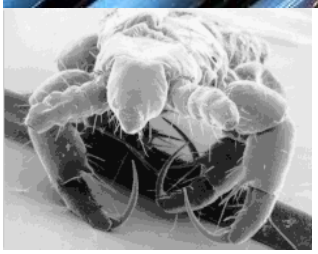
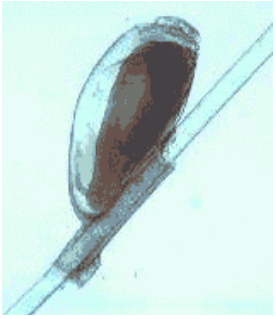
Georgia Department of Public Health

HEAD LICE MANUAL





revised November 2017

Georgia Head Lice Manual

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INTRODUCTION

Several species of insects and related pests feed on people. These pests are called ectoparasites when they feed externally, taking blood from their host. In addition to the irritation caused by their bites, some ectoparasites such as fleas, ticks, and lice may also transmit serious disease-producing organisms.

Lice are parasites of warm-blooded animals, including man. The three species of lice that parasitize humans are the head louse, body louse, and pubic (crab) louse. All three suck blood and cause considerable itching when they feed or crawl on the body. The body louse is also important in the transmission of human diseases, most notably epidemic typhus. Throughout time millions of persons have died from louse-borne typhus, although in the United States the disease has not been present for many years. Louse infestation from any of the three kinds of lice can also lead to pediculosis, which is scarred, hardened, and pigmented skin resulting from continuous scratching of louse bites. Lice associated with humans spend virtually their entire life on the host.

Head lice are the type of louse most often encountered. They almost always occur on the head. Head lice (*Pediculus humanus capitis*) are small (1/12 inch or about the size of a sesame seed), and white or grayish. Lice DO NOT jump. However, they move quickly and avoid light, sometimes making them difficult to see. Diagnosis of head lice infestations is most often made by the presence of the nits rather than lice. Nits are tiny, yellowish-white oval eggs attached directly to the hairs of the scalp. They are often mistaken for dandruff or residues of shampoo, but will not wash off or blow away.

Head lice are not known to transmit any human pathogens. Skin irritation at the feeding site, secondary bacterial infections from scratching, and the psychological

"trauma" of the infestations are the chief human health concerns associated with head lice.

Body lice resemble head lice, but prefer to live in clothing except when they crawl on to the body to feed. Outbreaks of body lice are usually associated with large numbers of people living in close quarters under poor sanitation. Transfer of body lice can occur from shared bedding or clothing.

Pubic (crab) lice usually infest the pubic area, but also may be found on other hairy areas of the body. Transfer of crab lice between individuals usually requires intimate personal contact because the lice cannot survive longer than 24 hours off the host.

The purpose of this manual is to provide schools, local health departments, healthcare facilities, and other group settings a comprehensive guide to identify, treat, manage, and prevent head lice infestations. This manual was designed to serve as a universal guide providing technical information about head lice as well as a quick reference.

Medical Impact

According to the Centers for Disease Control and Prevention (CDC), anyone who comes in close contact with someone who already has head lice is at greatest risk for infestation. Head lice can infest people of all ages, but preschool and elementary-age children (between ages 3 and 11) and their families are most often infested. Girls get head lice more often than boys and women more often than men. In the United States, African-Americans are less likely to get head lice, although this will depend on hair type.

Every year, an estimated 6 to 12 million US children become infested with head lice. Many

families with young children have had at least one encounter with the head louse. Head lice are equal opportunity parasites; they do not respect socio-economic class distinctions and their presence does not connote a lack of hygiene or sanitation by their host. Children are prone to infestations because of their habit of playing in close contact, sharing hats, headphones, combs and brushes, sleeping bags, stuffed animals, and clothing. Contact is the key, because LICE DO NOT JUMP. Head lice infestations can be so rampant among preschool and school-aged children that often schools must work in conjunction with many families to control the situation. An individual family may be able to control head lice at home, but the child can be reinfested when he/she comes in contact with an untreated, infested child.

Unfortunately, children may be ostracized and/or ridiculed when it is found that they are infested with head lice. Parents may be angered or frightened when a head lice case is found in their child's school. Anxiety over head lice can also lead to inappropriate treatments that pose real and significant health hazards to the child and his or her household. With increased education efforts it is hoped that the stigma of head lice can be eliminated and the public's unnecessary fears allayed.

Biology

General Introduction

Human head lice (Figure 1) are minute, wingless insects that are obligate ectoparasites (parasites living outside the body of the host). They are small in size, about 1 - 5 mm or 1/32 to 3/16 of an inch in length, and either light gray or dark colored in appearance, the latter due to ingested blood (Figure 2). They are flattened dorso-ventrally or top to bottom (Figure 3) and have six jointed legs with specially adapted claws for holding onto hair. They can move about readily from hair to hair, but are most adept at clinging to prevent dislodgement. They survive by piercing the skin to feed on blood and, unless the infestation is heavy, are almost exclusively associated with hair on the neck and scalp.

Head lice are members of a group of insects (Order Pthiraptera) that are ectoparasites of birds or mammals. Head lice belong to a particular subgroup of these insects known as the sucking lice (Suborder Anoplura) because of their feeding mode (Figure 2). They are closely related to body lice, commonly known as "cooties", and are in the family Pediculidae. Pediculidae have been associated with humans since antiquity. Most experts consider the human head louse and human body louse to be variants of the same species (*Pediculus humanus*) that segregate by habitat on the host. Lice are host-specific, so lice found on humans will not survive on other animal hosts and vice versa.

Feeding

The head louse feeds by using rasping teeth to penetrate scalp skin at the base of a hair or behind the ears. The louse then inserts its retractable proboscis into a blood vessel, injects anticoagulants, and feeds, much like a mosquito. This feeding activity can be a source of irritation and leads to the itching/scratching characteristic of the infestation. The louse can only subsist on human blood and appears to require internal symbiotic bacteria to compensate for nutritional deficiencies in the blood meal. A louse can ingest several blood meals per day, interrupted by resting/digestion periods between feedings.

