

Human Lice

ARTHUR L. ANTONELLI, Extension Entomologist, Washington State University-Puyallup
LYNDEN P. BAUM, Vector Control Consultant, Health Services Division, Dept. of Social & Health Services

Human lice infestations have become more common over the last several years. This may be a result of changing life styles, such as the increase in communal living, transient residency, and the tolerance of promiscuity. As the infestations become widespread, it is important to become knowledgeable about lice, conditions that favor infestation, and prevention and control.

Generally, lice spread rapidly under conditions (frequently unsanitary) of crowding or close personal contact. These conditions occur in many schools where children are in contact through play (head lice particularly), in certain living conditions of military personnel in overseas operations, in slum areas, in increased sexual contacts, and to a lesser degree in public toilet facilities. Other activities can also lead to louse infestations. These include the sharing or lending of personal items, such as combs, towels, hats, and other articles of clothing.

To temporarily acquire a louse is not necessarily an indication of life style or personal hygiene- anyone can acquire lice. This could happen through standing in a crowded bus or waiting in a line next to an infested individual. Such an infestation could be temporary and may even go unnoticed if the person acquiring lice under these circumstances practices good hygienic habits. Further discussion of prevention methods and ultimate control of lice appears later under separate headings.

The implications of louse infestation (called Pediculosis) are several-fold. First of all, the social taboo or unacceptance of the condition is particularly apparent. Then, too, there is potential for disease, at least in some areas. The body louse has, in the past, been implicated as the vector for louse-borne relapsing fever, trench fever, and epidemic typhus. The occurrence of such diseases was usually during time of war, famine, or other human disaster. These louse-borne diseases have not been reported in the United States for several decades. Louse infestations also may lead to personal discomfort, anemia, lethargy, and skin maladies if allowed to continue without treatment. The toxic reaction of louse feeding causes itchiness, swelling, red spots (blue spots with crab lice), and rash. Additionally, continued scratching may lead to infection.

Two species of human lice occur. One kind includes head and body lice, *Pediculus humanus* (subspecies *capitus* and *humanus*, respectively), and the crab or pubic louse, *Phthirus pubis*. Both kinds occur almost exclusively on humans. These lice belong to the group called sucking lice (Anoplura).

Biology and Description

In general, the life history of human lice is quite similar. Lice have three distinct stages—the egg (nit), the nymph, and the adult. The fertilized female louse lays eggs (up to 200 in head and body lice), which hatch in about a week. The young nymphs go through two molts. Nymphal development takes about 2 to 3 weeks. The third molt produces adult lice. The adult lives 3 to 4 weeks.

Basic differences exist between these lice. The head louse and the body louse (Fig. 1) are the same species. Authorities however, consider them subspecies due to differences in habits. There is also slight difference in size. Head lice are generally 10-29 percent smaller than body lice. These lice range from 2-3 mm in length, are longer than they are broad, and are dirty-white to grayish black. Head lice generally reside on the scalp or skin and attach the eggs or “nits” (Fig. 1) close to the base of the hair.

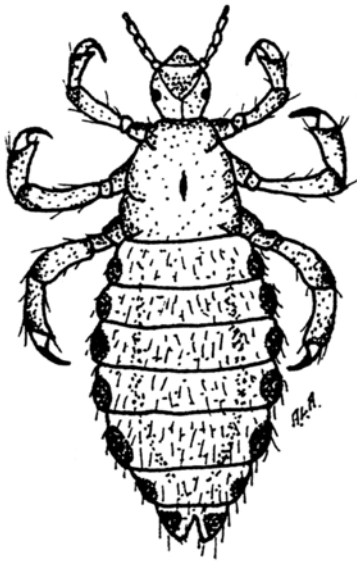


Fig. 1. Head or body louse adult. By A.L. Antonelli.



Fig. 2. Crab louse adult. By A.L. Antonelli.

Body lice generally reside in clothing or bedding. They most frequently occur in seams of undergarments or places where the body is in close contact with clothing, such as the crotch, waistline, or armpits. Their eggs are glued to clothing and only occasionally to body hairs. Body louse contact with the skin is during feeding only.

Crab lice are approximately 1 mm long and about as broad as they are long. They are grayish-white or somewhat pink and crab-like in appearance (Fig. 2). They mainly infest the coarse body hairs of the pubic or perianal areas, although they have been taken from the eyebrows also. Their nits are attached to those coarse hairs.

Infestation by head or body lice can come about in a variety of ways. Infestation by crab lice, however, is mostly confined to sexual contact, although they can be acquired from sitting on an “inoculated” toilet seat or from clothing in a crowded locker room.

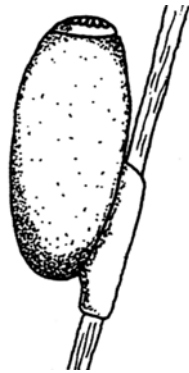


Fig. 3. Head or body louse egg sac.
By A.L. Antonelli.

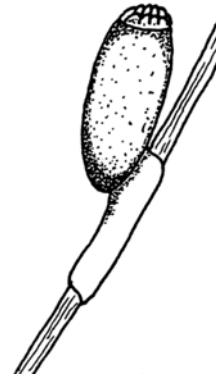


Fig. 4. Crab louse egg sac.
By A.L. Antonelli.

Prevention

The prevention of louse infestation becomes automatic when one understands and avoids the conditions that lead to infestation. The following practices will help in preventing louse infestations:

- Avoid close contact with individuals who are infested, particularly at night, since lice are more active in the dark and are more apt to wander onto a new host.
- Bathe frequently with hot water and soap and rub dry with a rough towel. This habit is not conducive to continued louse infestation.
- Change and launder clothing often, particularly underwear. Lice and their nits are killed readily by hot water or dry cleaning.
- If lice are suspected—frequently inspect likely areas of infestation so that you can halt a potentially growing problem.
- Avoid using sleeping facilities of those you suspect might have the problem.
- Avoid unsanitary, crowded conditions when possible.
- Avoid unsanitary public or private toilet facilities, if possible. If necessary to use such facilities, bang the toilet seat against the toilet tank prior to use to jar any crab lice off. Thorough wiping of the seat is also effective in removing them.
- Avoid letting individuals use personal articles such as combs or hats.

Control

Begin control or treatment at once when an infestation is evident. Use a magnifying glass to check for lice, as they are small and in slight infestations could be missed. Also, running a hot comb through the hair can assist examination for head lice. Heat excites lice and they are easily dislodged this way. This technique has the added advantage of instant removal of visible lice, while chemical treatment is employed for the tiny nymphs and the unhatched eggs.

Nits are glued to the hair with an insoluble cement. Removal is near impossible without destruction of hair. Nit disappearance occurs with hair growth and removal through haircuts. Nits which are more than one-fourth inch from the scalp have hatched or are nonviable.

Control can be achieved in many cases with close, frequent, personal attendance and rigorous hygienic practices. Use of commercially prepared remedies can insure elimination of the pest. Both prescription and over the counter medications are available. Consult with your physician and/or pharmacist for the best choice for you.

Head and body lice can exist away from the host for up to 10 days if temperature and humidity are right, so there is a danger from reinfestation from surfaces or furniture or coats, etc. Therefore, vacuuming furniture or dry cleaning such articles of clothing is recommended practice during the overall control program. Crab lice can only live away from the host up to 24 hours, and in most cases considerably less; therefore there is less danger of reinfestation from other sources.