



Handbook regarding Lice Management



2009-2010 School Year

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This Package Contains the Following:

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What are head lice?

The head louse, or *Pediculus humanus capitis* (peh-DICK-you-lus HUE-man-us CAP-ih-TUS), is a parasitic insect that can be found on the head, eyebrows, and eyelashes of people. Head lice feed on human blood several times a day and live close to the human scalp. Head lice are not known to spread disease.

Who is at risk for getting head lice?

Head lice are found worldwide. In the United States, infestation with head lice is most common among preschool children attending child care, elementary school children, and the household members of infested children. Although reliable data on how many people in the United States get head lice each year are not available, an estimated 6 million to 12 million infestations occur each year in the United States among children 3 to 11 years of age. In the United States, infestation with head lice is much less common among African-Americans than among persons of other races, possibly because the claws of the head louse found most frequently in the United States are better adapted for grasping the shape and width of the hair shaft of other races.

Head lice move by crawling; they cannot hop or fly. Head lice are spread by direct contact with the hair of an infested person. Anyone who comes in head-to-head contact with someone who already has head lice is at greatest risk. Spread by contact with clothing (such as hats, scarves, coats) or other personal items (such as combs, brushes, or towels) used by an infested person is uncommon. Personal hygiene or cleanliness in the home or school has nothing to do with getting head lice.

What do head lice look like?

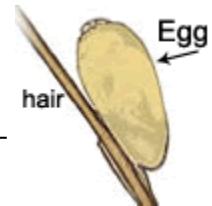
Head lice have three forms: the egg (also called a nit), the nymph, and the adult.



Actual size of the three lice forms compared to a penny. (CDC Photo)

Illustration of egg on a hair shaft. (CDC)

Egg/Nit: Nits are lice eggs laid by the adult female head louse at the base of the hair shaft nearest the scalp. Nits are firmly attached to the hair shaft and are oval-shaped and very small (about the size of a knot in thread) and hard to see. Nits often appear yellow or white although live nits sometimes appear to be the same color as the hair of the infested person. Nits are often confused with dandruff, scabs, or hair spray droplets. Head lice nits usually take about 8-9 days to hatch. Eggs that are likely to hatch are usually located no more than $\frac{1}{4}$ inch (or 1 centimeter) from the base of the hair shaft.



Nymph form. (CDC Photo)

Nymph: A nymph is an immature louse that hatches from the nit. A nymph looks like an adult head louse, but is smaller. To live, a nymph must feed on blood. Nymphs mature into adults about 9-12 days after hatching from the nit.

Adult louse. (CDC Photo)

Adult: The fully grown and developed adult louse is about the size of a sesame seed, has six legs, and is tan to grayish-white in color. Adult head lice may look darker in persons with dark hair than in persons with light hair. To survive, adult



head lice must feed on blood. An adult head louse can live about 30 days on a person's head but will die within one or two days if it falls off a person. Adult female head lice are usually larger than males and can lay about six eggs each day.

Where are head lice most commonly found?



Adult louse claws. (CDC Photo)

Head lice and head lice nits are found almost exclusively on the scalp, particularly around and behind the ears and near the neckline at the back of the head. Head lice or head lice nits sometimes are found on the eyelashes or eyebrows but this is uncommon. Head lice hold tightly to hair with hook-like claws at the end of each of their six legs; head lice nits are cemented firmly to the hair shaft and can be difficult to remove.

What are the signs and symptoms of head lice infestation?

- Tickling feeling of something moving in the hair.
- Itching, caused by an allergic reaction to the bites of the head louse.
- Irritability and difficulty sleeping; head lice are most active in the dark..
- Sores on the head caused by scratching. These sores can sometimes become infected with bacteria found on the person's skin.

How did my child get head lice?

Head-to-head contact with an already infested person is the most common way to get head lice. Head-to-head contact is common during play at school, at home, and elsewhere (sports activities, playground, slumber parties, camp).

Uncommonly, head lice may be spread by sharing clothing or belongings onto which lice or nits may have crawled or fallen. Examples include:

- sharing clothing (hats, scarves, coats, sports uniforms) or articles (hair ribbons, barrettes, combs, brushes, towels, stuffed animals) recently worn or used by an infested person;
- or lying on a bed, couch, pillow, or carpet that has recently been in contact with an infested person. The risk of getting an infestation by a louse or nit that has fallen onto a carpet or furniture is very small.

Dogs, cats, and other pets do not play a role in the spread of human lice.

How is head lice infestation diagnosed?

