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Common Insect and Mite Pests of Humans

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Bites from arthropods can cause problems for people in and around their homes, and many times the culprit goes unseen. Because many bite marks look very similar, it can be difficult to know what has bitten a person without actually seeing the arthropod. However, knowing some information can help narrow down the choices.

For treatments of bites, consult a physician, who can prescribe medications. Several over-the-counter medications and ointments are available to help reduce itching and swelling. When buying these products, ask a physician or pharmacist for advice on which to choose.

Lice

The lice that are associated with humans are small, wingless insects that bite the skin to obtain a blood meal. Three types of lice can be found on humans: head, body, and pubic.

Head lice (Fig. 1) are found on the head, grasping a person's hair with their claws. If they drop off, they can survive only 1 or 2 days. Louse eggs, called nits, are laid on the head hairs at the juncture of the hair shaft and scalp. The eggs are coated with a cementlike substance that glues them to the hair.

Head lice are not known to transmit any infectious diseases and must be transferred through direct contact.

To manage head lice, use an effective head lice treatment and a specially designed nit comb to remove the nits from the hair shafts. Nit combs are usually included with over-the-counter head lice treatments or can be purchased at drugstores. Insecticidal shampoos treat head lice and can be either prescribed by a doctor or purchased over the counter.

Use the insecticidal shampoo to wash the infested hair over a sink or basin instead of in the shower or bath to target the head area and reduce pesticide exposure to the body.

Inspect the infested head daily until lice are no longer found; then inspect it weekly to ensure that it is not reinfested. All household items or areas suspected of being infested should be laundered, vacuumed, or, if possible, placed in a sealed plastic bag in the freezer to kill any lice or nits.

Figure 1. Head louse. Photo by Michael Merchant.

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Body lice look very similar to head lice but are typically found in the clothing of their hosts. From there they move into contact with the skin to feed. The eggs, or nits, are laid in the seams of the clothing.

Body lice can transmit several diseases, including trench fever, relapsing fever, and typhus, which are not commonly found in the United States. Usually these lice are associated with people who seldom change their clothing.

To manage body lice, wash the infested clothing in hot, soapy water. Then dry it in a dryer set on high heat. The infested person should also bathe in hot, soapy water and thoroughly wash all areas of the body. If lice are found in or are suspected of infesting the area, inspect and wash the bedding.

Pubic lice (Fig. 2) are associated with the pubic region, where they cling to pubic hair with their claws. Like those of the head louse, the eggs are laid on the hair shaft near the skin surface. Pubic lice are transferred through close sexual contact and, on rare occasions, via undergarments or bedding.

Treat pubic lice with specially formulated creams or shampoos. Some of these items are available over the counter; others must be prescribed by a physician. Wash the bedding and clothing in hot, soapy water and dry them using the high heat cycle.

Figure. 2. Pubic louse. Photo by Michael Merchant.

Bedbugs

Bedbugs are small, dark brown to reddish, flattened insects with oval bodies and no wings (Fig. 3). The color and size can depend on whether or not the insect is engorged with blood. Bedbugs feed on blood of warm-blooded mammals.

Bedbugs are not known to spread disease, but they can cause much discomfort. They are spread mainly through the clothing and luggage of travelers or by secondhand bedroom furniture.

Figure 3. Bedbug. Photo by Michael Merchant.

Bedbugs usually feed at night while people are sleeping; the bites appear on exposed skin. Reactions to bedbug bites can range from little or no reaction to red spots that itch.

Confirmation that bedbugs are the cause should be based on finding the insects. Because bedbugs are excellent hiders, it may be difficult to detect them. Carefully check cracks and crevices in mattresses, bed frames, walls, and behind baseboards.

Although a pest management professional is needed manage bedbugs, some actions can help reduce their populations:

- Thoroughly clean the infested area, paying close attention to cracks and crevices where the bugs may be hiding.
- Vacuum along the seams and edges of the beds and furniture, and throw away the vacuum bag in an outside garbage can.
- Pull the bed away from the wall and launder all bedding in hot, soapy water.
- Prevent the sheets and dust ruffles from touching the floor.
- Caulk or use expanding foam to seal cracks and crevices in the infested area.

Fleas

Most flea problems—whether they are on a cat, dog, or wildlife—are caused by the cat flea. Adult fleas are about ⅛ inch long, wingless and dark in color (Fig. 4). They are flattened laterally and have hind legs modified for jumping. Adult fleas are usually found on a host animal; the eggs, larvae, and pupae are found off the animal host.

Flea bites are usually found around the ankles and lower leg area. Bites cause small, itchy, red bumps and may look like many other types of bites. People who have allergic reactions to flea bites may have symptoms such as rashes or hives.

