Dear Parents,

Each year millions of school-aged children in the United States get head lice. Though head lice may be a nuisance, the American Academy of Pediatrics (AAP) states that they are not a health hazard or a sign of poor hygiene and, in contrast to body lice, are not responsible for the spread of any disease. As such, the AAP and health department policies state no healthy child should be excluded from or miss school because of head lice, and no-nit policies for return to school should be abandoned.[1]

Please note the following information from the Michigan Department of Education/Michigan Head Lice Manual regarding transmission and a quick reference to treatment if lice/nits are found on your child.

Remember **our biggest ally in control and prevention are our parents.** Performing regular head checks at home, whether or not cases have been reported, starting immediate treatment when head lice are detected, and informing the appropriate school officials as soon as possible are the best defense.

Thank you!

[1] Michigan Head Lice Manuai/MI Department of Community 1-lealth/Ml Department of Education Revised August 2013

Quick Guide for Managing Head Lice

Management and treatment of head lice includes:

1. Careful inspection and screening of the hair and scalp to identify lice and/or nits correctly.

2. Use of a pediculicidal (head lice) product if live lice or viable nits are found.

3. Cleaning of personal items and the environment.

4. Repeat treatment with the pediculicidal product following the label instructions. If the label does not provide a guide for a second treatment, repeat treatment nine days following the initial treatment.

1. Careful inspection of the hair and scalp to identify lice and/or nits correctly.

Lice are tiny insects (about the size of sesame seeds) ranging in color from red to brown, yellow, tan, gray, white, or black. They attach their eggs (nits) to the hair shaft near the scalp with a glue-like substance. The nits are small, about the size of a knot of thread, and can be white, tan, pale gray, or yellow in color. Nits can be hard to see, so it is important to take your time and separate the hair into thin sections. The nits are most commonly found at the nape of the neck and behind the ears, but can be anywhere, so check the entire head.

A person is infested with head lice if live lice or nits on the hair shaft closer than one quarter inch from the scalp are found.

All individuals living with an infected person, as well as those who have head-to-head contact with the person, should be screened for lice.

2. Use of a pediculicidal (head lice) product if live lice or viable nits are found.

When someone is infested with head lice, he or she should be treated with a medicated hair product that will kill the lice (a pediculicide). Pediculicides are not meant to be used for prevention.

There are many lice treatment products available, which can be found at area drug stores or grocery stores. Most non-prescription pediculicidal products contain permethrin 1% or pyrethrin (such as Nix or RID[11]). Permethrin 1% is recommended as the first choice of treatment. Once you have selected a product, it is very important that you follow the label directions on the product EXACTLY to treat those who are infested.

Treat only those people with live lice or nits less than one quarter inch from the scalp. The American Academy of Pediatrics recommends treating anyone who shares the same bed with those who are infested.

Prescription pediculicides are also available. For further information on pediculicidal products, contact your local public health department, healthcare provider, clinic, or pharmacy.

Before using the product, review all safety statements on the label. Do not use the product if any of the precautions apply to you or the person being treated. Consult with a healthcare provider for further instructions. Using a head lice treatment product will not prevent you from getting head lice.

---

11 Use of a brand name does not endorse the specific product. A similar product may work as well as those mention

Quick Guide for Managing Head Lice (continued)

3. Cleaning of personal items and the environment.

No special cleansers, sprays, or chemicals are needed for cleaning your home.

Soak hair care tools in hot water (130ºF) for at least 10 minutes. Heat may damage some plastic combs and brushes. Place these items in a sealed bag for two weeks.

To kill lice and nits, machine-wash all washable clothing and bed linens that have been used by the infested person(s) during the two days before treatment. Use the hot water cycle during the washing process. Dry laundry using high heat for 30 minutes.

Washing clothes to remove lice and nits is only necessary on the day of treatment and does not need to be repeated daily.

Another option is to place the item in a hot dryer for 30 minutes, if the recommended care label approves use of dryers.

Articles that cannot be machine washed, or placed in a hot dryer can be vacuumed, dry cleaned, or stored in a sealed plastic bag for two weeks.

Floors, carpets, upholstered furniture, pillows, and mattresses should be vacuumed to pick up any hairs that may have living lice or nits attached to them.

4. Repeat treatment with the pediculicidal product following the label instructions. If the label does not provide a guide for a second treatment, repeat treatment nine days following the initial treatment if live lice or nits within one quarter inch of the scalp are found.

