

Information about head lice from:

Centers for Disease Control & Prevention, UAB School of Public Health, American Academy of Pediatrics, Harvard School of Public Health, National Association of School Nurses, Merck Manual of Infectious Disease, New Jersey Department of Health.

All About Head Lice

Although not a serious health hazard, head lice are the cause of much concern, embarrassment and misunderstanding to many people. These "parasites" do not carry disease and are not a sign of uncleanness. The population most often affected by this common "nuisance" is children aged 3 to 12. Because of this, school is often a place where this condition is found among students (school-aged children).



In the past, this condition had been the cause of extensive absences for children because of school "exclusion policies." Leading authorities such as the American Academy of Pediatrics have since changed recommendations for the handling of infestations/outbreaks in schools and childcare settings based on up to date scientific information and studies on this condition and call for revision/omission of so called "no nit" policies.

For more information on this subject, please log onto the following sites:

- [AAP policy statement on Head Lice.](#)
- [The Harvard Study.](#)
- [The CDC.](#)

The following are a few "facts" about this condition based on the latest information.

- Direct head to head contact is the most frequent mode of transmission; although the sharing of combs, brushes, hats and other head gear, as well as towels, bed linens, and upholstery cannot be ruled out, though current experts on the topic tend to believe these "inanimate" objects are not very likely modes of transmission.
- Lice are tiny (about 1-2 mm) grayish/brown parasites that live on the scalp of their human hosts. They do not hop or fly; they only crawl.

- The condition is a "host disease". Lice die quickly when off a human head, usually within 24 hours because they need a "host" (feeding on blood) to survive.
- Hair length, shampooing habits, or brushing habits have nothing to do with infestation.
- The most common symptom is itching, caused by an irritant effect of the lice saliva on the scalp; though not all cases produce itching.
- Lice lay eggs (referred to as "nits") on the hair shaft close to the scalp (3-4 mm from the scalp) which are firmly attached to the hair shaft by a "glue like" substance that they secrete when they lay eggs. These eggs (nits) hatch in approximately 6-10 days. The new lice mature in about 2-3 weeks.
- If nits are found at 8-9 mm from the scalp on the hair shaft, this is evidence of an "old infestation" (and not an active one, if it had been treated), rather than a new one. This is most likely due to having missed removing some nits at the time of recognizing and treating the initial infestation. These nits are no longer "viable" (live or capable of hatching).
- Most over-the-counter products are effective if used properly and reported incidence of "resistance" to the products is low.

Treatment

The American Academy of Pediatrics recommends the use of Permethrin 1% (also known by the brand name "Nix"), as it has a low rate of toxicity for humans. This is available over-the-counter, as well as other common products which are sold over-the-counter, such as Pyrethrin-based shampoos (sold as brand name "Rid"). There is also Lindane 1%, by prescription, and Malathion 0.5% which also requires a prescription for cases that seem to be resistant to the OTC products mentioned above. However, these products have a higher incidence of toxicity or side effects to humans and are therefore not considered "first line" treatments. In addition, there have been reports of resistance to these products also. While "resistance" is possible, it is not "common" and most over-the-counter products have a high degree of effectiveness when used correctly (following the label directions precisely!). One of the most common reasons for treatment failure with these products is not following the directions carefully, such as applying the product to wet hair instead of dry hair. Directions state the product must be applied to dry hair; wet hair dilutes the product and hence the effect of it.

Previously, the presence of nits in the hair after using lice killing treatments were thought to be a source of reinfestation from "hatching" if left on the hair and hours were spent manually removing nits which is very tedious. Current experts now say that it is unlikely that these nits, after exposure to treatment will hatch; since most treatment products will render these nits "unviable" (in other words, not likely to hatch or if they do, hatch a unhealthy louse that would not survive long enough to reach maturity). However, nit removal is often desired more for aesthetic reasons, or to decrease diagnostic confusion.

There have been reports of "smothering agents" such as petroleum jelly, olive oil, or mayonnaise being an effective method of treatment. Please log onto the sites listed above for more information on the effectiveness of these treatments.

What should be done?

Household and close contacts should be examined and treated if infested. Parents may wish to disinfect headgear, pillow cases and towels by washing them in hot water and machine drying, using a hot cycle. Combs and hair brushes can be washed with pediculocide shampoo or soaked in hot water. Upholstery (where heads rest) can be vacuumed. Lice killing sprays are not recommended because the ingredients have a degree of toxicity. Probably one of the most effective actions that can be taken by parents is to keep a close check (inspection every few days) for the next two to four weeks. "Herculean efforts" at cleaning, as was often done in the past, is probably not necessary (because of the evidence that points to inanimate objects as a mode of transmission being unlikely), and because the best recommended method of control is proper use of the pediculocide shampoo, and keeping a close watch for the few weeks following treatment.

The medical and health authorities cited for this information about head lice recommend that *all healthy children who have begun proper treatment to eliminate head lice should not be excluded from attending school.*

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What You Should Know About. . .

Head Lice

What are head lice?

Head lice are small, wingless, grayish-white insects, about 1/16 to 1/8 inch in length, which spend their entire life cycle on the head of humans as bloodsucking external parasites. Head lice have claws especially adapted for clinging to hair shafts.

Where are head lice found?

Head lice are rarely found off the head. They are most commonly found in the hair above and behind the ears and near the nape of the neck.

What is a "nit"?