Life Cycle

Eggs are attached to hairs (Figure 4) individually by the female louse and are commonly known as "**nits.**" A nit adheres to hairs tenaciously due to adhesive substances secreted by the female. This nit glue is very resistant to mechanical and chemical dislodgment.

Eggs hatch (Figure 5) in 8 - 11 days under normal conditions into a **nymphal** stage (Figure 6) that is very much like a miniature adult. The nymph will crawl and seek a place to feed immediately. There are 3 nymphal stages punctuated by molting (the shedding of exoskeleton or "skin"). The nymphal stages last about 7 – 10 days.

The final molt leads to an **adult** stage (Figure 7) where body growth stops and sexual maturation occurs. There are separate sexes in head lice and females must mate and be fertilized in order to produce viable eggs. This needs only to occur once. A mated female can continue to produce eggs for the duration of her life, which is about 30 days. She can lay 3 – 4 eggs daily during this period.

Transmission

Head lice are not long-distance travelers, and they are poorly adapted to life away from the host. Although adept at moving from hair to hair, they cannot jump nor can they crawl great distances (from the floor to someone's head, for example) to establish an infestation. Head lice move from person to person primarily by direct hair-to-hair contact, and less frequently through shared combs, brushes, hats, etc. Head lice may also be transmitted through shared bedding. Transmission usually involves the active stages (nymph or adult) of the louse and requires the transfer of at least one viable, fertilized female or one of each sex for infestation to occur.

Active stages cannot survive for more than a few days away from the host. A nymphal or adult louse that falls from the host will perish within a few days under the most optimal conditions (low temperature and high humidity). **Under normal conditions, the survival time is most likely measured in hours**. This is because the louse is very susceptible to dehydration and will rapidly starve if removed from a blood source. Eggs can survive longer off-host periods (a week or more), but the hatched nymph must come in contact with human head hair almost immediately or it will perish. Also, louse eggs do not hatch at normal room temperatures; they require the higher temperatures associated with mammalian bodies. Lice are very host-specific, and will not survive or proliferate on pets; you cannot get lice from your dog or cat. **All of this suggests that efforts to control head lice should be concentrated on removing/killing lice on the host**.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

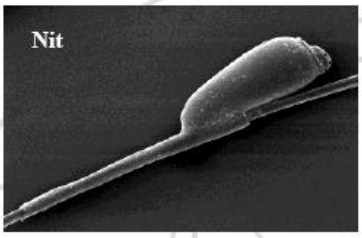
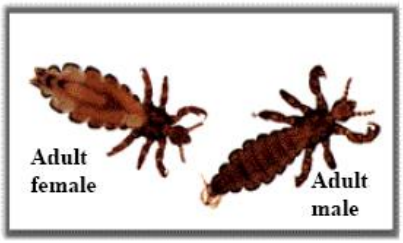


Figure 5.

Figure 6.

Figure 7.

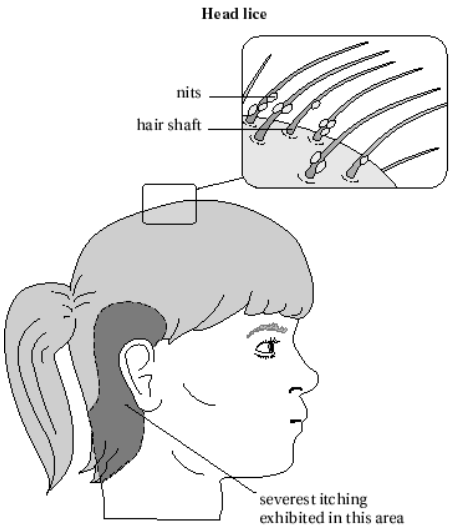


Identification and Diagnosis of Head Lice

It is important to preserve the dignity and privacy of students when screening for head lice in school.

Some helpful supplies for use when identifying head lice:

- Disposable gloves
- Bright light or sunlight to closely inspect the hair
- Magnifying glass
- Comb or brush (should be disinfected or disposed of after being used for this purpose)



Actual size of the three lice forms compared to a penny *(Photo credit: CDC)*

Head lice are best identified by inspecting the hair and scalp for live lice or nits. An experienced examiner may be needed to confirm a diagnosis. The standard for identifying head lice is finding a live louse on the head. Unless the infestation is heavy, lice and nits are most often found at the nape of the neck, and above and behind the ears.

Procedure for inspection:

1. Carefully part the hair using the applicator stick or tongue depressor and examine the hair and scalp for nits or crawling lice.
2. Begin by inspecting the nape of the neck and the area behind the ears.
3. If nothing is seen in these areas, continue to inspect the rest of the head to ensure the absence of lice and nits.