The use of lice sprays for the house can be dangerous and is not recommended.

Cleaning of Personal Items and Environment

Head lice are spread most commonly by direct head-to-head (hair-to-hair) contact. However, much less frequently they are spread by sharing clothing or belongings. The risk of getting infested by a louse that has fallen onto a carpet or furniture is very small. Head lice survive less than 1-2 days if they fall off a person and cannot feed; nits cannot hatch and usually die within a week if they are not kept near body temperature.[9] Items that have been in contact with the head of the person with infestation in the 24-48 hours **before treatment** should be considered for cleaning.

Check everyone in the household at the same time

Check everyone in the household at the same time, prior to cleaning the environment. This includes grandparents, younger and older siblings, and parents. Statistics have suggested that 60 percent of people with head lice don't know they have them and have no symptoms. They may be unintentionally infecting others and continuing the cycle.

Launder any personal items that could be infested with head lice

Personal items to be laundered include clothing, bedding, towels, cloth toys, etc. Items should be washed for at least 10 minutes in hot water and/or dried on high heat for at least 30 minutes. For items that cannot be washed, seal in a plastic bag and store for 14 days at room temperature or 24 hours in below freezing temperatures.

Vacuum

Items that should be vacuumed include bare mattresses, carpets, floors, stuffed animals, coat collars, hats, couches, chairs, and car upholstery. There is no need to discard the vacuum bag after cleaning, except for aesthetic purposes. Head lice cannot survive without a blood meal.

Inspect hairbrushes, combs, hair ties, and barrettes

For washable accessories, wash and dry (on high heat) for at least 30 minutes. Soak combs, brushes and barrettes in water hotter than 130°F. If items cannot be exposed to high heat, soak them in Lysol® or rubbing alcohol for one hour.

Safety Precautions

DO NOT spray or "fog" a home with insecticides or pediculicides. They are not necessary to control head lice and may be harmful if used in a poorly ventilated area. The CDC, the AAP, and the Michigan Department of Community Health strongly discourage the use of these spray products for the control of head lice.

[9] Centers for Disease Control and Prevention, Parasites – Lice – Head Lice – Prevention and Control, www.cdc.gov (2013).

10 Steps to Keep Ahead of Head Lice

1) *Watch for signs of head lice, such as frequent head scratching, flaky or irritated scalp, scabs, or the presence of nits. Anyone can get lice, mainly from direct head-to-head contact or possibly by sharing hats, brushes, beds, pillows, towels, etc.*

2) *Check all household members and close contacts for lice and nits (lice eggs) at least once a week.*

3) *Be sure not to confuse nits with hair debris (i.e., dandruff, hair spray droplets, or hair casts). Nits are yellowish-white, oval-shaped, and are* ***attached*** *at an angle to the side of the hair shaft.*

4) *Consult a pharmacist, physician, or school nurse before applying pesticides or other lice treatments. If anyone to be treated is pregnant or nursing, has allergies, asthma, or has nits in the eyebrows or lashes, contact your physician. Never use a pesticide or lice treatment on or near the eyes.*

5) *Consider all of your treatment options. Remember, lice-killing products are pesticides and must be used with caution. If you choose alternative methods, they may not have been studied thoroughly enough to determine long-term outcomes. The most effective and safe alternative is manual removal by combing.*

6) *Remove all nits. Separate hair sections and remove nits with a lice comb, baby safe scissors, or your fingernails.*

7) *For lice treatment, follow package directions carefully. Use the products over the sink, not in the tub!*

8) *Wash bedding and all recently worn clothing in hot water and dry in high heat for at least 30 minutes. Combs and brushes should be soaked in hot water (not boiling) for 10 minutes.*

9) *Avoid lice sprays! Vacuuming is the safest and best way to remove lice or fallen hairs with attached nits from furniture, rugs, stuffed animals, and car seats.*

10) *Notify your child's school, camp, child-care provider, play partners, and neighborhood parents.* ***Check for lice on a regular basis.***

