

What's biting me?

Every person will undoubtedly suffer the bite of an arthropod (insect, spider, tick, or similar creature) at some point. Some people are bitten far more often because of where they live, the season of the year, or as a function of the activities in which they engage. Just because one feels an itch or sees a small injury on the skin, however, does not necessarily mean that these sensations or marks resulted from the bite of an insect or other pest. How can you tell what is a bite and what is not? And if it is a bite, how can you stop it from happening again? The discussion that follows offers some insight on the myriad of possible causes, along with some guidance on how to solve the mystery of "*the bite*".

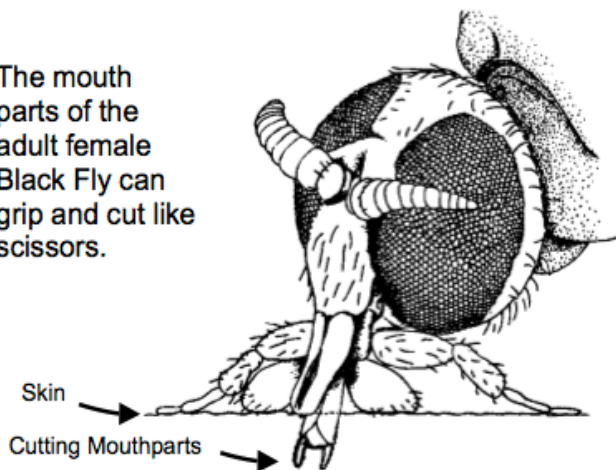
What is a *bite*, and how does a bite differ from a *sting* or other insult to your body?

Bites: A creature uses its *mouthparts* to bite. Many kinds of arthropods (insects, ticks, mites, centipedes, and similar creatures) will bite to obtain nourishment or as a means of self-defense. The mouthparts of these creatures can vary significantly in form. Mosquitoes, lice, bed bugs, and fleas have delicate, thin stylets that they use to deftly probe for a skin capillary in search of blood. The wound quickly self-seals when the insect withdraws its proboscis. In contrast, black flies and deer flies have blade-like mouthparts that slice and dice the skin to cause blood and tissue fluid to pool at the wound. The physical damage that results is in stark contrast to that of the mosquito.



Mosquito probing skin

The mouth parts of the adult female Black Fly can grip and cut like scissors.



Other 'biting' pests, such as ticks, have harpoon-like mouthparts that serve to penetrate and anchor them in place for the minutes or days required for them to obtain a blood meal. These, and other kinds of creatures, feed upon animals to obtain nutriment to survive and/or to nourish their eggs.

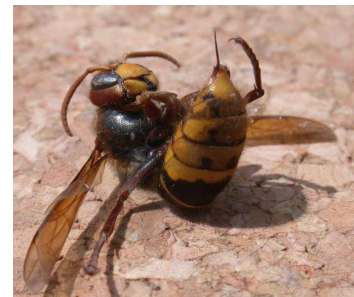
Each of these blood-feeding creatures contaminates the wound with its *saliva* while it probes for its meal. The saliva lubricates the mouthparts, diminishes clotting of the blood at the wound in the mouthparts, and often deadens the sensation so you won't feel the creature while it bites. That same saliva can also slow the healing of the wound and cause a person to develop an allergic sensitivity that may result in swelling or itchiness. It can also introduce microbes that may cause disease.



Other creatures bite to capture their prey, in self-defense, or simply out of confusion. Spiders, centipedes, and several kinds of insects are predators and bite other animals so they may capture, disable, and feed upon them. The bite may be accompanied by a tiny but potent volume of venom injected into the wound. No spider or centipede would prey upon a person, but they might bite in self-defense if they're intentionally or accidentally bothered. With few exceptions, the bite of a spider or centipede would be immediately apparent as a localized sharp and painful prick. Yet other creatures that normally feed upon plants might bite in defense, or they may bite merely because they're confused.

