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Is Something Biting Me?



Many people suffer from the feeling that insects, mites, or other tiny creatures known as arthropods are biting them, crawling on them, or burrowing in their skin.

Frequently, the causes of these feelings are unknown and no tiny creature can be captured for analysis. This pamphlet will aid sufferers in receiving relief from what, for many, has become an unbearable condition.

What Types of Tiny Arthropods Could Be Affecting Me?

Very few creatures are parasites in the skin of humans. In northern areas such as Pennsylvania, most of these are mites such as scabies (human itch) mites, chigger mites, or follicle mites.¹

Scabies mites are very tiny and can only be diagnosed by a physician taking skin scrapings and viewing them under high magnification. Most scabies infestations are located in the skin folds of the hands, wrists, and elbows. Scabies mites usually begin to itch several weeks to a month after infestation. They do not produce a biting or crawling sensation.

Chigger mites are more common in the southern states, especially during the warmer months of the year. They are acquired when people walk through high grass and weeds. "Chiggers" do not live in structures or buildings. They produce an intense itching, usually where clothing fits tight against the skin such as the waist, wrists, and lower leg. Technically, chiggers do not burrow in the skin. Instead they attach themselves to the base of a hair and excrete a chemical that causes the skin to swell, thus enclosing the mite in the expanded flesh. They feed on fluids generated at the site. Chigger mites do not produce a biting sensation.

Follicle mites are found on approximately 75 percent of the human population. The vast majority of people don't know they exist even though there may be hundreds or thousands of them in the oil glands of the face. Occasionally, some individuals (mostly teenagers) will have an acne-like condition because of a reaction to the mites. Most adults have no reaction to the mites.

1. In tropical locations, certain fly larvae (maggots) can infest the skin, and patients that have visited these locations should advise their physicians of their travels. Occasionally, immobile and obese patients in Pennsylvania have exhibited myiasis from bot fly larvae, which normally attack rabbits, mice, and other small mammals. The infestations are characterized by a hole in the skin, surrounded by swelling and redness, and the white larvae can be seen moving within the opening. Note that this is an extremely painful, localized, and rare condition.

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Tiny Arthropods That Live on the Skin

The two types of human lice commonly encountered are head lice and pubic lice. Both species are white, small (but can be seen without magnification), and are usually found in the area of the

body described by their names. Their biting causes an intense itching in those regions. The eggs of both the head and pubic louse are found on hair shafts at the skin level and are called nits. Nits are whitish, somewhat translucent eggs that are glued on the base of the hair. Over time, as the hair grows, the nits will be found farther from the skin surface.



Tiny Arthropods That Bite the Skin

Some of the very small arthropods that do bite but do not burrow or live within the skin include fleas, bed bugs, mosquitoes, black flies, punkies (a small biting fly), bird or rodent mites, and straw itch mites. Although these arthropods are small, they can be seen without the aid of magnification.

Fleas usually bite the lower legs and are brown in color and flattened from side to side. The bites of fleas can be felt immediately. Fleas can be difficult to catch because of their ability to jump, but they are easy to see without magnification. Most fleas that homeowners might find

are approximately 1/8 inch in length. Fleas can be found in homes where pets are (or were) infested or from wild animals that get into attics and chimneys.



Bed bugs are oval, chestnut brown insects that are flattened from top to bottom. The adults are approximately 1/4 inch in length. Bed bugs feed during the night or early morning hours. They frequently go unnoticed because many people have no reaction to the bites and there is no sensation when a bite occurs. Some people, however, do have a reaction to the bites. The site of the bite becomes reddened, raised, and begins to itch—sometimes intensely.

Flies such as mosquitoes, black flies, and punkies occasionally will enter homes (during the summer) but will not reproduce in the structure. They can be seen without the aid of magnification and the sensation of biting is immediate. Although punkies (also known as no-see-ums) are very small (1.6 millimeter or about the width of an “a” on this page), they have a very noticeable, stinging bite.

Bird and rodent mites can become problems in buildings for short periods of time, particularly in the early summer when birds nest in holes of buildings or if infested rats have been removed from a building. Although these mites are small, they can be seen without magnification, especially when they walk across a light-colored surface. These mites are typically brown in color. The bites of these mites feel like a slight sting—noticeable but not very painful.