The nit is a louse egg which is always glued by the female to the base of the hair shaft, only three to four mm from the scalp. A female can lay 50-150 eggs over a three to four-week period.

What is the life cycle of the head louse?

Head lice eggs hatch in seven to nine days into the first nymph stage, which looks like a miniature adult. The nymph takes a blood meal by biting the scalp soon after hatching and continues to feed every three to six hours. In about nine days, the louse will have passed through two more nymphal stages and have achieved the adult stage. The adult remains on the head for its entire lifetime.

Is cleanliness important in preventing head lice?

No. Infestations are not prevented or influenced by personal or household cleanliness, use of shampoos or length of hair. All social and economic groups can be affected by head lice, but African Americans are much less frequently infested than other racial groups.

How does a person get head lice?

Head lice are usually transmitted by close personal contact with the hair of an infested person. However, transmission can also occur through the sharing of personal items, such as hats, headbands or coats, or the storage of these items together, such as in a school classroom. At home, the sharing of such items as combs, brushes, towels, soft toys and bed sheets can also result in transmission.

How long do head lice live away from the head?

Head lice cannot normally survive for more than 48 hours without a blood meal; therefore, they will not survive for long off the head. Very few nits will hatch away from the head, and any nymphs which emerge will die very soon without a blood meal.

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What are the symptoms of pediculosis (an infestation of head lice)?

While persons with light infestations may not notice any problem, itching is the most common symptom, caused by an allergic reaction to the bites. Other symptoms include a tickling feeling of something moving in the hair, irritability, and sores on the head caused by scratching.

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How can you detect a head lice infestation?

Detection of nits, nymphs or adult lice is the only way to confirm the presence of lice. It requires a thorough examination of the scalp. Nymphs and adults move quickly and are often difficult to observe. Finding nits close to the scalp is the usual way to confirm an infestation. However, finding nits which are more than 1/4 inch from the scalp usually indicates that they are old and not viable, despite being firmly cemented to the hair.

Can head lice transmit any diseases?

Head lice do not transmit any diseases. Sores caused by scratching and crusting can result in secondary bacterial infections.

What is the treatment for pediculosis?

To treat a head lice infestation, an over-the-counter (OTC) or prescription shampoo, lotion or cream rinse is used. The instructions of your health care provider and the product label should be followed carefully when using any pesticide medication. Treatment failures are common. If active lice are observed 8-12 hours after treatment, consult again with your health care provider regarding the use of a different product.

Will the medications kill the nits?

There is no guarantee that any product is completely ovicidal (kills all the eggs). Thus, it is extremely important that the hair and scalp be thoroughly checked every 2-3 days after treatment and all nits and lice are removed with a nit comb. Most head lice products recommend a second treatment in seven to 10 days after the first treatment in order to kill any nymphs which emerge from the eggs.

How effective are alternative treatments?

Many alternatives to pediculicides (products designed to treat lice) have been promoted because of treatment failures. Unfortunately, there is little documentation that these methods are effective at killing the lice and nits on the head. Some of these remedies include olive oil, mayonnaise, tea tree oil, petroleum jelly and hair dryers. Among substances which should never be used are kerosene, gasoline and pesticides not registered for treatment of lice, such as diazinon.

How difficult is it to remove all the nits?

Hair should be examined in small sections and the nits removed with the nit comb (some people prefer flea combs, fingernails or tweezers). Certain commercial products and white vinegar may help to loosen the glue holding the nits to the hair, but it will often take many hours over a period of days to remove all of the nits. Because of many reports of lice which are resistant to pediculicides, it is particularly important to remove all nits close to the scalp.

How can my family avoid being infested?

All contacts of an infested person should be examined and treated as necessary. Bed mates and brothers and sisters should also be treated. The examination and treatment of contacts, if necessary, should be done simultaneously. Treated persons should be checked for at least two weeks to be sure the lice and nits are gone. Family members should avoid sharing combs, brushes, towels and other personal items.

What else can be done to prevent the spread of head lice?

Any stray lice and nits on clothing, towels and bedding that the infested person touched during the two days before treatment will be killed by machine washing and drying at temperatures over 128oF. Dry cleaning also kills lice. Stuffed animals and clothing that cannot be washed or dry cleaned may be sealed in a plastic bag for two weeks to kill all lice and nits. Combs and brushes can be soaked for an hour in 2% Lysol solution or heated in a pan of water to 120oF for ten minutes.

Should insecticide sprays be used in the house or school?

Since lice do not survive for long off the scalp, the use of environmental insecticide sprays is not

necessary. Vacuuming carpets and upholstered furniture will remove any stray lice or nits.

What is the school's role in the prevention and control of pediculosis in children?

Because elementary schools and day care centers bring large numbers of children together on a daily basis, they serve as a focus for the transmission of head lice. Head lice are commonly spread by direct head to head contact in the school setting. However, the sharing of personal items such as hats, brushes, combs, etc. may also spread lice between children. It is important for schools to have established

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procedures for screening of children, education of parents and children, follow-up measures and clear admission and restriction policies in order to prevent or control an outbreak. Some schools have adopted a nit free ("no nit") policy which requires that a child be completely free of nits before readmission is permitted. Other measures may also help control a school outbreak. Classroom activities involving contact between students may be temporarily suspended, and children may be asked to store coats, hats, scarves, etc., in separate bags to avoid the transmission of lice. Control measures for head lice will be most effective when the entire community is well informed about head lice and how they are spread, and all families become active participants in the prevention of head lice.