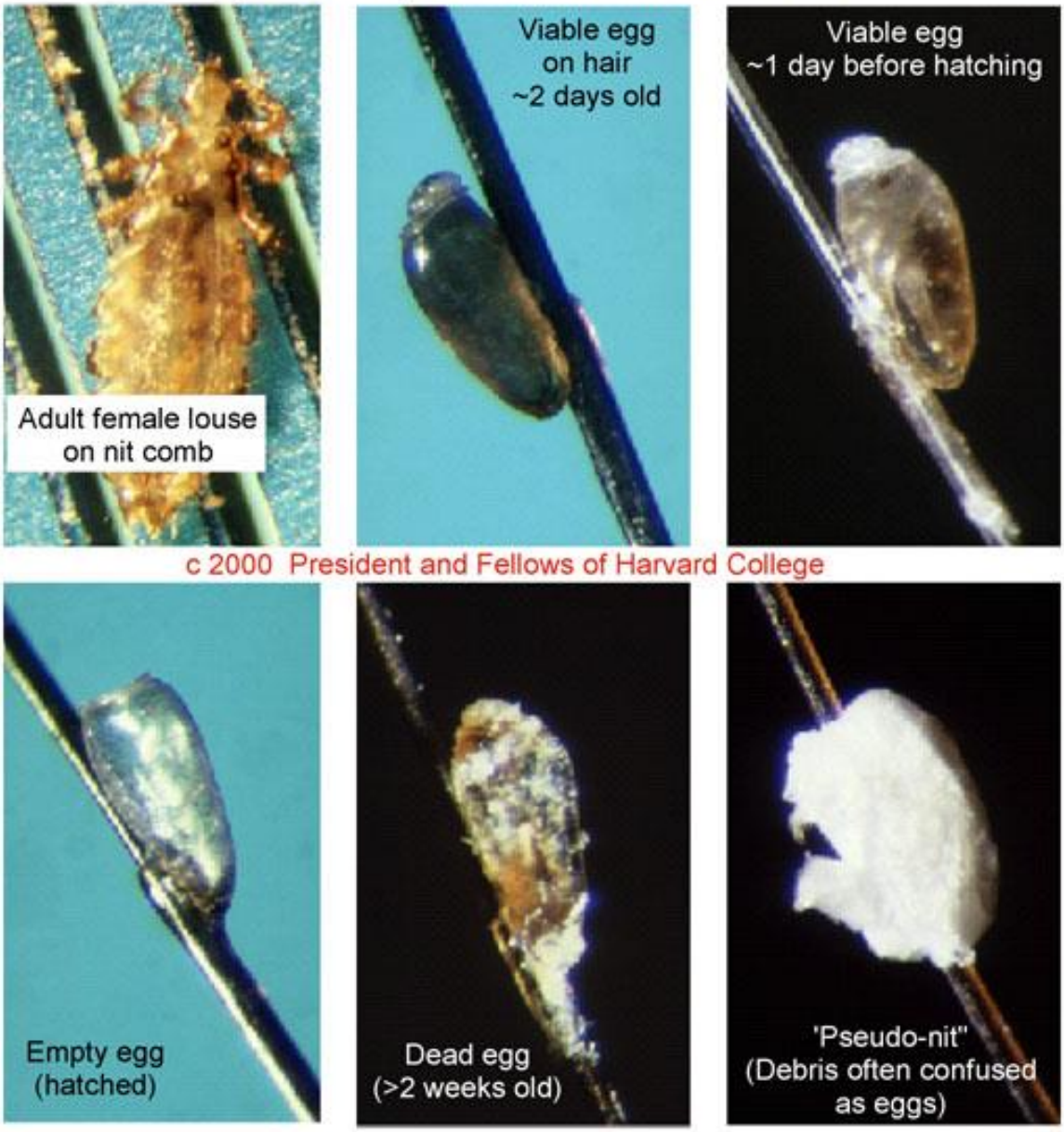
Adults and nymphs are difficult to see because they are small and often appear to be nearly the same color as the host's hair. Most recently laid nits will be opaque, white, shiny, and located on a hair shaft within one-quarter inch of the scalp. They generally develop a dark eyespot within 48 hours of being laid. The cap or operculum (a flap that serves as a cover of the nit case) will be intact, and an embryo may be observed under a microscope. Dandruff, hair casts, globules of hair spray, and scalp conditions such as psoriasis or eczema may easily be mistaken for nits, although hair debris is easily detached or loosened from the hair shaft. Nits are firmly attached to the hair and are not easily removed. Empty nit cases are more visible and are dull yellow in color. Nits are usually found one-quarter inch or more from the scalp due to hair growth following the initial attachment. By the time the hair has grown sufficiently for the egg case to be more than one-half inch from the scalp, the egg has either hatched or is nonviable.

Questions about identifying lice or nits should be referred to a health care professional or entomologist. Live lice may be submitted for identification in a clean/dry container or on a piece of transparent tape if there are questions about the identification of lice or nits. Pieces of hair with possible nits attached may be snipped and submitted for identification in the same manner. Contact the Georgia Public Health Laboratory (P: 404-327-7900, F: 404-327-7919) for further instructions on specimen submission. The Parasitology submission form can be found in the Laboratory Services Manual at http://dph.georgia.gov/lab.

Nits or lice in the eyelashes or eyebrows indicate possible infestation with other species of lice (Figure 8). Specimens should be submitted to a laboratory for full

identification and the case referred to a private physician or local health department, as a different form of treatment may be required.

Images to assist in the identification of head lice and their eggs.
http://www.hsph.harvard.edu/headlice.html



c 2000 President and Fellows of Harvard College

Examiners should be careful to prevent transmission to themselves or to others being examined. Disposable gloves should be worn. Both the gloves and the wooded applicator sticks used to separate the hair should be disposed of after each examination.

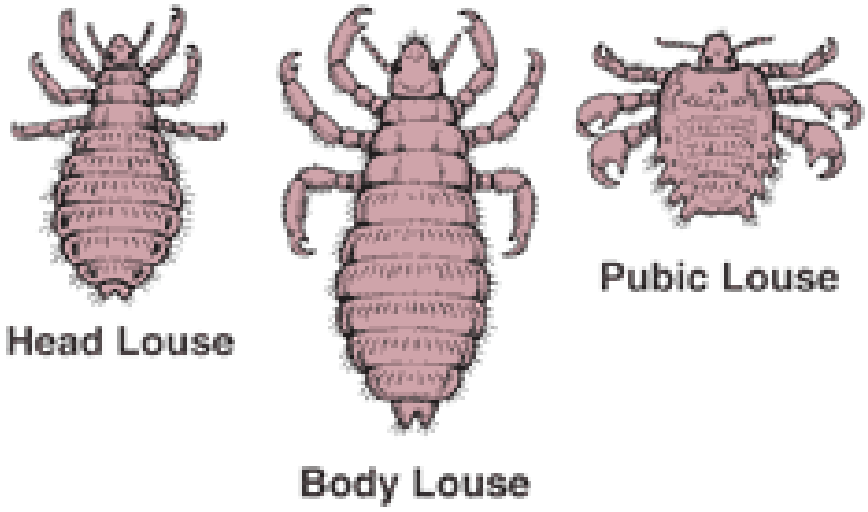


FIGURE 8: A Comparison of Head, Body, and Crab/Pubic Lice

Treatment

Treatment for head lice is recommended for persons diagnosed with an active infestation. All household members and other close contacts should be checked; those persons with evidence of an active infestation should be treated. Some experts believe prophylactic treatment is prudent for persons who share the same bed with actively-infested individuals. All infested persons (household members and close contacts) and their bedmates should be treated at the same time.

