

# HEAD LICE

## Minnesota Department of Agriculture • Integrated Pest Management Fact Sheet Series

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SUBJECT: Head Lice Management in Schools and Homes

### Importance

Head lice (*Pediculus humanus capitis*) feed on blood, primarily on the heads of children. Infestation by head lice is called pediculosis. Fortunately, they do not transmit disease, although their presence can be very bothersome. These lice inject a saliva into their hosts as they feed to prevent the blood from clotting. This results in itching which at best is annoying and at worst can result in infection if scratched too vigorously. Anyone can become infested; the presence of head lice is not the result of unclean conditions.

### Identification

Adult head lice are about 1/8 inch long, grayish, flattened, and wingless. Their legs are claw-like, designed to hold onto hair. These lice excrete partially digested blood which can appear as 'black dandruff'. Lice eggs, commonly referred to as nits, are whitish, oval and the size of a pin-head (1/30 inch long). They are attached to hair near the scalp. Nits that are found further than 1/2 inch from the scalp nearly always have hatched or died.



Photo by Department of Entomology, University of Minnesota

### Biology

Head lice live in very close association with humans, especially on young children. They are found on heads where they take daily blood meals. Head lice cling to hair shafts near the scalp. Adult females glue eggs on hair shafts close to the scalp, usually behind the ears and on the nape of the neck. Eggs hatch after 5 to 10 days. Young head lice (called nymphs) are mobile and molt three times, developing into mature adults in about three weeks. Adults can live for about four weeks but do not lay eggs until after seven days. Head lice do not survive off a host for more than one or two days.

Head lice do not jump or fly. They can however move from an infested person to another person during play or other close contact. Head lice may also spread when an infested child shares combs, brushes, scarves, clothing, hats, towels or similar items. Head lice do not feed on cats, dogs, or other animals.

### Detection and Prevention

If head lice are reported from your children's school, inspect your children regularly. Watch for symptoms of head lice which can include itching and restlessness. A black 'powder' or 'dandruff' may also be visible on the neck and shoulders as well as on pillows. If you suspect head lice, examine the child's head thoroughly. Start from the back of the neck and move forward, parting their hair so that you can examine the base of the hair shaft. Use a good light and a magnifying glass if possible. Check other people in the family, even if they don't appear to be infested.

Debris found loose in the hair are probably not lice; lice or nits are tightly attached to hair. If you find material that you cannot identify, have it diagnosed by a health care professional or entomologist. Not all suspected cases actually involve head lice. Skin flakes, scabs, or other miscellaneous debris can be confused with head lice or nits. Do not treat people unless live lice or viable nits are present.

Educate your children about how lice infest people. Children can help prevent infestations by not sharing combs, brushes, clothes, scarves, and similar articles with classmates.

### Nonchemical Management

Physical removal is an important tactic in head lice control. Use nit combs or cat flea combs to remove the lice and eggs. Because eggs can hatch for up to 10 days after they are laid, comb hair daily for two weeks after you find the last live head lice, to remove any young that have emerged. Nits found further than 1/2 inch from the scalp are probably not viable and can be ignored. You can purchase nit combs through pharmacies or online on the internet.

All bedding and clothing of infested people should be washed and dried at a high temperature (150°F or higher). Pillows or other nonwashable items should be placed in plastic bags and placed in a freezer for several days. It is not necessary to clean other areas of schools or homes. Head lice that are dislodged survive for just a short time off a host.

Combing for nits and cleaning are important even if you choose to use chemical management.

An alternative that has become popular recently is to attempt to suffocate head lice by coating hair overnight with vegetable oil, mayonnaise, baby or mineral oil, or hair gel. Although there are anecdotal reports of this method being successful, there are also reports of failure as well. A drawback to this method is that removing this material from the hair is usually difficult. This method has not been scientifically tested and care should be taken if using this method.

## Insecticidal Management

Head lice maintain an intimate relationship with their host and cannot survive off a human for more than two days. Because of this, control should concentrate on treating infested individuals. Never treat furniture, bedding, floor or walls inside a school or home with insecticide to control head lice.

There are several insecticidal products available to control head lice. Insecticides containing permethrin and synergized pyrethrins are common in shampoos and lotions than can be purchased over-the-counter. If you use one of these products, follow their directions precisely, especially the amount of product to use, frequency of application, and whether the hair should be wet! **Remember, these products contain insecticides and should be used with great care and respect.** Most products recommend reapplying the product in 7 to 10 days after the first application to kill newly hatched lice. Lindane is available by prescription. However, this is a more toxic product and its use is discouraged.

Physical removal of lice (nit picking) together with chemical application will increase treatment success.

## What if an Insecticide Treatment Fails?

There are several reasons that may explain an apparent insecticide treatment failure. First, a health care professional or entomologist should confirm that live

head lice and/or viable nits are present. What appears to be an infestation may be dead lice or hatched nits that would be visible but would not constitute a problem.

**If something other than lice is the cause, treating for head lice will not cure the other problem.**

If an active infestation is verified, other possibilities are: 1) the product has not been used properly; 2) a person has become reinfested after the product was applied; or, 3) the head lice are resistant to the insecticide product. Reread the insecticide product directions very carefully to be sure it is being used properly. Check all family members for the presence of lice and treat all infested people at the same time.

If you continue to see head lice after two applications and do not feel you are eliminating them, switch to a product containing a different active ingredient. **Do not over apply these insecticide products.** Repeatedly applying a shampoo or lotion in the hope that it will eliminate head lice will not improve its effectiveness but will put the child or adult at greater risk because of increased exposure to insecticides. Don't use dubious methods, such as kerosene, pet shampoos, or other insecticides. These methods are not more effective, just more dangerous. Insecticide use should be combined with combing hair to remove head lice and eggs, as well as cleaning the clothes and bedding of any infested individuals.

Although it can be challenging to eliminate head lice, you must be patient and persistent when dealing with an infestation. Use caution regardless of the treatment method and always keep the individual's safety as a top priority.

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