Head Lice Myths and Facts

Definitions	
Infestation = having multiple insects present and reproducing, in this case, on a human head	
Lice = more than one louse	
Louse = small insect that lives on the scalp (singular)	
Nits = eggs, dead or alive, of a louse	
Parasite = an organism that lives off another, i.e. lice surviving on the blood of humans	
Pediculosis = having an infestation of lice	
Myth	**Fact**
It is easy to get lice.	Lice are spread by head-to-head contact and are much harder to get than a cold, the flu, ear infections, pink eye, strep throat or impetigo.
Avoiding lice is important, as they are dirty and spread disease.	Lice do not spread any known disease, nor are they impacted by hygiene.
Head lice are very sturdy creatures and can survive many days off a human head in furniture, linens, or clothing.	Head lice need a blood meal every few hours in addition to the warmth and humidity of the human scalp to survive. When off the human body, in optimal conditions, they cannot survive for more than 24 to 36 hours.
Nits (lice eggs) can fall off a person's head, hatch, and cause another person to get lice.	Nits are glued to the hair shaft by a cement-like substance and are very hard to remove. When a nymph is hatched, it must quickly have the warmth and food source of a head to survive.
Cutting a person's hair will prevent head lice infestations.	The length of a person's hair does not prevent head lice infestations.
You can get head lice from sitting at a desk next to someone who is infested with head lice.	Head lice are spread through direct head-to-head contact. The lice do not hop, jump, or fly, so sitting near someone with head lice does not increase the risk of getting the lice.
Lice are commonly spread throughout schools.	Transmissions in schools are rare. It is more common to get head lice from family members, overnight guests, and playmates who spend a lot of time together.
Lice are commonly spread through hats, helmets, or headphones.	Although the spreading of lice through hats, helmets, or headphones is possible, **it is rare**. It is more common for transmission to occur from pillows, hairbrushes, or bedding. Transmission primarily occurs through head-to-head contact.

Myth	Fact
Schools and child-care facilities should screen all children for head lice, so everyone can be treated and the spread of head lice will be prevented.	Having regularly scheduled mass screenings does not reduce the incidence of head lice.
"No-nit" policies reduce the risk of head lice in schools and child-care facilities.	Research shows "no-nit" policies do not decrease the number of cases of head lice. They do increase the risk of incorrect diagnosis of head lice, the number of days children are out of school, and negative social stigma associated with head lice. They also may hinder academic performance.
You can get lice from your dog or other pets.	Head lice are specific to humans. You can get human lice only from other humans. You cannot give your pets lice.

"Lice are spread by head-to-head contact and are much harder to get than a cold, the flu, ear infections, pink eye, strep throat or impetigo."

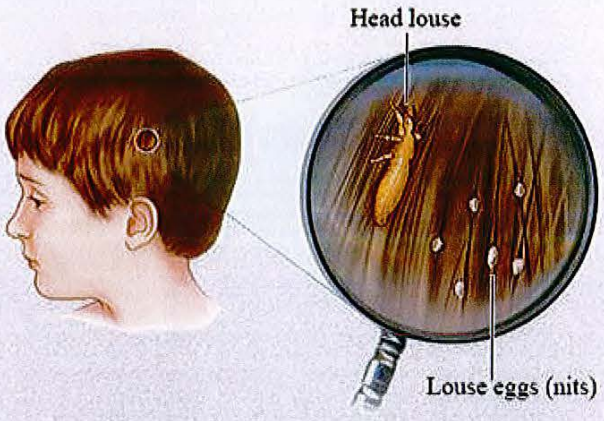
Image ©naturalchoiceliceremoval.com

What Families Can Do About Lice

Focus on solutions, not on blame. Remember: head lice can be picked up at sleepovers, camp, home, and other places where children share close quarters and come into close contact with someone who already has lice. Be sure to check your child's hair regularly, and especially before and after he/she attends a sleepover or other similar activity.

Stay calm. Anxiety and guilt can be common reactions to the news that your child has head lice. Be assured that personal hygiene or cleanliness has nothing to do with a child getting lice. The fact is, while lice may be upsetting and a nuisance, they do not spread disease.

Do not self-treat without consulting an expert. If you think you spot nits but do not see any moving, living lice, consult your child's school nurse or your pediatrician. Do not treat your child with medicated products without confirming that he/she does have head lice.



Head lice and their eggs (nits) can be seen on hair, the nape of the neck, and behind the ears. They can vary in color from white to brown to dark gray. The eggs are tiny round or oval shapes that are tightly attached to the hair near the scalp and do not slide up and down on the hair. The adult louse is about the size of a sesame seed.
Image: HealthWise, Inc.