Once a confirmed diagnosis of head lice infestation is made there are several treatment options from which to choose. Methods include mechanical removal, treatment with pediculicides, and topical treatment with alternative products.

Retreatment of head lice usually is recommended because no approved pediculicide is completely ovicidal. To be most effective, retreatment should occur after all eggs have hatched but before before new eggs are produced. The retreatment schedule can vary depending on whether the pediculicide used is ovicidal (whether it can kill lice eggs).

When treating head lice, supplemental measures can be combined with recommended medicine (pharmacologic treatment); however, such additional (non-pharmacologic) measures generally are not required to eliminate a head lice infestation. For example, hats, scarves, pillow cases, bedding, clothing, and towels worn or used by the infested person in the 2-day period just before treatment is started can be machine washed and dried using the hot water and hot air cycles because lice and eggs are killed by exposure for 5 minutes to temperatures greater than 53.5°C (128.3°F). Items that cannot be laundered may be dry-cleaned or sealed in a plastic bag for two weeks. Items such as hats, grooming aids, and towels that come in contact with the hair of an infested person should not be shared. Vacuuming furniture and floors can remove an infested person's hairs that might have viable nits attached.

Mechanical Removal

Mechanically removing lice and nits, using lice or nit combs, can be effective but time-consuming. A specialized nit comb is an important tool for nit-picking, as a regular hair comb may not remove head lice and nits.

The overall effectiveness of any comb depends on its 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. A variety of nit combs are packaged with head-lice products, and others are sold separately (available at some pharmacies). However, many of these are ineffective. Plastic combs are generally not useful because they are so flexible that the teeth separate, and nits and head lice are bypassed as the comb is dragged through the hair. With a short-toothed comb, it is difficult to completely comb through most types of hair. The

best nit combs have closely spaced, metal teeth that are about 1.5 inches long (i.e., Acu-Med® lice comb, Hair Clean® 1-2-3 nit comb, LiceMeister® nit comb). Electronic combs may be useful for detection (if vision is limited), since they emit a sound when a live louse is present.

Examples of Head Lice Combs

The parent/guardian should first make sure a standard comb moves through the hair without difficulty before attempting to use a fine-tooth lice comb. Combing may be easier if the person's hair is wet or has conditioner on it. Clean the louse comb frequently to remove any caught lice or eggs. It may require several hours each night for several nights to successfully treat the problem. An entertaining video may help keep the child occupied during this exercise. Sit behind the child and use a bright light (and magnification if available) to inspect and comb through the hair, one small section at a time. It may also be necessary to actually pick nits from the hair, especially if they are not numerous. Nits can be removed using the comb, fingernails, or by cutting the strands of hair. Combing should be repeated daily until no lice are seen and then continued for three weeks. Studies have shown that this approach alone, when carried out meticulously by parents, eliminated head lice infestations in 38% of children.

<u>Pediculicides</u>

There are many medicated products (pediculicides) available for treatment of head lice. 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 in eliminating head lice infestations has been reported to be 80% to 95%. However, there are reports of localized resistance to all of these products. Remember, these products are not preventive and should only be used if lice are present.

Over-the-Counter Methods

- **Pyrethrins** combined with piperonyl butoxide;
  Brand name products: A-200*, Pronto*, R&C*, Rid*, Triple X*.

Pyrethrins are naturally occurring pyrethroid extracts from the chrysanthemum flower. Pyrethrins are safe and effective when used as directed. Pyrethrins can only kill live lice, not unhatched eggs (nits). A second treatment is recommended on day 9 to kill any newly hatched lice before they can produce new eggs. Pyrethrins generally should not be used by persons who are allergic to chrysanthemums or ragweed. Pyrethrin is approved for use on children 2 years of age and older.

- **Permethrin lotion 1%**;
  Brand name product: Nix*.

Permethrin is a synthetic pyrethroid similar to naturally occurring pyrethrins. Permethrin lotion 1% is approved by the FDA for the treatment of head lice. Permethrin is safe and effective when used as directed. Permethrin kills live lice but not unhatched eggs. Permethrin may continue to kill newly hatched lice for several days after treatment. A second treatment often is necessary on day 9 to kill any newly hatched lice before they can produce new eggs. Permethrin is approved for use on children 2 months of age and older.

Prescription Methods

- **Malathion lotion 0.5%**;
  Brand name product: Ovide*

Malathion is an organophosphate. Malathion lotion 0.5% is approved by the FDA for the treatment of head lice. The formulation of Malathion approved in the United States for the treatment of head lice is a lotion that is safe and effective when used as directed. Malathion is pediculicidal (kills live lice) and partially ovicidal (kills some lice eggs). A second treatment is recommended if live lice still are present 7-9 days after treatment. Malathion is intended for use on persons 6 years of age and older. Malathion can be irritating to the skin and scalp; contact with the eyes should be avoided. Malathion lotion is flammable; do not smoke or use electrical heat sources, including hair dryers, curlers, and curling or flat irons, when applying malathion lotion and while the hair is wet.

For more information on Malathion go to http://www.cdc.gov/parasites/lice/head/gen_info/faqs_malathion.html.

- **Benzyl alcohol lotion (5%)**;
  Brand name product: Ulesfia lotion*

Benzyl alcohol is an aromatic alcohol. Benzyl alcohol lotion 5% is a white topical lotion approved by the FDA for the treatment of head lice; it is considered safe and effective when used as directed. Benzyl alcohol kills live lice (it is pediculicidal) but does not kill unhatched lice eggs (it is not ovicidal). A second treatment with benzyl alcohol lotion is necessary on day 9 after the first treatment (or as recommended by the manufacturer) to kill any newly hatched lice before they can produce new eggs. Benzyl alcohol lotion is intended for use on persons who are 6 months of age and older. Benzyl alcohol can be irritating to the skin and eyes; contact with the eyes should be avoided.