The diagnosis of a head lice infestation is best made by finding a live nymph or adult louse on the scalp or hair of a person. Because nymphs and adult lice are very small, move quickly, and avoid light, they can be difficult to find. Use of a magnifying lens and a fine-toothed comb may be helpful to find live lice. If crawling lice are not seen, finding nits firmly attached within a 1/4 inch of base of the hair shafts strongly suggests, but does not confirm, that a person is infested and should be treated. Nits that are attached more than 1/4 inch from the base of the hair shaft are almost always dead or already hatched. Nits are often confused with other things found in the hair such as dandruff, hair spray droplets, and dirt particles. If no live nymphs or adult lice are seen, and the only nits found are more than 1/4-inch from the scalp, the infestation is probably old and no longer active and does not need to be treated.

If you are not sure if a person has head lice, the diagnosis should be made by their health care provider, local health department, or other person trained to identify live head lice.

Treatment

- **General Guidelines**
 - **Treatment of the infested person(s)**
 - **Supplemental measures**
 - **Prevention of infestation**
- **Over-the-counter Medications**
- **Prescription Medications**
- **Which medicine is best?**

General Guidelines

Treatment for head lice is recommended for persons diagnosed with an active infestation. All household members and other close contacts should be checked; those persons with evidence of an active infestation should be treated. Some experts believe prophylactic treatment is prudent for persons who share the same bed with actively-infested individuals. All infested persons (household members and close contacts) and their bedmates should be treated at the same time.

Retreatment of head lice usually is recommended because no approved pediculicide (peh-DICK-you-luh-side) is completely ovicidal. To be most effective, retreatment should occur after all eggs have hatched but before new eggs are produced. The retreatment schedule can vary depending on the pediculicide used.

When treating head lice, supplemental measures can be combined with recommended medicine (pharmacologic treatment); however, such additional (non-pharmacologic) measures generally are not required to eliminate a head lice infestation. For example, hats, scarves, pillow cases, bedding, clothing, and towels worn or used by the infested person in the 2-day period just before

treatment is started can be machine washed and dried using the hot water and hot air cycles because lice and eggs are killed by exposure for 5 minutes to temperatures greater than 53.5°C (128.3°F). Items that cannot be laundered may be dry-cleaned or sealed in a plastic bag for two weeks. Items such as hats, grooming aids, and towels that come in contact with the hair of an infested person should not be shared. Vacuuming furniture and floors can remove an infested person's hairs that might have viable nits attached.

Treat the infested person(s): Requires using an over-the-counter (OTC) or prescription medication. Follow these treatment steps:

1. Before applying treatment, it may be helpful to remove clothing that can become wet or stained during treatment.
2. Apply lice medicine, also called pediculicide, according to the instructions contained in the box or printed on the label. If the infested person has very long hair (longer than shoulder length), it may be necessary to use a second bottle. Pay special attention to instructions on the label or in the box regarding how long the medication should be left on the hair and how it should be washed off.

WARNING: Do not use a creme rinse, combination shampoo/conditioner, or condition before using lice medicine. Do not re-wash the hair for 1-2 days after the lice medicine is removed.

3. Have the infested person put on clean clothing after treatment.
4. If a few live lice are still found 8-12 hours after treatment, but are moving more slowly than before, do not retreat. The medicine may take longer to kill all the lice. Comb dead and any remaining live lice out of the hair using a fine-toothed nit comb.
5. If, after 8-12 hours of treatment, no dead lice are found and lice seem as active as before, the medicine may not be working. Do not retreat until speaking with your health care provider; a different lice medicine (pediculicide) may be necessary. If your health care provider recommends a different pediculicide, carefully follow the treatment instructions contained in the box or printed on the label.
6. Nit (head lice egg) combs, often found in lice medicine packages, should be used to comb nits and lice from the hair shaft. Many flea combs made for cats and dogs are also effective.
7. After each treatment, checking the hair and combing with a nit comb to remove nits and lice every 2-3 days may decrease the chance of self-reinfestation. Continue to check for 2-3 weeks to be sure all lice and nits are gone.
8. Retreatment generally is recommended for most prescription and non-prescription (over-the-counter) drugs after 9-10 days in order to kill any surviving hatched lice before they produce new eggs. However, if using the prescription drug malathion, retreatment is recommended after 7-9 days ONLY if crawling bugs are found.

Supplemental Measures : Head lice do not survive long if they fall off a person and cannot feed. You don't need to spend a lot of time or money on housecleaning activities. Follow these steps to help avoid re-infestation by lice that have recently fallen off the hair or crawled onto clothing or furniture.

1. Machine wash and dry clothing, bed linens, and other items that the infested person wore or used during the 2 days before treatment using the hot water (130°F) laundry cycle and the high heat drying cycle. Clothing and items that are not washable can be dry-cleaned

OR

sealed in a plastic bag and stored for 2 weeks.

2. Soak combs and brushes in hot water (at least 130°F) for 5-10 minutes.
3. Vacuum the floor and furniture, particularly where the infested person sat or lay. However, the risk of getting infested by a louse that has fallen onto a rug or carpet or furniture is very small. Head lice survive less than 1-2 days if they fall off a person and cannot feed; nits cannot hatch and usually die within a week if they are not kept at the same temperature as that found close to the human scalp. Spending much time and money on housecleaning activities is not necessary to avoid reinfestation by lice or nits that may have fallen off the head or crawled onto furniture or clothing.
4. Do not use fumigant sprays; they can be toxic if inhaled or absorbed through the skin.