Head lice are a common community problem.
Here are some Fast Facts:

- An estimated 6-12 million infestations occur each year among U.S. children 3 to 11 years of age
- Head lice often infest people with good hygiene
- Head lice move by crawling; they cannot jump or fly
- Head lice do not transmit disease, but can spread easily through close head-to-head contact
- It is important to talk to your school nurse, pediatrician, or family physician to learn about treatment options

Size comparison of head lice life stages.
Image: Centers for Disease Control and Prevention

Head lice: fast facts

"Lice are spread by head-to-head contact and are much harder to get than a cold, the flu, ear infections, pink eye, strep throat or impetigo."

Image ©naturalchoicelliceremoval.com

Transmission of Head Lice

Head lice are transmitted by:

- Person-to-person transmission (direct contact) – The majority of transmissions of head lice occur by direct head-to-head contact with an infested person. Most of the time this is a close friend or relative.

- Vector transmission (indirect contact) – This type of transmission may occur through the sharing of bedding, or by using personal items such as combs, brushes, scarves, hair ornaments, or hats of an infested person. Although transmission via indirect contact is possible, it is rare.

Common ways of transmission through head-to-head contact include:

- Slumber parties
- Shared beds
- Sport activities
- Reading circles

Without head-to-head contact, these ways of transmission are highly unlikely:

- School buses
- Hats, helmets, or headphones
- Gym mats
- Sitting at a desk

Anyone can get head lice, but some people are at greater risk than others. Those people include:

- Children between the ages of 3 and 11 years
- Girls are more likely to get head lice than boys, possibly because of their play styles and sharing of personal items.[5]
- People with long or short hair can contract head lice. Although all races can get head lice, studies show that children of African-American descent are less likely to become infested.[5]

Quick Facts

1. Head lice are adept at moving from hair-to-hair because of their specialized "claws." They **cannot jump, fly, or crawl great distances over hard surfaces.**
2. Head lice **cannot survive long away from a human head.** A nymph or adult louse that falls from its host will perish within a couple days under the most optimal conditions. Louse eggs do not hatch at normal room temperatures; they require the higher temperatures associated with a human body.

[5] Centers for Disease Control and Prevention, Head Lice Epidemiology: http://www.cdc.gov/parasites/lice/head/epi.html.

Management and Treatment

Head lice infestations have been occurring for thousands of years, and although numerous efforts have been tried to prevent them from occurring, nothing has proven to be 100 percent successful. However, when they do occur, head lice infestations can be managed. It is important not to panic and/or to cause undue stress for those infested and others around them.

If head lice are suspected, it is recommended the individual be inspected by a school nurse, a public health nurse, or a medical provider.[6] It is recognized that not all families, schools, or child-care facilities have access to a school nurse, a public health nurse, or medical provider. In those situations, it is recommended that schools and child-care facilities designate an individual or individuals who will be trained to inspect and assess for head lice on a private and confidential basis.

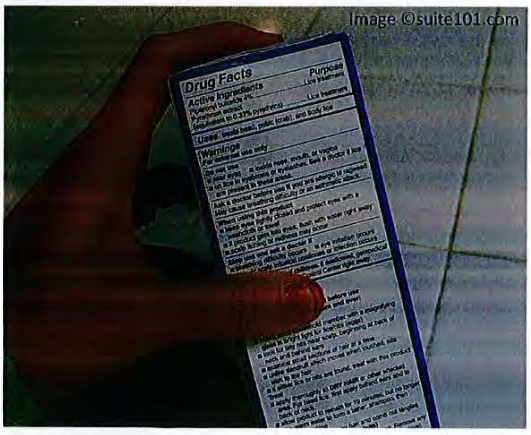
Management activities include treating close contacts with head lice, and the elimination of lice and nits from the living environment and personal items.

Treatment should be considered only if lice or viable eggs are observed. Once a head lice infestation is determined, there are several treatment options to choose from. Methods include:

1. Treatment with pediculicides (substances used to treat lice)
2. Manual removal
3. Alternative or natural methods

Treatment with Pediculicides

Pediculicides are substances or agents used to kill head lice. There are many medicated products available for treatment of head lice, and they normally come in the form of shampoos. Most are available over the counter, but some are by prescription only and may be reimbursable through insurance. **All products must be used strictly in accordance with label directions to ensure effectiveness and prevent adverse reactions from overuse or misuse.** When used properly, their effectiveness has been reported to be 80-95 percent. Repeat treatment with the pediculicide in 7 to 10 days may be needed if indicated on the product label. (See Treatment Failure section, page 11)



[6] Frankowski BL, Bocchini JA, (2010). Council on School Health and Committee on Infectious Diseases, "Head Lice," Pediatrics, 126 (2): 392-403.