- **Lindane shampoo 1%**

Lindane is an organochloride. The American Academy of Pediatrics (AAP) no longer recommends its use as a pediculocide. Although lindane shampoo 1% is approved by the FDA for the treatment of head lice, it is not recommended as a first-line therapy. Overuse, misuse, or accidentally swallowing lindane can be toxic to the brain and other parts of the nervous system; its use should be restricted to patients for whom prior treatments have failed or who cannot tolerate other medications that pose less risk. Lindane should not be used to treat premature infants, persons with HIV, a seizure disorder, women who are pregnant or breast-feeding, persons who have very irritated skin or sores where the lindane will be applied, infants, children, the elderly, and persons who weigh less than 110 pounds.

Topical Reactions

Itching or mild burning of the scalp caused by inflammation of the skin in response to topical therapeutic agents can persist for many days after lice are killed, and are not a reason for retreatment. Topical corticosteroids (i.e., hydrocortisone creams) and oral antihistamines (i.e., Benadryl®) may be beneficial for relief of these symptoms. Please consult with a physician or pharmacist before starting any topical therapies.

Pediculicide Resistance

Recent studies indicate that infestations of head lice resistant to current OTC permethrin-based regimens are on the rise. In a 2014 study, the frequency of the genetic mutation thought to be responsible for permethrin resistance in head lice was found to be over 90% in the US.

None of the current pediculicides are 100% ovicidal, and resistance has been reported with lindane, pyrethrins, and permethrin. 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, one must consider several possible explanations including:

- Misdiagnosis (no active infestation or misidentification)
- Noncompliance (not following treatment protocol)
- Reinfestation (lice re-acquired after treatment)
- Resistance of lice to the pediculicide.

Many cases of suspected resistance represent either misdiagnosis of old nits as active cases or a reinfestation. However, 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. Where resistance is suspected, treatment with a different class of pediculicide or non-chemical treatment must be considered.

MEDICAL NEWS | PHYSICIAN'S FIRST WATCH
April 27, 2015
AAP Issues Updated Guidance on Managing Head Lice
By Amy Orciari Herman

Edited by André Sofair, MD, MPH

The American Academy of Pediatrics has issued an updated clinical report on the management of head lice.

Among the key take-aways:

Pediatricians may educate schools that children should not be allowed to stay home because of lice; the odds of transmission in classrooms are low.

Either 1% permethrin or pyrethrins are reasonable first-line treatments for active infestations, unless resistance in the community has been established. These over-the-counter products should be applied at least twice, ideally 9 days apart.

In areas with proven resistance, parents may consider manual methods such as wet-combing or using petroleum jelly to suffocate the lice.

When permethrin or pyrethrins do not effectively treat a documented infestation, benzyl alcohol 5% may be used for children older than 6 months, and malathion 0.5% may be used for those 2 years or older.

The newer prescription agents, spinosad and topical ivermectin, may be useful in hard-to-treat cases, but they tend to cost more than other methods.

LINK(S):

Pediatrics article (Free abstract) - http://pediatrics.aappublications.org/content/early/2015/04/21/peds.2015-0746

Pediatrics article (Full Text): http://pediatrics.aappublications.org/content/126/2/392.full.pdf+html?sid=8c57caac-7545-4943-a559-8818c6fcf209

Background: NEJM Journal Watch Dermatology coverage of single-dose ivermectin for lice (Free) - http://www.jwatch.org/jd201210310000001/2012/10/31/topical-ivermectin-lotion-treatment-head-lice?query=pfw

Nit Removal

Because none of the pediculicides are 100% ovicidal, manual removal of nits after treatment with any product is recommended. A fine-toothed nit comb should be used to loosen and remove nits to help fully eradicate an infestation.

Alternative Methods

Several products are marketed as alternative methods of treatment. A number of shampoos and rinses contain herbs, oils, or enzymes believed to aid in lice removal.

- **Suffocants (i.e., petroleum jelly, mayonnaise, or oil-based products)**

Suffocants can obstruct the respiratory spiracles of active lice, and potentially block the holes in the operculum of the eggs thereby suffocating the louse. Apply 30g to 40g of the suffocant to the hair and massage it in. Cover with a shower cap, and leave on for at least 8 hours. The suffocant can then be used as a lubricant to aid in nit removal by combing. Diligent shampooing is usually necessary for at least the next 7 to 10 days to remove the residue. NOTE: This method does not always work well and can be very messy. Take special care with children "tasting" the mayonnaise, as this may cause illness since the mayonnaise will have been sitting at room temperature.

- **Enzymes**

Treatment products containing enzymes claim to dissolve or soften the glue that attaches the nit to the hair shaft, thereby providing easier removal of lice and nits when combing. "Natural" products are not required to meet FDA efficacy and safety standards. These products do not have licenses for the treatment of head lice, and in some cases, have little or no data to support their use. Although natural products are often perceived as being intrinsically safe, the Department of Public Health cannot recommend these treatments without further evidence of their effectiveness.

Please contact your local health department or family physician to make sure there are no potential health consequences when using any alternative method.

Oral Treatments

Trimethoprim-sulfamethoxazole (Septra, Bactrim) is an oral antibiotic, given as a 10-day course, which has been shown to be effective at treating resistant infestations of head lice. Ivermectin (Stromectol) is an antiparasitic drug given as a single dose that has also been shown to effectively treat resistant head lice infestations. However, neither of these drugs is FDA approved for use as a pediculicide.

Note: Flammable or toxic substances, such as gasoline or kerosene, should never be used. Products intended for animal use should not be used to treat head lice in humans. Short hair is more readily searched for lice and eggs but it does not make one invulnerable to infestation. Although shaving the head completely will remove all lice and eggs, this method is not routinely recommended for aesthetic reasons and the potential negative psychological impact on the child.