Prevent Reinfestation:

- Avoid head-to-head (hair-to-hair) contact during play and other activities at home, school, and elsewhere (sports activities, playground, slumber parties, camp). Lice are spread most commonly by direct head-to-head (hair-to-hair) contact and much less frequently by sharing clothing or belongings onto which lice or nits may have crawled or fallen.
- Do not share clothing such as hats, scarves, coats, sports uniforms, hair ribbons, or barrettes.
- Do not share infested combs, brushes, or towels.
- Do not lie on beds, couches, pillows, rugs, carpets, or stuffed animals that have recently been in contact with an infested person.
- To help control a head lice outbreak in a community, school, or camp, children can be taught to avoid activities that may spread head lice.

Over-the-counter Medications

Many head lice medications are available over-the-counter without a prescription at a local drug store or pharmacy. Each over-the-counter product approved for the treatment of head lice contains one of the following active ingredients.

1. **Pyrethrins** (pie-WREATH-rins) combined with piperonyl butoxide (pie-PER-a-nil beu-TOX-side);
Brand name products: A-200*, Pronto*, R&C*, Rid*, Triple X*.

Pyrethrins are naturally occurring pyrethroid extracts from the chrysanthemum flower. Pyrethrins are safe and effective when used as directed. Pyrethrins can only kill live lice, not unhatched eggs (nits). A second treatment is recommended in 9-10 days to kill any

newly hatched lice before they can produce new eggs. Treatment failures can be common depending on whether lice are resistant to pyrethrins in the patient's geographic location. Pyrethrins generally should not be used by persons who are allergic to chrysanthemums or ragweed.

2. **Permethrin lotion 1%** (per-meth-rin);
Brand name product: Nix*.

Permethrin is a synthetic pyrethroid similar to naturally occurring pyrethrins. Permethrin lotion 1% is approved by the FDA for the treatment of head lice. Permethrin is safe and effective when used as directed. Permethrin kills live lice but not unhatched eggs. Permethrin may continue to kill newly hatched lice for several days after treatment. A second treatment often is necessary in 9-10 days to kill any newly hatched lice before they can produce new eggs. Treatment failures can be common depending whether lice are resistant to permethrin in the patients geographic location. Permethrin is not approved for use in children less than 2 years old.

Prescription Medications

The following medications approved by the U.S. Food and Drug Administration (FDA) for the treatment of head lice are available only by prescription.

1. **Malathion lotion 0.5%**;
Brand name product: Ovide*

Malathion is an organophosphate. Malathion lotion 0.5% is approved by the FDA for the treatment of head lice. The formulation of malathion approved in the United States for the treatment of head lice is a lotion that is safe and effective when used as directed. Malathion is pediculicidal (kills live lice) and partially ovicidal (kills some lice eggs). A second treatment is recommended if live lice still are present 7-9 days after treatment. Malathion is intended for use on persons 6 years of age and older. Malathion can be irritating to the skin and scalp; contact with the eyes should be avoided. Malathion lotion is flammable; do not smoke or use electrical heat sources, including hair dryers, curlers, and curling or flat irons, when applying malathion lotion and while the hair is wet. See our information on treating with **Malathion** for more details.

2. **Lindane shampoo 1%**;
Brand name products: None available

Lindane is an organochloride. Although lindane shampoo 1% is approved by the FDA for the treatment of head lice, it is not recommended as a first-line therapy. Overuse, misuse, or accidentally swallowing lindane can be toxic to the brain and other parts of the nervous system; its use should be restricted to patients who have failed treatment with or cannot tolerate other medications that pose less risk. Lindane should not be used to treat premature infants, persons with a seizure disorder, women who are pregnant or breast-

feeding, persons who have very irritated skin or sores where the Lindane will be applied, infants, children, the elderly, and persons who weigh less than 110 pounds.

Which medicine is best?

If you aren't sure which medicine to use or how to use a particular medicine, always ask your physician, pharmacist, or other health care provider. CDC does not make recommendations about specific products. When using a medicine, always carefully follow the instructions contained in the package or written on the label, unless the physician and pharmacist direct otherwise.

When treating head lice

1. Do not use extra amounts of any lice medication unless instructed to do so by your physician and pharmacist. The drugs used to treat lice are insecticides and can be dangerous if they are misused or overused.
2. Do not treat an infested person more than 2-3 times with the same medication if it does not seem to be working. This may be caused by using the medicine incorrectly or by resistance to the medicine. Always seek the advice of your health care provider if this should happen. He/she may recommend an alternative medication.
3. Do not use different head lice drugs at the same time unless instructed to do so by your physician and pharmacist.