. Pseudomonas aeruginosa, appear to have the opposite effect. It also seems that having a wide diversity of bacterial types living on the skin make it less attractive.

Pregnancy

Pregnant women are more susceptible to bites than their non-pregnant counterparts. This is, however, likely to be due to the fact that they exhale relatively more carbon dioxide and have a higher resting body temperature.

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Clothing colour
Mosquitoes are attracted to dark colours such as black and navy blue, as they use vision along with scent to locate their targets. It is best to dress in light colours such as white or pastels to reduce the risk of this.

So what can you do? Insect Repellent!

This is probably the most effective way of reducing the risk of mosquito bites or insect bites in general.

Chemical-based
Diethyltouamide (DEET) is probably the most effective chemical repellent available and has a good safety record. Research has shown that a repellent containing approximately 20% DEET will protect the wearer for about 5 hours. It has a good safety record and weaker formulations of 10% or less are safe to use on infants from the age of 2 months.

Other chemical agents available include icaridin and IR3535. They differ slightly in their effectiveness and characteristics but all work in the same way, producing an odour that is unpleasant to mosquitoes.

Plant-based
There are a number of plant based chemicals that can offer some protection against mosquito bites. They are not as effective as DEET and are not recommended as the only protection in areas that are endemic to malaria. These include citronella, lemon eucalyptus, and neem to name a few.

Minimising discomfort from insect bites

Insect bites can commonly cause lumps (papules), itching (pruritus), and whealing (urticarial) of the skin. Occasionally, small blisters (bullae) may develop. There are a number of things that can be done to minimise discomfort.

- Antihistamines – taking oral antihistamines will relieve the itch and swelling e.g. cetirizine 10mg once or twice a day.
- Mild steroid cream – hydrocortisone 0.5-2.5% applied twice daily for a few days can reduce inflammation and itching
- Calamine lotion to affected areas
- Cooling the skin e.g. with a cold compress

The bites should usually settle within a few hours to a few days. It is important to avoid scratching the skin as this increases vulnerability to developing infection at the site of the bite. One of the many functions of skin is to act as a barrier to the outside world. If the skin becomes broken e.g. as a result of scratching, infection is much more likely to develop.

If you notice pus or discharge in or around the bite, increased pain, redness or swelling, or swollen glands, then suspect infection. This may require treatment with oral antibiotics (usually flucloxacillin unless there is an allergy to penicillin) so attend your local doctor.

Mosquito image credit: Pixabay.com

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