Straw itch mites are predators on other small creatures that infest grains and stored products. They feed on the eggs and larvae of moths and beetles that are pests of stored products. On rare occasions, people who work in feed stores, seed package companies, and similar places will be bitten by these mites (the mites are only tasting the skin). Their bites result in pain and an eventual reddened, small, raised bump. The mites rarely infest homes unless there are vast numbers of stored products pests present. The adult mites can be seen without aid of magnification, but the immature mites cannot. It is highly unlikely that a residence would be infested with straw itch mites.

Top: Pubic Louse
Middle: Head Louse
Bottom: Cat Flea
Right: Bed Bug

If It Is Not an Arthropod, What Else Could It Be?

Disease or Other Medical Conditions

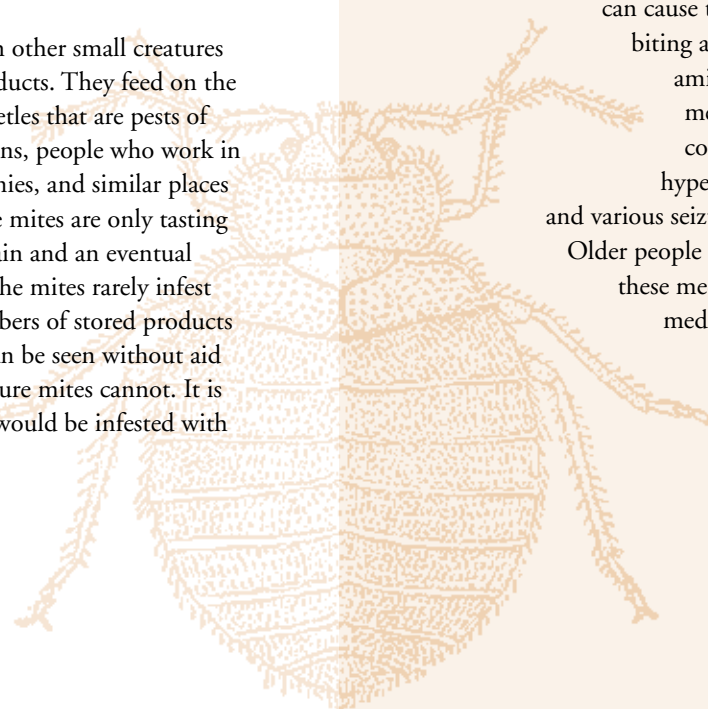
Several medical conditions may cause a sensation that feels like insects biting or crawling on the skin. Some of these medical conditions are cerebrovascular disease, diabetes mellitus, eczema, fungal infections, hepatitis, hypothyroidism, liver disease, nutritional deficiencies (and excesses), sensitivity to light, kidney disease, shingles, and other neurological disorders.

Materials in the Environment

Many items in the physical environment can also cause the same sensations. Some of these items are chemicals, cosmetics, detergents, disinfectants, dyes, fiberglass, carpet and clothing fibers, paper shards, perfumes, resins, static electricity, and many items too numerous to list. Frequently, these sensations occur in the winter months and are intensified by low humidity and heavy clothing.

Medications

Drugs (prescription, over-the-counter, or illegal) that can cause the sensation of crawling or biting arthropods include amphetamines, antibiotics, arthritis medications, aspirin, cocaine, cold remedies, estrogen, heroin, hypertension medications, PCP, and various seizure-control medications. Older people may be more sensitive to these medications or combinations of medications.



What Should I Do?

Contact your family physician or dermatologist and describe the sensations you are experiencing. If possible, take a sample of what you think is biting you. Remember, most biting pests can be seen without the aid of magnification. If your physician is unsure of the identification of the sample, he/she should submit it to your local hospital or pathology lab for analysis. If need be, the sample can be forwarded to Penn State's Department of Entomology² for species identification. A written report will be returned to the lab or physician in charge. Contact the Department of Entomology to determine possible costs for these reports.

What Not to Do!

This is very important! Until you have determined what is causing the condition, do not apply insecticides or repellents to household items, pets, or yourself. Doing so when there is no physical evidence of a specific arthropod could worsen rather than improve your condition.

Do not apply excessive amounts of lotions, conditioners, salves, or unconventional home remedies such as mayonnaise, petroleum jelly, gasoline, or other materials in the hope that they may provide relief.

Do not contract to have a professional pest control company apply pesticides to your home unless (1) you have a sample of the pest to show to the technician and (2) it is a pest that can be treated effectively with insecticides.

2. Special Insect ID, Penn State Department of Entomology, 501 Agricultural Sciences and Industries Building, University Park, PA 16802; phone: 814-865-1895.