

HUMAN LICE

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Historically, human lice have been associated with wars, crowded living conditions, and poverty. However, even in a peaceful, affluent society people can have louse infestations. This is particularly true of head lice, which are most common in preschool, kindergarten and elementary school children. According to the National Association of School Nurses, more than 6 million Americans are infested with head lice annually. Head lice are easily transferred between persons during close contact or when people share items such as hair brushes, combs, towels or hats. A person also can become infested by storing personal items in shared lockers or by using a head rest or high-back seat previously used by an infested person.

Lice must have temperatures of 82 to 86 degrees F, favorable humidity, and a ready food source. So, they do not leave the host unless they are dislodged or the host's body temperature drastically changes. Lice die if separated from the host for more than 2 to 4 days.

The types of lice discussed here pierce the skin and feed on blood. An infestation can cause persistent skin irritation and itching, which results in restlessness and loss of sleep. The skin may become sensitized to the saliva and feces produced by lice. Scratching may open the skin and lead to secondary infection.

There are three kinds of human lice. Their common names describe their preferred feeding sites: head lice (*Pediculus humanus capitis*); body lice (*Pediculus humanus humanus*); and pubic or crab lice (*Phthirus pubis*). Human lice do not survive on pets or domestic animals.

Adult lice are small (1.5 to 3 mm. in length), flat, wingless, greyish to brown insects. Their legs have claws for clinging to hair shafts.

Head Lice

The head louse adult is 2 to 3 mm long. The abdomen is distinctly longer than it is wide. Color varies from dirty-white to greyish-black, but head lice usually blend in with the hair color of the host. Lice infesting blond people tend to be paler than those on people with black or brown hair.

Head lice prefer to live on the hair of the head, and are rarely found on other parts of the body. In a severe infestation, secretions produced by lice may cause the hair to become matted. The life cycle has three stages: egg (nit); nymph; and adult. The female lays four to six nits per day or 50 to 150 eggs during her lifetime. Eggs are oval, light tan in color, and about the size of a fine particle of sand. Nits are glued to the base of hair shafts near the scalp,



Figure 1. Head louse (body louse looks the same).

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usually near the ears and on the back of the head. Eggs hatch in about 5 to 7 days under normal conditions.

Newly hatched nymphs are transparent. They must take a blood meal within 24 hours to survive, and may take two to three blood meals per day. Over the course of about 9 days, immature lice pass through three nymphal stages and become straw colored as they mature. They look much like the adults. The life cycle is completed in 15 to 21 days and adults may live up to 30 days.

The presence of nits does not always mean that a person has a current infestation. Nits may be left from a previous infestation. Because eggs are attached to the hair shaft at the scalp, the position of nits on the hair shaft can distinguish between past and current infestations. In 1 week, the time it takes for a louse egg to hatch, human hair grows about 1/4 inch, carrying the egg with it. Therefore, eggs more than 1/4 inch from the scalp either have already hatched or will never hatch. Empty or hatched nits may remain attached to the hair shaft for months, but play no role in the transmission of head lice. They should be removed, however.



Figure 2. Eggs (nits) attached to hair.

Head lice are not known to cause any serious medical condition. Itching is the most common symptom. The greatest concern is the social stigma of having a louse infestation.

Body Lice

The body louse looks much like the head louse, but is slightly smaller. It is often referred to as the common clothing louse or "cootie." Infestations of body lice are more prevalent when a person's hygiene is poor and when clothes are worn continuously for up

to several weeks or shared with others. Body lice are found on clothing, particularly where garments come in close contact with the body, such as the crotch of trousers, the waistline, and the armpits.

The body louse's life cycle is somewhat similar to the head louse, except that a female may lay 270 to 300 eggs during her lifetime or up to 10 eggs per day. Body lice glue their eggs to coarse fibers and inner seams of clothing, and occasionally to coarse hairs of the body. Eggs hatch in about 1 week. The life cycle is completed in about 27 days.

Body lice remain on clothing except when feeding on the host. In underdeveloped countries, body lice are known to transmit louse-borne typhus and relapsing fever. Infestations are rare in developed countries.

Pubic or Crab Lice

Crab lice usually live in pubic hair, but may be found on the chest, in the armpits, on eyelashes and on beards. Crab lice are easily recognized by their crab-like appearance. They vary in color from dark grey to brown and measure about 1.5 to 2.0 mm long. The body is nearly as wide as it is long. The second and third pairs of legs are stout.

Adults live 3 to 4 weeks. A single female will deposit about 26 eggs. Eggs hatch in 6 to 8 days and nymphs immediately feed on the host. The immatures pass through three nymphal stages before becoming adults. The life cycle is completed in 34 to 41 days.