Treatment of the Environment

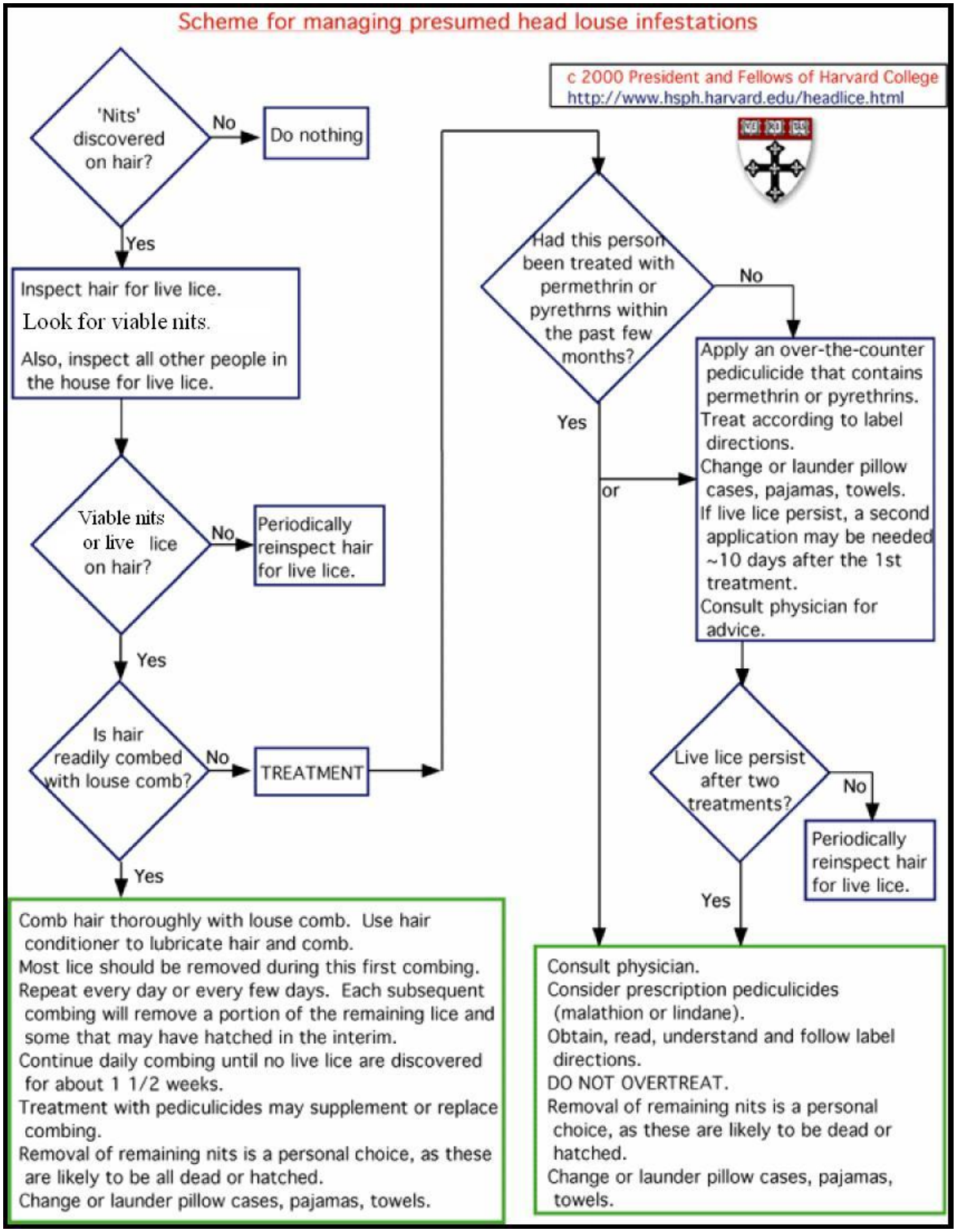
Cleaning the environment will help reduce the chances of becoming reinfested with head lice. Check everyone in the household at the same time, prior to cleaning the environment. This includes grandparents, younger and older siblings and parents. Statistics have suggested that 60% of people with head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

The following are steps that can be taken to help prevent and control the spread of head lice:

- Avoid head-to-head (hair-to-hair) contact during play and other activities at home, school, and elsewhere (sports activities, playground, slumber parties, or camp).
- Do not share clothing such as hats, scarves, coats, sports uniforms, hair ribbons, or barrettes.
- Do not share combs, brushes, or towels. Disinfest combs and brushes used by an infested person by soaking them in hot water (at least 130°F) for 5-10 minutes.
- Do not lie on beds, couches, pillows, carpets, or stuffed animals that have recently been in contact with an infested person.
- Machine wash and dry clothing, bed linens, and other items that an infested person wore or used during the 2 days before treatment using the hot water (130°F) laundry cycle and the high heat drying cycle. Clothing and items that are not washable can be dry-cleaned OR sealed in a plastic bag and stored for 2 weeks.

- Vacuum the floor and furniture, particularly where the infested person sat or lay. However, spending much time and money on housecleaning activities are not necessary to avoid reinfestation by lice or nits that may have fallen off the head or crawled onto furniture or clothing.
- **Do not use** fumigant sprays or fogs; they are not necessary to control head lice and can be toxic if inhaled or absorbed through the skin.

To help control a head lice outbreak in a community, school, or camp, children can be taught to avoid activities that may spread head lice.



School Head Lice Prevention and Control Policy

Currently, there is no scientific evidence demonstrating that enforced exclusion policies are effective for reducing head lice transmission. Although the lice policy is ultimately up to the school administration, school officials are urged to consider these recommendations. A student should not miss more than one or two days from school because of head lice. **Documents to support these recommendations can be found at the end of this manual.**

POLICY for SCHOOLS

When a member of school staff suspects a child is infested with head lice, the following procedures should be followed:

- The child should be restricted from activities involving close contact (i.e., hugging) or sharing personal items (i.e., hats, clothing, and brushes) with other children.
- The school/facility must be notified, and the parents must be contacted (verbal communication is preferred). **Immediate removal of the child is unnecessary.** If the child has lice, they probably have been infested for weeks and prompt removal of the child could lead to embarrassment and ridicule. The child can be sent home at the end of the day. Children should be allowed to ride the school bus home. Transmission via school bus seats is not likely because of the biology of head lice.
- A letter should be sent home notifying classmates' parents that a case of head lice is suspected and asking them to check all of their children for head lice. The school should also provide parents with a copy of an information sheet on head lice infestation and treatment options.