Should you observe a creature in the act of biting or fleeing from what felt like a bite, we encourage you to capture and [submit the specimen for evaluation](#) and identification via the **IdentifyUS** website. All you need to do is capture the potential villain with your fingers, a piece of tape, or sweep it into a plastic bag, or unbreakable jar, or a container and send it to us. If you can take pictures of it, you can upload those digital images right away via our Specimen Evaluation Form to receive a fast and confidential reply regarding the identity of your specimen. Even if you swat it and cause significant damage, we will still most likely be able to offer insight as to the creature's identity based on recognizable features if you [send the physical sample to us](#) or can offer up high-resolution, close-up pictures in digital format. The information gained via a positive identification can be very useful to you and can be used to better inform your health care professional and/or pest control personnel.

Stings: Whereas *bites* result from the mouthparts of insects and other creatures, *stings* are delivered via a specialized structure at the hind end of the creature's body. Creatures may sting to capture and disable their prey or as a means of self-defense. Often, a small volume of venom is injected into the wound, and this may add much insult to injury. A person may develop an allergic sensitivity to the venoms of honeybees or certain kinds of wasps, and this allergy can, at times, be life-threatening.



by Dr. Strangelove at de.wikipedia

Irritating parts of arthropods: A person may experience irritation from direct contact with certain kinds of creatures or with parts they may shed. Some creatures are endowed with specialized setae or hairs that can be irritating upon contact. Some of these may cause discomfort because of mechanical insults (much like a tiny pin), particularly if they stick in the skin or worse, on the surface of the eye. Other kinds of specialized hairs are hollow and contain chemical agents that act much like a kind of venom. Often, these hairs have broken off the creature and are free in the environment. They may adhere to bedding or clothing and irritate whenever they contact the skin. Similarly, air currents may carry such hairs and deposit them on surfaces where they may be felt, but not easily seen. A few kinds of creatures exude a caustic substance from their body when they are crushed on the skin. Such contact can result in chemical burns. Any of these irritations may be mistaken for *bites*.

Lesions resulting from bites: An arthropod in the act of biting may be detected and observed immediately if the bite is painful. Other bites might not be noticed at all, or the effects may not be evident until some minutes, hours, or days later. The resulting lesion may be so tiny and insignificant as to escape notice, or it may develop into something far more obvious. The incident may result in direct physical damage to the skin and/or cause a reaction from the saliva introduced to the wound. In some cases, the bite site may become itchy, swollen, reddened, and otherwise quite noticeable and irritated. The site may also become infected if scratched with dirty fingernails or if the insect or tick transmits a microbe that could cause disease.



But what caused the bite? That question is usually easy to answer if you've captured the creature or good digital images of the villain. In that case, we can offer you a rapid, independent, confidential, and expert answer. In the absence of the creature, it becomes far more difficult to incriminate the right culprit. You – or your physician – might be tempted to assume that the lesion resulted from the bite of a spider, mosquito, bed bug, or other creature, but you'd most likely be wrong.

Lesions that result from bites are incredibly varied in their appearance and differ dramatically from person to person. Hence, you may notice the bite on yourself, but a bite from the same creature might cause a more (or less) profound reaction on another person. To add to the complexity, a person's reaction to the bite of an insect or tick depends upon his or her prior encounters with the same (or similar) kinds of creatures. This is most evident as a person ages. For instance, a child in the first year or so of life generally doesn't react much to the bites of most mosquitoes. But, with repeated exposures during the next few seasons, the child may manifest with a vigorous allergic response. The bite lesions may become markedly inflamed, hard, red, painful, and profoundly itchy. As one further ages and suffers additional bites, the reaction generally becomes far less intense and may even become nearly unnoticeable.

The take-home message here is that it is rarely possible to identify the cause of an insect or tick bite merely by examining the appearance of the lesion.

For any location around the globe, many possible arthropod villains may bite. The activities of many such pests are restricted to certain seasons. For others, however, the tempered environment within our homes and workplaces creates a suitable habitat for several kinds of pests throughout the year.