Crab lice are not known to transmit any diseases. Their bites produce bluish swellings on the skin. Crab lice are spread mainly through intimate physical contact, so infestations are often associated with promiscuity. It is possible that eggs on loose hairs left on bedding and toilet seats may spread an infestation from one person to another.

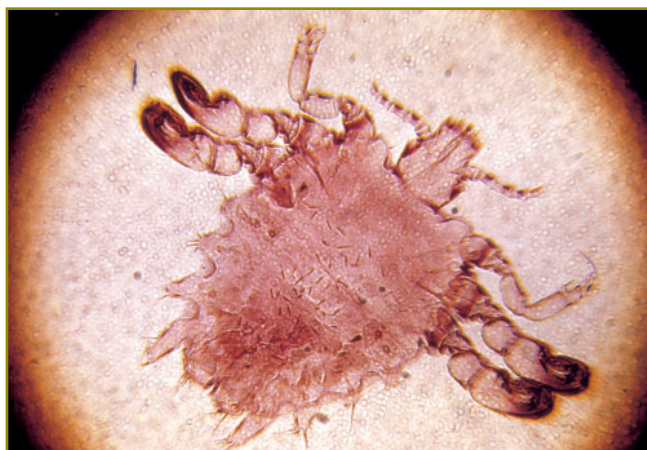


Figure 3. Crab louse.

Preventing Lice

The best preventative is good hygiene.

- Bathe daily. Thoroughly shampoo your hair several times each week.
- Do not share hair brushes, combs, hats or head gear with others. Wash combs and brushes often in hot, soapy water.
- Machine wash bedding and clothing frequently. Or, have clothing dry cleaned.
- Thick, long hair is ideal for head lice. If you have long hair you can minimize head lice problems by wearing your hair tightly braided and by thoroughly combing it each day.
- Avoid close physical contact with anyone who is infested.

Controlling Lice

If you know or suspect you have lice, seek help from a doctor, a school nurse, or the Texas Department of Health. Follow the advice and instructions you receive. You will probably be advised to use a specially medicated product (shampoo, lotion, hair rinse or mousse), as well as a fine-toothed louse comb, to remove lice. Such products are available over-the-counter and contain permethrin or pyrethrum plus piperonyl butoxide as the active ingredient. Other products are available only by prescription.

Head lice are sometimes hard to control, so be sure to follow the directions on the product label. Use the correct dose and apply it as directed. If a product does not seem to be working, switch to a product with a different active ingredient. Also let your doctor and the Texas Department of Health know that a treatment product was not effective; it may be a sign that lice have developed resistance to the product.

A second treatment must be made 7 to 10 days after the first to kill newly hatched lice. Without this second treatment, the infestation will continue.

Shampoos containing coconut oil or olive oil are a popular alternative to insecticides. However, there is no research to show whether or not oils work, and removing them from the hair can be difficult. There is no evidence that home remedies such as mayonnaise, margarine, Vaseline®, and food-grade oils are effective. **Never use dangerous products such as gasoline, kerosene, motor oil, household pesticides and pet shampoos.**

In addition to using a medicated product, it is a good idea to remove lice and nits by hand. This can be time consuming. These tips will make the task easier.

- Have the person sit under a bright light.
- Brush the hair to remove tangles.
- Divide the hair into sections. Carefully examine each section of hair for attached nits and lice. Using a fine-toothed lice comb, carefully work through each section from the scalp to the ends of the hair. Sections of hair not being worked should be fastened aside.
- Clean the lice comb frequently by dipping it in hot, soapy water. Use tape to remove nits and debris from the comb.
- Repeat the thorough examination every day for 10 days, or until no more active lice or nits are found.

To control an infestation, you will need to wash bedding, clothing and towels in hot water (at least 125 degrees F) for at least 10 minutes. For treating bedding and furniture that cannot be laundered or dry cleaned, there are products labeled for such use.

Thoroughly vacuum carpets, pillows and mattresses to remove fallen hairs with attached nits. Wash brushes and combs in hot (at least 125 degrees F), soapy water for about 20 minutes.

Homes and schools should not be treated with insecticides. Lice do not hide in wall crevices and floor cracks like cockroaches and other household pests, so such treatments would be wasteful and ineffective.

When a person has a louse infestation, it is critical that all family members and classmates be thoroughly inspected and undergo simultaneous treatment if necessary. Almost all schools have a "no nit" policy, meaning that students who have infestations may not return to school until they are free of lice and nits. Parents should work closely with school nurses, teachers and administrators to handle infestations as discretely as possible so that children are not subjected to needless embarrassment.

For further information

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