

Guidelines for Pediculosis Control

To provide effective management of pediculosis

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The nursing profession is moving toward evidence-based practice in all specialties. Head lice screening programs have not been proven to have a significant effect on the incidence of head lice in the school setting over time and are not cost-effective (Frankowski & Weiner, 2002). Head lice rarely cause any direct harm, and they are not known to transmit infectious agents. They should not be considered a medical or public health problem. The greatest harm associated with head lice results from the well-intentioned but misguided use of caustic or toxic substances to eliminate the lice (Pollack, 2000). An evidence-based lice policy will promote a healthy school environment that gives every student the best chance for academic success (Sciscione & Krause-Parello, 2007).

Terminology

Pediculosis (head lice) is an infestation of head lice (pediculosis capitus) that can occur on the hair, eyebrows and eyelashes. Body lice (pediculosis corporis) and crab lice (phthirus pubis) can also lead to infestation of the clothing and pubic area, respectively (Control of Communicable Disease Manual, 2004)

“There are three forms of lice:

- **Nits**: Nits are head lice eggs. They are hard to see and are often confused for dandruff or hair spray droplets. Nits are found firmly attached to the hair shaft. They are oval and usually yellow to white in color. Nits take about 1 week to hatch.
- **Nymph**: The nit hatches into baby louse called a nymph. It looks like an adult head louse, but is smaller. Nymphs mature into adults about 7 days after hatching. To live, the nymph must feed on blood.
- **Adult**: The adult louse is about the size of a sesame seed, has six legs, and is tan to grayish-white. In persons with dark hair, the adult louse will look darker. Females lay nits; they are usually larger than males. Adult lice can live up to 30 days on a person’s head. The live, adult lice need to feed on blood.” (CDC 2004)

Biology

Head lice are small parasitic insects exquisitely adapted to living mainly on the scalp and neck hairs of their human host. Their presence does not connote a lack of hygiene or sanitation of their host, but they may *infrequently* be transferred with shared combs, hats and other hair accessories. Lice may also remain on bedding or upholstered furniture for a brief period (Pollack, 2000). Infestation is common among children 3 to 11 years of age, with girls being infested more than boys by 2:1. Adult lice, similar to chameleons, change to adapt to different hair pigments (Sciscione & Krause-Parello, 2007). Head lice are not influenced by hair length; however, routine hair brushing can reduce the number of live lice that remain during an infestation (Frankowski & Weiner, 2002). Lice live for 30 days on hair after they hatch (Sciscione & Krause-Parello, 2007).

Communicability

Head lice can be acquired by direct contact with an infected person (DOE). Neither able to fly nor jump, lice are unlikely to wander far from their preferred habitat (Pollack, 2000). A louse that has fallen from a human host to another surface will not survive long enough to infest a new host. Head lice are transmissible, but the potential for epidemic spread is minimal (Sciscione & Krause-Parello, 2007). Transmission of lice occurs most often among family members due to the close proximity of living conditions (Sciscione & Krause-Parello, 2007). The home, not the classroom, is the major site of contagion (Sciscione & Krause-Parello, 2007). Reports of 'epidemics' of head lice may generally be attributed to incorrect identifications and misdiagnoses. Head lice derive nutrients by blood-feeding once or more often each day, and cannot survive for more than a day or so at room temperature without ready access to a person's blood. Generally an infested person has fewer than a dozen active lice on the scalp at any time, but may have hundreds of viable, dead and hatched eggs. Hatched eggs are nearly transparent (Pollack, 2000).

Symptoms

- Tickling feeling of something moving in the hair
- Itching, caused by an allergic reaction to the bites
- Irritability
- Sores on the head caused by the scratching. These sores can get infected.

(CDC, 2004)

The most common symptom is itching. Individuals with head lice infestation may scratch the scalp to alleviate itching, and rarely there may be a secondary bacterial skin infection such as impetigo and local adenopathy. While the louse is living on the head, it feeds by injecting small amounts of saliva and taking tiny

amounts of blood. The saliva creates an itchy irritation (Frankowski & Weiner, 2002). The saliva promotes vasodilation and has anticoagulant properties that facilitate feeding. Lice feed and mate as often as every four hours and can do both concurrently (Sciscione & Krause-Parello, 2007). With the first case of head lice, itching may not develop for four to six weeks, because it takes time to develop a sensitivity to louse saliva (Frankowski & Weiner, 2002).

Preventative Measures

It is probably impossible to totally prevent lice infestations (Frankowski & Weiner, 2002). Although lice have existed for over 2000 years, they continue to be common amongst children worldwide and elude eradication (DOE). “There is no scientific consensus on the best way to control head lice infestation in school children” (NASN, 2004). But, it is prudent to teach children not to share personal items. In environments where children are together, adults should be aware of the signs and symptoms of head lice infestation, and affected children should be promptly treated (Frankowski & Weiner, 2002).

Nursing Assessment and Intervention

The “gold standard” for diagnosing head lice is finding a live louse on the head (Frankowski & Weiner, 2002). Studies suggest that a child with an active infestation is likely to have had the infestation for at least a month by the time it is discovered (Sciscione & Krause-Parello, 2007). Screening for nits alone is not an accurate way of predicting which children will become infested, and screening for live lice has not been proven to have a significant effect on the incidence of head lice in a school community over time. The tiny eggs, or nits, may be easier to spot within 1 cm of the scalp. Nits, as opposed to dandruff, are difficult to remove because they are glued on. In general, nits found more than 1 cm from the scalp are unlikely to be viable (Frankowski & Weiner, 2002). **Without magnification and suitable experience**, it may be difficult to distinguish nits correctly from materials caught in the hair (Pollack, 2000).