To manage fleas, implement an integrated program using a variety of techniques. Sanitation is vital, so vacuum the floors and furniture thoroughly and throw away the vacuum bag in an outside garbage can. Wash the bedding in hot, soapy water.

If pets are carriers, groom and treat them with an appropriate product.

Areas in and around the home will also need to be treated. Target areas where your pet lingers, such as on bedding, rugs, and furniture.

If the problem is caused by wildlife in the area, trap and/or exclude the wild animals to prevent their access to the structure before beginning your flea treatment program.

Treat indoor and outdoor areas with products labeled for fleas, or contact a pest management professional. You may need to make several treatments spaced about 10 to 14 days apart.

Figure 4. Adult flea. Photo by Pat Porter.

Scabies mites

Scabies mites are very small, whitish, round mites with very short legs. These mites can infest humans and animals (in animals, other scabies subspecies cause sarcoptic mange).

Scabies mites burrow into the skin within 5 minutes of contact and then lay their eggs in the burrows within the skin. Immature mites often move over the skin's surface or live in hair follicles.

Scabies mites cause a rash and intense itching where the mites are burrowing in the skin. The itching is usually more intense at night, and tiny blisters often form on the skin surface above the burrows. The mites often infest areas where the skin touches, such as between the fingers, the bend of the knee and elbow, armpits, genital areas, breasts, and shoulder blades.

These mites can be transmitted through close contact with people or pets infested with scabies mites.

Scabies should be diagnosed and treated by a physician. A skin scraping must be conducted to confirm the presence of scabies mites. Treatment usually involves a prescription acaricide that is applied to the infested area, as well as laundering clothing and bedding. All members of a family should be treated simultaneously.

Chiggers

Chiggers are small, red, six-legged mites (this stage has six legs compared to eight legs found in later developmental stages) that can cause intense itching and reddish welts (Fig. 5). Chiggers tend to be more common in damp areas with tall grass, weeds, or shrubs.

After crawling onto a human, chiggers move upward searching for a location to settle down and feed. Because the mites typically choose areas where the clothing fits snugly—such as around socks and waistbands—the areas attacked are usually ankles, back of the knees, groin, waist, or armpits.

Chiggers do not burrow into the skin or suck blood. They inject a digestive enzyme that dissolves the tissue of the host and eventually forms a hardened feeding tube at the site. These enzymes also lead to itching within a few hours. The mites are often washed or brushed away before they complete feeding.

Figure 5. Reddish welts caused by chiggers. Photo by Michael Merchant.

Even after the chiggers are removed from the body, the irritation continues until their digestive enzymes are broken down by the body. Small red welts develop, causing severe itching that may last several days.

To prevent bites, avoid chigger-infested areas or use repellents containing active ingredients such as DEET, permethrin, picaridin, or sulfur dust when entering suspected chigger areas. Wear long sleeves and long pants, and tuck your pants into your socks.

Bathe as soon as possible after returning from a suspected chigger area. Antihistamines or topical creams can be used to reduce the itching caused by chiggers.

Bird and rodent mites

Mites occasionally infest buildings that are associated with birds and rodents. Usually these mites live on their particular host or in the nest, but they can invade other areas if the host dies or moves to a new location. Bites from these mites can cause itching and irritation.

Although rodent and bird mites are very tiny, they can often be seen by the naked eye. They are usually light in color and have eight legs.

To manage bird and rodent mites, first eliminate the host and its nest from the structure. Look in crawl spaces, attics, eaves, gutters, and chimneys. Once the host is removed, seal the area to prevent new animals from moving in.

A home can be treated for mites with liquids or aerosols targeted at attics, baseboards, cracks, crevices, and crawl spaces. Follow all the instructions on the product label.

Other sources of irritation

Arthropods are often blamed for itching or redness caused by different sources, such as detergents, cosmetics, soaps, medications, or cleaning agents. Environmental factors may also cause itching. This may be from irritants such as small fibers of paper, fabric, or insulation. Fibers can cause a crawling sensation when they come into contact with the skin and sometimes lead to a rash.

Airborne chemicals can also cause problems such as headaches, dizziness, or skin rashes. Such contaminants include cleaning agents, tobacco smoke, or solvents from paint or adhesives. Airborne contaminants usually occur in buildings without adequate ventilation.

Health-related conditions are another cause for irritation that may be blamed on arthropods. Medical conditions that can cause these sensations include stress, diabetes, pregnancy, or thyroid disease.

Delusory parasitosis is an emotional disorder that is characterized by the irrational fear that organisms are infesting a person's body. Patients often report "bugs" that are invisible or change color infesting their body. However, the specimens they provide for identification often are skin, lint, dried blood, or other debris. The skin of these patients can be irritated from excessive scratching or application of various home remedies. Suspected cases of delusory parasitosis should be referred to a physician.

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Revision