

## **Pediculosis (headlice)**

**Etiology:** Lice are external parasites of the human host. There are three types of lice, which infest humans; the one of most concern in the school setting is Pediculosis Humanus Capitis. Lice are 2-4 mm in length, wingless, gray-brown, hairy, flat insects, and have special mouthparts for piercing and sucking.

Lice cannot jump or fly. They do not survive for more than two days away from their source of food. The life span for an adult louse is approximately one month. Adult female lice can lay eggs at a rate of 8-10 per day, producing large populations of lice within 3-4 weeks.

Head lice generally inhabit only the hairy surface of the scalp preferring the nape of the neck and the area behind the ears. Diagnosis is made by direct inspection of the hair and scalp for the presence of crawling lice (adult or nymphs) and/or nits (unhatched eggs). Female lice lay eggs at the junction of the scalp.

Louse eggs are grayish white and oval, darkening to a tan or coffee color as they mature. They are firmly attached to the shaft of hair by a cement-like substance. Eggs hatch in about a week. The nymph matures into an adult louse in 8-9 days at which time it is capable of reproduction.

Once hatched, the egg casing appears white and may be confused with dandruff or a particle of dried hair spray. Nits that contain air pockets or have a shrunken or indented shape will not hatch.

**Clinical Manifestations:** The primary clinical symptoms of lice are itching of the scalp, back of the neck and behind the ears. Scratch marks or what appears to be a rash often accompanies the itching. Secondary excoriations and infection accompanied by cervical lymphadenopathy can occur from vigorous scratching and may require antibiotic treatment.

**Screening Procedures:** Diagnosis of head lice is made by direct inspection of the hair and scalp for the presence of lice or nits. To examine a student for pediculosis, part the hair with wooden tongue blades or applicator sticks. Use separate tongue blades or applicators for each student. Wearing gloves is not necessary. Watch closely for movement on or near the scalp and for nits on strands of hair.

Measures should be taken to assure that those students with head lice are not identified to other students. An immediate head check of all siblings, children in the same childcare setting and classmates of the infected child should be done.

**Mode of Transmission:** Coming into direct contact with an infested person, and to a lesser extent, indirect contact with fomites such as hairbrushes, stuffed animals, caps, scarves and coats. Lice are only viable on fomites for only a short period of time.

**Incubation Period:** 6-10- days.

**Reporting Requirements:** None. However, local health department's assistance may be helpful when recurrent infestations occur in the same environment.

**Management:** The key to interrupting transmission of infestation is attention to all four areas of treatment.

1. **Kill lice using an approved pediculicide**, correctly applied, following label instructions.  
Some additional information:
  - Most do not need a prescription.
  - Pediculicides are effective in killing live lice.
  - Pediculicides are not as effective in killing eggs; treatment should be repeated in 10 days to kill newly hatched lice.
  - Reexamine to verify treatment effectiveness.
  - Inappropriate use of certain Pediculicides is reported to have toxic effects.
  - Inadequate use of Pediculicides can result in treatment failure.
2. **Remove nits** after shampooing:
  - Several aids on market
  - May require manual removal with fingernails or tweezers.
3. **Screens contacts and treat if infested:**
  - All household members
  - Classmates
  - Others (e.g. sports team members, bus seatmates)
3. **Treat environment:**
  - The person puts on clean clothing and uses fresh bedding, towels and linens. All clothing (especially coats and sweaters), bedding and other linen, which the person used before treatment, should be cared for using one of the following methods:
    - a. Machine wash on hot cycle (130F). Since heat is lethal to lice and their eggs, personal articles can be disinfected by machine-washing in hot water.
    - b. Dry using the hot cycle of the dryer.
    - c. Dry-clean.
    - d. Personal articles of clothing or bedding in addition to stuffed animals may be placed in a plastic bag and sealed for a period of 10 days. Head lice die in about 48 hours without a blood meal and nits kept at room temperature for 10 days do not hatch.
    - e. Iron items with a hot iron.
    - f. For combs and brushes, soak for one hour in a 2% Lysol solution or heat them in a pan of water for 5-10 minutes can disinfect.

**Management:** Once active infestation has been identified, communication with the

parent should include an explanation of the problem, possible methods of treatment, and the importance of examining other family members and treating simultaneously if found to be infested.

If a student still has signs of infestation after two treatment attempts, request help from the local health department or the student's private health care provider. The risk of transmission between treatments is probably less than prior to treatment since newly hatched nymphs are fragile and tend to remain closer to the scalp than adult lice. They are, therefore, less likely to be brushed off or transferred to a new host.

American Academy of Pediatrics and NYS Education Department do NOT support "no nit" policies that exclude students from school. School districts determine.

**Classroom Activity:** When an outbreak of pediculosis is recognized at school, classroom activities involving frequent body contact between students should be temporarily suspended.

**Buses:** During an outbreak of pediculosis, rules applicable to riding school buses should be more strictly enforced. Students should be asked to sit with the same person(s) each day for one to two weeks until the outbreak is under control.

**School Environment:**

The recommendations given below are considered practical and easy to implement in most schools during an outbreak of pediculosis. It is recommended that:

- A policy of assigning hooks in cloakrooms is initiated.
- Hats are kept in coat sleeves or pockets.
- During an outbreak of pediculosis, a policy of segregation of an infested individual's clothes should be instituted in the gymnasium, work shops, art room, music room, cafeteria and other areas where large plastic bags can be used to separate individual coats, hats, scarves.
- Classroom activities involving "dress-up" costumes or hats should be temporarily discontinued if a case of head lice is detected in the class.
- Resting mats, towels or pillows for younger children should be permanently assigned and kept separated while in use and during storage. Adequate towel service should be provided in locker rooms so those students are not tempted to share towels.
- Carpeted classrooms should be thoroughly vacuumed daily.
- It is NOT advisable to fumigate schools or buses; this practice should not be allowed.

**Future Prevention/Educational Needs:** Although there is no satisfactory way to prevent the occurrence of pediculosis, the following strategies may help to reduce the incidence of infestation.

- Provide health teaching related to the problem including contributing factors, modes of transmission, signs and symptoms, step by step inspection and treatment procedures, care of home and clothing.

- Help people to understand and accept the fact that this is a condition of living, which can affect anyone, any time, anywhere.
- Inform the school community of the scope of school health services related to pediculosis control including: inspection of students' hair and head, district policy relative to exclusion and readmission, parent notification and follow-up activities. Be sure to include the ways in which parents may help as well as the name and phone number of the school health service staff member to be contacted if parents require assistance and advice.
- Incorporate this topic in the school health education curriculum at all age levels. When an outbreak occurs in a classroom, notify parents of the other children by letter so they can monitor their children for infestations. To help contain the outbreak, any new infestations should be reported to school health personnel.