Roles and Responsibilities

Parents have the ultimate responsibility for their children. This includes:

- Assisting in the prevention and management of head lice cases through regular checks of their children's hair and
- Starting immediate treatment when head lice are detected.

School communities have responsibility for:

- Developing school procedures to support prevention and control. Policies and procedures should include the following elements:
    - Individual school lice policy
    - Enforcement procedures for children with reoccurring infestations or repeat violators of the school's lice policy
- Designating an individual to evaluate chronic cases within the school and/or school district that will work together with their local health department to achieve compliance with the school's lice policy.
- Disseminating current information on head lice.
- Holding educational sessions for parents and children.
- Alerting parents when cases have been identified and urging regular head checks at home – **mass screenings are no longer considered necessary.**
- If conflict situations arise, the infested student's parents should be advised to talk with a doctor about their concerns and treatment options.

Local Health Departments/Agencies have responsibility for:

- Providing technical support and knowledge to schools. This may include educational sessions for school staff about:
    - Screening techniques,
    - Identification of head lice and
    - Treatment options.
- Disseminating the most current information on head lice recommendations and control measures.

The Department of Public Health Office of Nursing Protocols for Registered Professional Nurses in Public health can be found at http://dph.georgia.gov/nurse-protocols.

SCHOOL ASSISTANCE – No Nit Policies

What are the advantages of a "No-Nit" policy?

Under a no-nit policy, children may not return to school until the school confirms complete removal of all lice and nits. In this way, infested children will not transmit head lice to others. The **Georgia Department of Public Health does not recommend a no-nit policy.** However, this decision may need to be made on a case-by-case basis to deal with local situations.

What are the disadvantages of a "No-Nit" policy?

Children are often excluded from school even when they are not at risk to transmit head lice. In a Harvard University study, dandruff, fibers, dirt, scabs, skin cells, knotted hair or other insects are misdiagnosed as head lice 40% of the time! Another study found that most children with nits alone did not become infested with adult lice. These reports indicate that many children are unnecessarily excluded from school under a strict no-nit policy.

What are the components of an effective head lice policy?

- Designate a person (such as a school nurse or principal) to check students when an outbreak occurs. This person must also check infested children daily for 10 days after treatment (manual removal, shampoo, etc.) and re-admission to school. A repeat treatment of the child may be necessary in 7-10 days.
- The designated monitor must be trained to identify head lice and nits. Do not exclude children from school based on the diagnosis of an untrained or inexperienced person. Talk to your local health department about training opportunities.
- Educate parents and students about head lice and how to avoid infestation. Emphasize prevention. Distribute the *Parent's Guide to the 'Nitty-Gritty' about Head Lice* or similar educational material to concerned parents.
- Be sensitive when dealing with children (and parents of children) that have head lice. Although not dangerous, head lice can be traumatic.

- Base your policy on the presence of live, adult head lice and viable nits. Policies based only on nits will be inconsistent and may unnecessarily exclude children from school.
- In schools where head lice are a constant problem it may be useful to form a head lice task force consisting of parents, administrators, and a health department nurse, to come up with a plan to reduce re-infestations.