Even if the creature is not directly observed, there are ways to narrow the field of likely candidates. For instance, it can be helpful to consider whether the presumed bites are *restricted to specific areas* or are *more widespread* on a person's body. Some creatures, such as fleas and certain kinds of mosquitoes, tend to bite most often on *exposed areas* of the lower legs. Yet others, such as lice, are fairly restricted to the sites they bite. It is also *useful to know the geography* (where a person lives or has recently traveled), and the *season* of contact, as well as whether that contact occurred during the day or night. Because many biting pests are

associated with non-human animals, it is of value to know what *kinds of animals or pets* the bitten person owns or has encountered. As contact with biting pests and irritating insect parts may occur in the course of a person's activities at home and away, it is useful to know the person's *occupation and hobbies*, and the characteristics of the home environment.

Because there are many possible causes for bite-like sensations and skin lesions, it is always best to objectively confirm the identity of a genuine pest or parasite **before** treating oneself or the home. **IdentifyUS** is able to help by evaluating the creatures (and digital images) you capture. ***As with any medical concern, always consult with your health care professional. A dermatologist is the most appropriate expert to evaluate conditions that affect the skin.***

How to find a villain if it is not immediately obvious: Often, one may be bitten or otherwise contact an irritant but not experience a reaction until sometime thereafter, long after the villain has left or gone into hiding. Sometimes, the attackers are just too small for most folks to notice. If bites or bite-like encounters continue, we suggest obtaining and deploying an array of non-baited insect glue traps. These can be placed under beds and sofas, behind furniture, and in other rooms where the problem seems to occur. Allow these traps to sample passively for one week or more, and then [prepare them to be shipped to IdentifyUS](#) in order for us to evaluate anything captured in them. To protect any captured creature and prevent the glue from contacting other items, cover each glue surface with a *single sheet* of clear plastic food wrap, and fold the excess around the back. Then, stack up the traps, insert them into a padded envelope or box, and send them to **IdentifyUS**. We'll examine these and – with few exceptions – report our findings back to you the same day the samples arrive at our lab. We encourage you to share our findings with your health care professional and to have them contact us if they have further questions.

What if it is not a bite? Some people earnestly believe that they are actively infested, even though no louse, bed bug, mite, or other parasite can be detected or captured. These cases can be particularly difficult to investigate and to manage. The affected individual should not be dismissed as being mentally unstable. Every reasonable effort should be made to identify the true cause of the sensations/irritation, bite-like reactions/lesions, and to capture and identify any offending creature on the scalp or body. The irritant may, indeed, be some type of biting insect or mite, but it may not necessarily be infesting the person at the time of examination. Diverse insects (e.g. mosquitoes, fleas, bed bugs) may visit a person transiently, and may not be noticed in the act of biting. Certain blood-feeding mites associated with birds and rodents may be present in a home and can be annoying when they feed upon a person. Itching and irritation in some cases may also be ascribed to hair care and laundry products, industrial fibers, underlying disease, or even to pesticide treatments, and yet other kinds of products and drugs. The clinician will often find it valuable to consult with an entomologist on these matters. To engage our identification services, visit the form on our website for [Specimen Evaluation](#).



A few people remain convinced that their infestation is real, even though they have been examined by one or more competent specialists

who can find *no physical cause* for their discomfort. The condition is variously [referred to as delusional-, delusory-, or illusory-parasitosis, 'Morgellons syndrome', and Ekbom Syndrome](#). Based upon a recent thorough clinical review of 115 sufferers of “Morgellons syndrome”, none of these patients had a demonstrable parasite. Instead, offending materials collected from the skin were composed mainly of cotton fibers, most likely from clothing or linens that had become adherent to existing lesions. Interestingly, more than half of the patients manifested with a cognitive impairment, and a psychoactive drug was detected in hair samples of half of the patients.

A few patients may pose a danger to themselves and others by resorting to the misuse of toxic or flammable substances in attempts to rid themselves or their homes of their real or perceived infestation. Such a person may, indeed, be delusional, but should be treated with care and respect when referred for counseling. Certain people develop an extreme phobia or irrational fear that they will acquire lice or other parasites from virtually any animate or inanimate object. Patients who are unduly burdened by this condition are likely to benefit from counseling with a clinician specializing in phobias and obsessive-compulsive disorders. Readers are advised to exercise great care and healthy skepticism when reading blogs and other Internet resources about such matters.

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