Important Things to Know About Pediculicides:

- **Never treat unless there is definite evidence of head lice.**

  Pediculicides are to be used for the treatment of head lice only when there are active lice or viable nits present in the hair, or when individuals share the same bed with someone who has live lice or viable nits (AAP, 2010). They should not be used as routine shampoo or conditioner.

- **These products <u>do not prevent</u> someone from getting head lice.**
- No product is 100 percent effective at getting rid of lice and their eggs.
  - Head lice infestations will be resolved more quickly by manually removing or combing nits within one quarter inch of the scalp after treatment. This will prevent eggs not killed during treatment from hatching. Nits further than one quarter inch from the scalp have likely hatched or are not viable.
  - A second treatment may be required as recommended on the product label.
- Non-prescription pediculicidal products generally are effective and safe if used according to the manufacturers' directions. **To ensure proper treatment, follow all recommendations and directions on the label.** All safety precautions listed on the product label should be observed.
- **Pediculicidal products are for external use only, and should only be applied to the scalp. These products are harmful if swallowed or inhaled. If accidental ingestion does occur, contact poison control at (800) 222-1222.**

Treatment Failure

None of the current pediculicides are 100 percent ovicidal (effective at killing nits), and resistance has been reported with pyrethrins and permethrin[7] products. This is not unusual, as insects can develop resistance to products over time. Resistance will vary from one community to another.

When faced with a persistent case of head lice, consider several possible explanations, including:

- Misdiagnosis (no active infestation or misidentification)
- Noncompliance (not following treatment protocol or directions per manufacturer's label)
- Re-infestation (lice re-acquired after treatment)
- Failure to treat all affected family members or close contacts at the same time
- Resistance of lice to the pediculicide

Many cases of suspected resistance represent either misdiagnosis of old nits as active cases or a re-infestation. Individuals who are chronically infested and have been treated multiple times with pyrethroid shampoos are more likely to have resistant cases.

Although Permethrin 5% lotion has been tried for suspected resistant cases, it is unlikely that an increased concentration or prolonged application time would be effective in cases of true resistance to Permethrin 1%. Studies have shown that resistance to permethrin is not dose-dependent.[7]

Nit Removal after Treatment with a Pediculicide

Because none of the pediculicides are 100 percent ovicidal, manual removal of nits after treatment may be done to reduce worries of another lice infestation or for cosmetic reasons.

---

[7] Durand *et al.* (2012). Insecticide resistance in head lice: clinical, parasitological and genetic aspects. Clin Microbiol Infect., (4):338-344.

Manual Removal of Lice and Nits

Manually removing lice and nits may be effective at quickly resolving a head lice infestation. Pediculicide treatment may not be 100 percent ovicidal. For this reason, removing viable eggs may prevent the need for a second treatment. Whether using a pediculicide or manual removal as a stand-alone treatment, the more lice and nits that are combed from the hair, the faster the infestation will be resolved.

To manually remove lice after pediculicide treatment or as a stand-alone treatment:

1. Work in an area with good visibility and light, such as from a lamp or natural sunlight through a window.
2. Make sure a standard comb moves through the hair without difficulty before attempting to use a fine-toothed lice comb. Combing may be easier if the person's hair is slightly wet.
3. Part the hair into sections and hold sections in place with rubber bands or hair clips.
4. Sit behind the person and use a bright light (and magnification if available) to inspect and comb through the hair, one small section at a time. Remove nits using the comb, fingernails, or by cutting the strands of hair.
5. Clean the louse comb frequently to remove any caught lice or eggs using soapy water or paper towel. It may require several hours each night for several nights to successfully remove all nits and lice. An entertaining video may help keep children occupied during this exercise.
6. Combing may be repeated daily until no lice are seen. Continue monitoring for two to three weeks.

Many types of fine-toothed combs may be included within packages of pediculicides, or they may be purchased from most drug stores or internet retailers. The effectiveness depends on their composition (metal or plastic) and construction (length and spacing) of the comb teeth, the texture of the hair to be combed, combing technique, and the time and care expended in the effort. Electronic combs may be useful for detection (if vision is limited), since they emit a sound when a live louse is present.