Technique for Inspection

- Use good lighting (at least a 60-watt bulb)
- Part the hair (nape of neck and behind ears) with a wooden applicator stick or gloved hands.
- Crawling forms can be seen with the naked eye.
- Look for nits – silvery ovals usually attached within ¼” of scalp.
- Shafts of hair can be removed with nits attached and examined under a microscope to determine if nits are an active case.

(DOE)

Referral

Treatment should be considered **only** when active lice or viable eggs are observed (Pollack, 2000). If nits are visible farther than 6 mm (1/4") from the scalp and no nymphs or adult lice are seen, (the infestation) does not require treatment (Hansen, 2004). ***It is the position of the National Association of School Nurses (2007) that the diagnosis of pediculosis should not disrupt the education process. According to NASN, "children who have been treated for lice infestations should not be excluded from school because of the existence of residual nits"***. The discovery of lice or their eggs on the hair should not cause the child to be sent home or isolated. There has been no scientific data that demonstrate no-nit policies are effective in reducing the transmission of lice in schools (Pollack, 2000). Exclusion policies were established in response to social stigma and misconceptions about the spread of head lice and are without scientific merit (Sciscione & Krause-Parello, 2007).

Head lice infestation is an inconvenience at best and certainly not an infectious condition that warrants exclusion from school, mass screening, and notification of classmates. Children who have head lice are healthy children who need to be in school to learn. No-nit policies are not consistent with research findings.

- ***School Personnel: Follow chart "Scheme for managing presumed head louse infestations in schools" (Pollack, 2000) for referral process. <http://www.hsph.harvard.edu/headlice/flow.html>***
- ***Distribute chart "Scheme for managing presumed head louse infestations" (Pollack, 2000) to affected families. <http://www.hsph.harvard.edu/headlice/flow2.html>)***
- ***Distribute CDC Fact Sheets "Head Lice Infestation" and "Treating Head Lice" to affected families. http://www.cdc.gov/ncidod/dpd/parasites/lice/factsht_head_lice.htm and http://www.cdc.gov/ncidod/dpd/parasites/lice/factsht_head_lice_treating.htm***

Pharmacists and physicians can assist in recommending over-the-counter and prescribed lice treatments. Directions from the treatment labels should be followed **exactly** regarding application and any repeat treatments. Treating children unnecessarily or improperly contributes to the increasing treatment failures, similar to the emerging resistance to antibiotics (Sciscione & Krause-Parello, 2007).

Prevention of Spread or Re-infestation

Several descriptive studies suggest that it is prudent to periodically provide information to families of **all** children on the diagnosis, treatment, and prevention of head lice. It would be helpful for the school nurse to check a student's head if he/she is demonstrating symptoms (Frankowski & Weiner, 2002). The school nurse should maintain an important role in educating **all constituencies** about head lice and dispelling myths and stigmas regarding lice infestation (NASN, 2004).

Parents of students found to have lice should be notified and given treatment information. Teachers in elementary grades should be reminded to encourage students to keep an adequate distance from each other to prevent any head-to-head contact and to avoid sharing items such as hats, scarves, combs, brushes, etc. If young students nap on carpeted areas, these areas should be vacuumed daily. Eliminating carpeting in classrooms where children spend time on the floor should be considered. Personal nap mats, pillows or blankets should be used if napping on the floor occurs (Frankowski & Weiner, 2002). Insecticide use in the classroom is not warranted.

In addition to hair treatment, personal items used or worn by the infested person during the 2 days before treatment can be cleaned by any of these methods:

- Washing in hot water in washing machine
- Putting in dryer on high heat for 20 minutes
- Dry cleaning
- Storing in a sealed bag for two weeks
- Boiling combs, brushes, curlers, etc. for 10 minutes
- Soaking in 2% Lysol solution and water, rubbing alcohol for 1 hour, or washing with soap and hot water

Thorough vacuuming of carpets, floor and furniture is all that is necessary in the rest of the household. Insecticide sprays are **not** recommended.

Role of the School Nurse

The role of the school nurse in head lice infestation prevention and control is multifaceted. She coordinates care of affected student while ensuring privacy. It is important to create a feeling of shared responsibility with the parents to insure successful treatment. The school nurse also should provide evidence-based educational programs to the school community, as well as staff, and have materials available to distribute. Joan Edelstein has created a PowerPoint presentation on head lice that would be appropriate for staff education. It can be

found on Gerri Harvey's website, School Nurse Perspectives at <http://www.gerriharvey.com> (Sciscione & Krause-Parello, 2007).

References

Centers for Disease Control and Prevention (CDC) -
http://www.cdc.gov/ncidod/dpd/parasites/lice/factsheet_headlice.htm and
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Frankowski, B. & Weiner, L. (2002) Head lice, American Academy of Pediatrics, retrieved <https://aapolicy.aapublications.org/gci/content/full/pediatrics>

Hansen, R.C. (2004). Overview: The state of head lice management and control. The American Journal of Managed Care, 10, S260-S263.

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Sciscione and Krause-Parello (2007). "No-Nit Policies in Schools: Time for Change", The Journal of School Nursing, 23, pp. 13-20