

---

# School Pest Solutions

---



## Head Lice

Pediculosis capitis refers to symptoms caused by human head lice infesting the head hair of a person. Head lice are not known to transmit infectious agents, nor do they discriminate among socioeconomic groups. They are more commonly found on children of preschool and early elementary school age. Overall, about 1% of 5–12 year olds are infested. Girls are infested more often than boys, and parents and siblings sometimes acquire head lice. Lice and their eggs (called nits) are usually limited to the head hair.



### Life Stages of Head Lice

**Nit (louse egg)**—Nits are laid onto the hair shaft, close to the scalp. They are oval in shape and may undergo several color changes as they develop. They take 8–12 days to develop and hatch. With magnification the developing nymph may be seen within the egg. Eggs that have died or hatched will remain firmly attached to the hair, but will never again produce another louse.

**Nymph**—The nymph is the immature stage of the louse. These look just like an adult louse, only smaller and are unable to reproduce yet. They mature into adults in about 9–12 days after hatching. Nymphs must feed on human blood to survive and grow.

**Adult**—Adults are about the size of a sesame seed, have six legs, are wingless, and may be tan to grayish-white or even have a reddish tinge. Adult females may live up to 30 days on the head of the infested person. As with nymphs, they feed once or more often each day. Lice are unable to survive longer than 1-2 days away from the human body and are unable to live on pets.

### Signs, Symptoms, and Transmission

Students with head lice are usually asymptomatic, but some may experience itching from an allergic reaction to the bites or irritation from sores caused by bites. Transmission occurs from head to head contact with an infested person. The transmission from hats, combs, pillows, etc. is possible but much less likely.

### Reasons for Chronic Infestations

- Misdiagnosis
- Non-compliance
- Resistance to treatment (Lice on children who are treated repeatedly are more likely to be resistant to treatment.)
- New infestations
- Ineffectiveness of treatment

## Diagnosis

Head lice may be found anywhere on the head hair, but are often easiest to locate on the scalp behind the ears and near the neckline at the back of the neck. Adult female lice deposit nits on the hair about 1 mm from the scalp. Under good lighting and using a comb, search the head for viable nits and crawling lice. Live lice are sometimes difficult to see as they move quickly and there are usually less than 10 lice on a head. Tape the live louse on a white background and view with magnification to see it more clearly.

## Treatment

Treatment is recommended only for individuals found with live lice or viable eggs. If nits are found further than about ¼ inch from the head, they are probably hatched and no longer viable.

- Nit Combs. Combing with a nit comb can sometimes be effective in removing viable nits and lice. Nits that are more than ¼ inch from the scalp are not likely to be viable and need not be removed. Comb daily until no live lice are discovered for two weeks. Recheck in 2-3 weeks after you think all lice are gone.
- Over the counter lice shampoo. As with all drugs, directions must be followed exactly. These products may be rinsed from the hair over a sink rather than shower or bath to limit exposure to the body. A second treatment may be required in about 10 days.
- Prescription lice shampoo medications. These products contain other insecticides that require greater care for treatments, and should be used only under a physician's care, and only if live lice persist following treatment with the over-the-counter products. Parents should be advised to discuss with their health care provider specific instructions for use of these products, potential risks and benefits, and other possible treatment recommendations.
- Alternative treatments (petroleum jelly, mayonnaise, margarine, herbal oils, enzyme-based products and olive oil) should be avoided as there is no conclusive evidence that these treatments are effective or necessarily safe. Oils may facilitate the absorption of insecticides in shampoos.

Family members of a student with head lice should be encouraged to inspect themselves to see if lice are present. All individuals found with lice should be treated simultaneously. Inform family members that bedding, towels, nightclothes, and other clothing that was in contact with the head within a day of treatment should be washed and/or dried in the dryer at high heat (if appropriate). Combs, brushes, and hair accessories used by the student should be rinsed in hot water each day until lice are eliminated.

Do not treat the premises with pesticides! Treating rooms, carpets, desks, etc. is not recommended. Vacuuming floors, especially carpets recently occupied by infested persons are recommended. Lice will soon die (generally within two days) once off the head for a day. Nits attached to hair that have fallen from an infected person will likely stop developing and will also die within a few days. Although it is not necessary to thoroughly clean school busses, vacuuming floors of classrooms or homes occupied by infected persons will help dispel concerns about lice or eggs that may have dropped from an infected person. Clothing, pillows, cloth toys, and other items that may have been used by infested children may be treated by heating in a clothes dryer on high heat or by sealing in a plastic bag for two weeks.

## Recommendations for School Policy

- Routine head check of healthy students is not recommended. Check symptomatic students.
- When nits ¼ inch or closer to the scalp or live lice are discovered, do not exclude from school, but notify the parent that day and provide instructions on how to treat and eliminate.
- The school nurse may offer extra help to families with chronic infestations. The American Academy of Pediatrics recommends that no healthy child be excluded from or allowed to miss school because of head lice, and discourages 'no nit' policies for return to school. The National Association of School Nurses state that nit-free policies disrupt the education process and should not be viewed as an essential

strategy in the management of head lice. Health and Health Care in Schools. Children with nits do not pose an immediate threat to the health of others; therefore, excluding these children from school and requiring them to be treated with a pesticidal product is probably excessive.

## **Photo Credits**

Dani Barchana, self employed, Bugwood.org

## **For More Information**

Hillary Peterson  
Maine School IPM Coordinator  
Maine Department of Agriculture, Conservation and Forestry  
28 State House Station  
Augusta, ME 04333-0028  
E-mail: [hillary.peterson@maine.gov](mailto:hillary.peterson@maine.gov)  
Phone: 207-215-4793  
Fax: 207-287-7548

*Written by Kathy Murray, Ph.D.*