



Insect Bites and Stings

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This is certainly a common medical problem and management in pediatric patients as always has subtle differences generated by the youth of our patients. Insect envenomation has been newsworthy with mosquitoes being recognized as potential vectors of Chikungunya, Dengue fever, West Nile disease, Zika virus and other viral diseases not so recognized by the media. Parental concern about sudden and life threatening allergic responses to bee stings, wasp stings and fire ant envenomation are important issues, but the pediatric care of these problems will not be discussed here.

Rather, I will discuss the dermatologic care of insect envenomation with local consequences only. Though potential vectors of the illnesses noted above, daily consequences of contact with mosquitoes, fire ants, bees, wasps, hornets, and scorpions not fraught with allergic crises is really about prevention and care of the skin after envenomation occurs. So let us start at a logical beginning with prevention. Except for mosquitoes, avoidance strategies are a good bit about luck and in the case of fire ants, discovery and elimination of fire ant mounds. The varied techniques of fire ant elimination exceed the scope of this conversation, but it would be wise to remember the various pesticides used can pose toxic potential to a young and curious child. At the very least, read and understand their safe use before proceeding. Mosquito avoidance starts with habitat elimination. These insects require still water for reproduction and can be successful in a very small quantity of water. They also travel a very small distance in a lifetime. As a consequence, around home, careful removal of standing water can produce measurable benefits. Mosquitoes are fragile insects and avoid significant winds. This knowledge can give you another tool for avoidance. Nature's wind is often least at dawn and dusk and on an average day, contact will often be most at the beginning and end of the day. When you have the option to artificially create wind (fans or ceiling fans) do so and you will lessen your burden of contact. In international travel where mosquito contact raises the option of malaria, mosquito netting to surround sleep settings is well regarded as a useful tool we Americans need to respect.



The next level of avoidance would be putting a chemical barrier between us and the mosquito. Varied products for this purpose exist and though DEET is the best known with the widest number of products, other options exist. The other chemicals for application to the skin or clothing covering the skin include picaridin, IR3535, oil of lemon eucalyptus, and para-methane-diol. [See CDC website for more information](#). Though different, these products share some general caveats. They are meant for application to intact skin only. Avoid use if the skin has lacerations or abrasions. These products are not meant to be applied under clothing. Generally wearing enough lightweight clothing to cover the torso, arms and legs is recommended and the repellent chemicals can be applied directly to the clothing. If sunscreen and repellent chemicals are to both be used, using separate products will allow you to follow the manufacturer's recommendations about application and reapplication. Generally, sunscreen should be applied first and repellent chemicals after that. It is likely that sunscreen will need to be reapplied more often than repellent chemicals. Perhaps the most ideal pattern of use would be to cover exposed skin with sunscreen, then clothe with sun protecting clothing that has insect repellent capabilities as well. This latter component (permethrin) can be included in the clothing at the time of purchase or permethrin laundering products can be used as an aftermarket item. Both options remain active in the clothing after a few washes with specifics provided by the manufacturer. Permethrin containing laundry products are generally not recommended for use directly on the skin. Repellent chemicals (DEET and the rest) can be applied to clothing that has been treated with permethrin (before or after purchase) to give you an extra margin of protection. If you have young children, the spraying of repellent chemicals onto clothes can be done before putting clothes on squirming and uncooperative children. This would avoid the potential consequences of getting spray into the eyes and mouth. Generally, facial application is best done by spraying the chemicals onto your hands and then applying the chemicals to the child's skin with your hands.

Regrettably, despite all efforts to avoid contact with insects, contact will occur and management after the fact will become an eventual necessity. Pain may be the immediate consequence with bees, wasps, fire ants and scorpions, but the lingering consequence will be itchiness and scratching. It will be helpful to manage this well enough to keep the skin intact and thereby limit skin consequences



(itchiness) to just the few days that follow envenomation. Once the skin has been scratched to the extent that an open wound has been created, the recovery time is much longer and carries with it the problems of potential wound infection and occasional scarring.

So let's talk about the "tool chest" of after bite options. In stage one (bitten/stung, but no open wound), start with clothing. Cover the bite with light weight clothing (most contact will be in warmer months) and you can help to diminish the amount of skin trauma and wound formation your child will create. Young children are often visually "attracted" to the bumps and inflammation and scratching will start. Even when visual stimuli are less important than the itchiness caused by venom inflammation, scratching through clothing is less precise and will create less of a wound than attacking bare skin. Hot skin itches more than cool skin, so again, choose lightweight clothing for those warm months. Be smart and use tepid rather than hot water for cleansing wounds and taking showers. You can help to limit skin trauma from scratching if you "take their claws away". Keep those fingernails clean, very short and buffed so the edges are blunt and so short you can't feel them beyond the tips of the finger pads. You can apply topical steroids a couple of times per day and help to resolve inflammation and itchiness. One percent creams are sold over the counter without prescription. Eczematous (dry) skin inherently itches more in response to virtually any stimulus and insect venom is no different. So high quality emollients like Ceravae, Cetaphil, Eucerin, Vaseline, Aquaphor and Vanicream will give you tools to apply fragrance-free emollients and help to limit itching. This should be done many times per day. For once, more is better! Oral antihistamines can help systemically to limit itchiness. Medications like Claritin, Zyrtec and Allegra are non-sedating so they can be used with school and other activities where drowsiness would be a detriment. If your child scratches in his sleep, Benadryl can be useful at bedtime to limit involuntary scratching. Follow dosage recommendations from the manufacturer whenever possible.

So if all these efforts fail, you will enter stage two, where an open wound has been created and a longer period of skin care and wound management will be needed. This phase of care can be important in limiting the potential for wound infection and scarring. Especially in more heavily pigmented skin, the potential for scarring or hyper pigmentation is problematic and can be a



permanent consequence. Still use all of the tools you used in stage one; they will still be helpful. After several days, the continuing use of topical steroids could perhaps be curtailed or stopped. There is a time honored tendency to use topical antibacterial ointments containing neomycin and bacitracin. Both products are potent sensitizers and their use threatens to create inflammation and worsen itching. Anytime you are tempted by tradition to use one of these products, a better choice would be Vaseline or Aquaphor. Wounds heal more quickly when gently and consistently moisturized with a good quality emollient as listed above. As long as we are talking about traditional care techniques, let us discuss adhesive bandages. A generous number of people are or will become sensitized to adhesive compounds in bandages and would be better off without that exposure. If there is a need for an occlusive bandage, Aquaphor or Vaseline, a gauze pad (perhaps non-sticking) and a wrap that "self-adheres" like Coban would be a good choice. If an open wound is becoming increasingly inflamed and a properly distracted and comfortable child has a pain response to your touch of the wound area, medical evaluation would be warranted.

If you are curious about allergic (anaphylaxis) response to insect envenomation, refer to the article entitled "[Anaphylaxis](#)". Similarly, content about Zika and other vector borne viral diseases is included in the article entitled "[Zika and Beyond](#)".