

# FACT SHEET

# LICE

## Information for Health Professionals

## (Pediculosis or Head lice)

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### What are head lice?

Lice are wingless insects that are host-adapted to humans and do not live on household pets or in the general environment. An adult head louse can live about 30 days on a person's head but will die within one or two days if it falls off a person.

### How are they transmitted?

Lice do not fly or jump. Transmission is almost always through direct contact. Fomites and the environment are extremely infrequent sources. As a rule of thumb, over 95% are transmitted through person-to-person contact and less than 5% through indirect exposure. Lice are transmitted in community settings where close contact from play and living activities occur. While lice infestations are recognized in elementary schools, it is safe to assume that only a minority of lice infestations in school-age youngsters was actually acquired while at school.

### What are the risk factors for transmission?

Small children at play are the primary setting for transmission. Increasing risk would also be associated with crowding, such as two families living in one dwelling or in a child-care center and any activity that brings youngsters together in informal settings such as sleep-overs, scouts, youth sports activities, etc. While schools are of lesser importance, best friends or playmates present risk from close associations at recess and during transportation such as in school buses.

### What is the best approach to screening?

Screening requires a close visual examination of the individual's head for crawling lice and nits (eggs). A small hand lens may help but is not essential. Good lighting is desirable. Examine the hair and scalp for at least 15 minutes to be reasonably sure the child does not have head lice. Most individuals have fewer than 10 adult lice. The characteristic itching caused by lice may not develop for 30 days or longer after infestation. A flashlight or ultraviolet light may help in detecting lice or nits. Ideally parents should screen their own youngsters periodically, perhaps weekly, while they are in child-care or in the early grades at school.

### What is the best approach to treatment?

The natural pyrethrins contained in over-the-counter products such as Rid, A-200 Pyrinate, Pronto, and various store brands are perhaps the best class of insecticide because they are effective on lice and are minimally toxic to humans. Lindane is not recommended because of its toxic potential and demonstrated lice resistance. The Iowa Department of Public Health recommends a 14-day treatment process. For a brochure detailing treatment recommendations, please visit:

[www.idph.state.ia.us/hcci/common/pdf/headlice\\_brochure.pdf](http://www.idph.state.ia.us/hcci/common/pdf/headlice_brochure.pdf) .

### What causes treatment failure?

The following are several common reasons why treatment for head lice may fail:

- Misdiagnosis. The symptoms are not caused by an active head lice infestation.
- Applying the treatment to hair that has been washed with conditioning shampoo or rinsed with hair conditioner. Conditioners can act as a barrier that keeps the head lice medicine from adhering to the hair shafts; this can reduce the effectiveness of the treatment.
- Not following following the treatment instructions carefully. Some examples of this are not applying a second treatment if instructed to do so, or retreating too soon after the first treatment before all the nits are hatched and the newly hatched head lice can be killed, or retreating too late after new eggs have already been deposited.
- Resistance of the head lice to the treatment used. The head lice may have become resistant to the treatment. Many strains of lice have developed resistance to the permethrin and lindane insecticides. Also, all products have minimal ovicidal (nit killing) activity so nits remain viable, resulting in nymphal lice emerging after treatment, thus a second treatment 7-10 days later is recommended.

- Reinfestation. The person was treated successfully and the lice were eliminated, but then the person becomes infested again by lice spread from another infested person.

If the over-the-counter therapy continues to fail, the healthcare professional may wish to consider other prescription options (see the CDC website: [www.cdc.gov/lice/head/treatment.html](http://www.cdc.gov/lice/head/treatment.html) ) or “extra-label” use of oral ivermectin (Stromectol - Merck). Reference: “Drugs for Head Lice,” *The Medical Letter On Drugs and Therapeutics* 47: August 15/29, 2005.

**How effective are home remedies?**

Never use kerosene, gasoline, or other dangerous substances. There is no clear scientific evidence that use of mayonnaise, vinegar, various types of vegetable oils, Crisco, or Vaseline are effective forms of treatment.

**Is it necessary to remove all the nits?**

Removal of all nits after successful treatment with a pediculicide is not necessary to prevent further spread. Removal of nits after treatment with a pediculicide may be done for aesthetic reasons, or to reduce diagnostic confusion and the chance of unnecessary retreatment. Because pediculicides are not 100% ovicidal (i.e., do not kill all the egg stages), some experts recommend the manual removal of nits that are attached within 1 cm of the base of the hair shaft.

**How important is the environment in lice transmission?**

Laundering of linens and vacuuming of upholstered furniture is more than adequate. Environmental spraying should not be done. The pyrethrin sprays are not without risk and can aggravate the health problems of children with asthma.

**What can one do to prevent lice?**

The best defense is frequent screening of those at highest risk followed by diligent treatment, if necessary. Assume there are lice in the community at all times of the year.