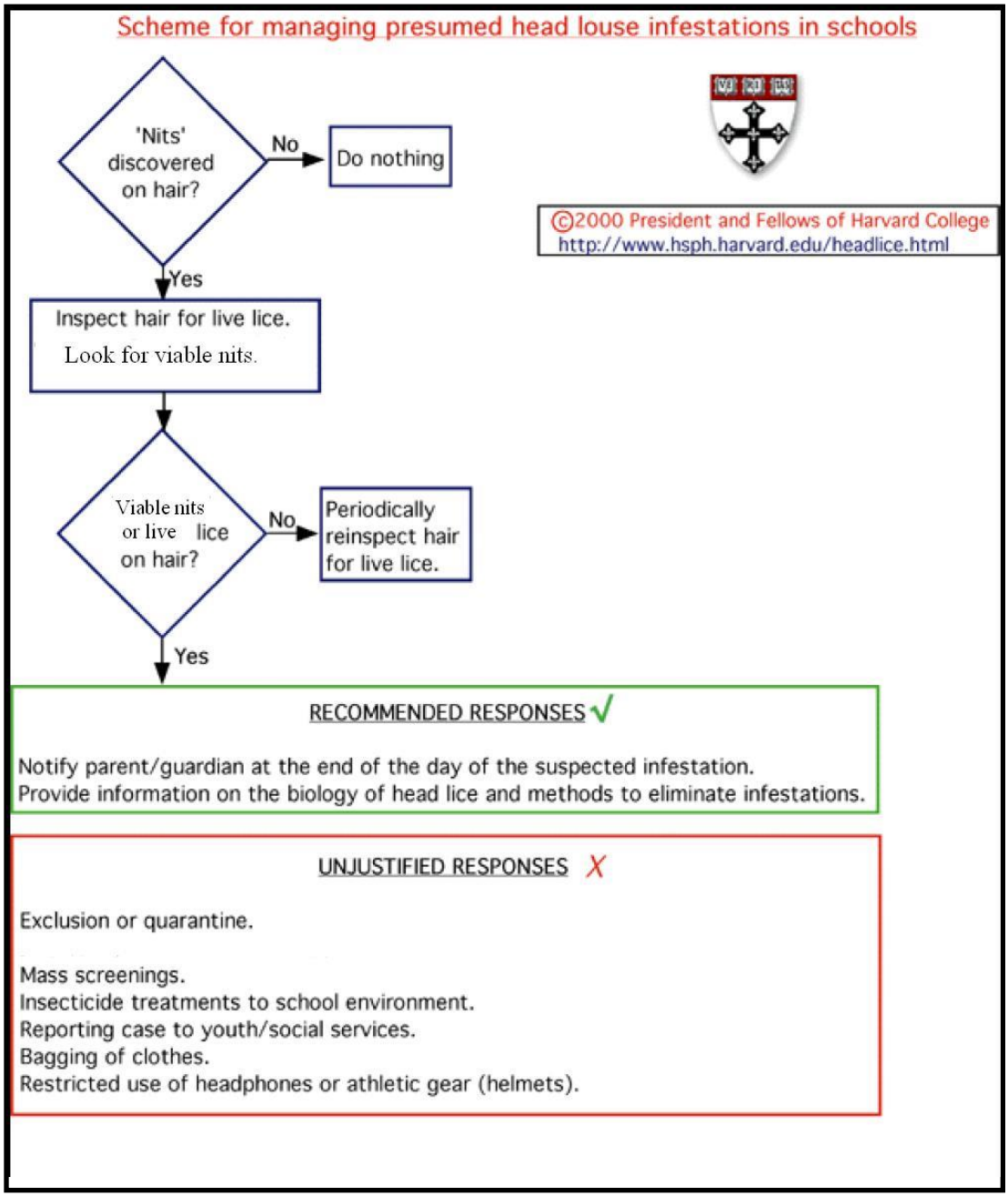
Tips for Preventing Transmission

- Teach children not to share combs, brushes, hair accessories, hats, caps, scarves, headphones or any other personal headgear.
- Do not try on other people's hats (even in department stores).
- Teach children to hang coats separately- placing hats and scarves inside coat/jacket sleeves.
- Shared headgear, (i.e., helmets) should be cleaned and disinfected with Lysol® or rubbing alcohol before being issued to other students.
- Encourage parents to check their children regularly for head lice.
- Begin head lice education within the classrooms so that children can understand head lice and what they can do to help prevent the spread of lice.

Tips for Cleaning the School Environment

- Vacuum all floors, rugs, pillows, carpet squares, and upholstered furniture. There is no need to discard the vacuum bag after cleaning.
- Combs and brushes used on an infested individual should be immersed in water hotter than 130°F, Lysol®, rubbing alcohol or a pediculicide for one hour.
- Play clothes, linens, smocks and cloth toys worn or handled by an infested individual within two days before diagnosis should be washed in water hotter than 130°F, or machine dried at the highest heat setting for at least 30 minutes.
- Other articles may be dry cleaned or sealed in a plastic bag for at least 14 days at room temperature or 24 hours below freezing temperatures.

- Pets in the classroom do not need to be treated and cannot maintain or transmit lice.
- It is NOT necessary to hire an exterminator.
- Spraying or fogging schools with insecticides is NOT RECOMMENDED, and may be harmful if used in a poorly ventilated area.



Center for Expertise for School IPM, Managing Head Lice in School webinar: http://youtu.be/_N2kgDLJCp0

Dealing With Head Lice in Difficult Home Situations

Effective treatment can be difficult and takes perseverance on the part of the parent/guardian and excellent communication and screening on the part of the school. Families should receive education (in the language spoken in the home) about:

- Head lice,
- Methods of treatment,
- Referral to healthcare provider or public health clinic,
- How to identify head lice among family members, and
- How to clean bedding, personal articles, clothing and the home.

Keep in mind that the family's understanding and ability to comply will be affected by factors such as emotional state, literacy level, culture, language/communication skills, previous experience, vision of the caregiver and condition of housing.

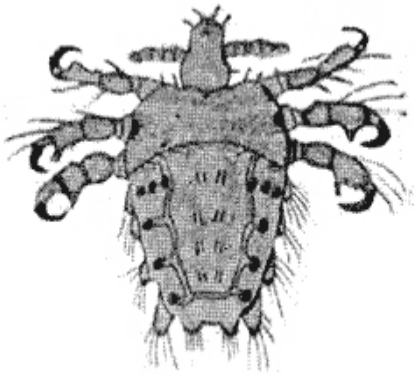
Control of head lice infestation is a community problem that requires the involvement of schools, healthcare providers (including pharmacists), families, and local public health authorities. When an active case of head lice is found, the student should remain in the clinic or office until a family member picks her/him up. Then classmates, friends and siblings should be examined as soon as possible. Although mass screenings are no longer recommended, if a substantial number of cases are found, screening the entire school population should be considered. In cases where head lice are becoming problematic, routine screenings at the beginning of the school year, and after extended holidays such as winter and spring breaks may need to be considered. Notification of families prior to screenings provides an opportunity for health education.

Treatment of head lice must include simultaneous attention to the student and his environment. All persons in the household and other close contacts of the student

should be examined. Contacts should be treated only if evidence of lice or nits is found. If a child is being cared for in multiple households, it will be necessary to educate family members in each of these households on ways to control head lice. It may be useful to enlist the help of other agencies or local churches to reach these families where need is great.

Pubic Lice

Information for Schools



Crab louse

Pubic (crab) lice are parasitic insects found in the genital area of humans. Infection is common and found worldwide.

Pubic lice are usually spread through sexual contact. Rarely, infestation can be spread through contact with an infested person's bed linens, towels, or clothes. Animals do not get or spread pubic lice. A common misunderstanding is that infestation can be spread by sitting on a toilet seat. This isn't likely, since lice cannot live long away from a warm human body. Also, lice do not have feet designed to walk or hold onto smooth surfaces such as toilet seats.

Pubic lice are generally found in the genital area on pubic hair; but may occasionally be found on other coarse body hair, such as hair on the legs, armpits, mustache, beard, eyebrows, or eyelashes. Infestations of young children are usually on the eyebrows or eyelashes. Lice found on the head are not pubic lice; they are head lice. It is important to be able to distinguish pubic lice and head lice, as pubic lice infestation in a young child or teenager may indicate sexual activity or sexual abuse.

Signs and symptoms of pubic lice include:

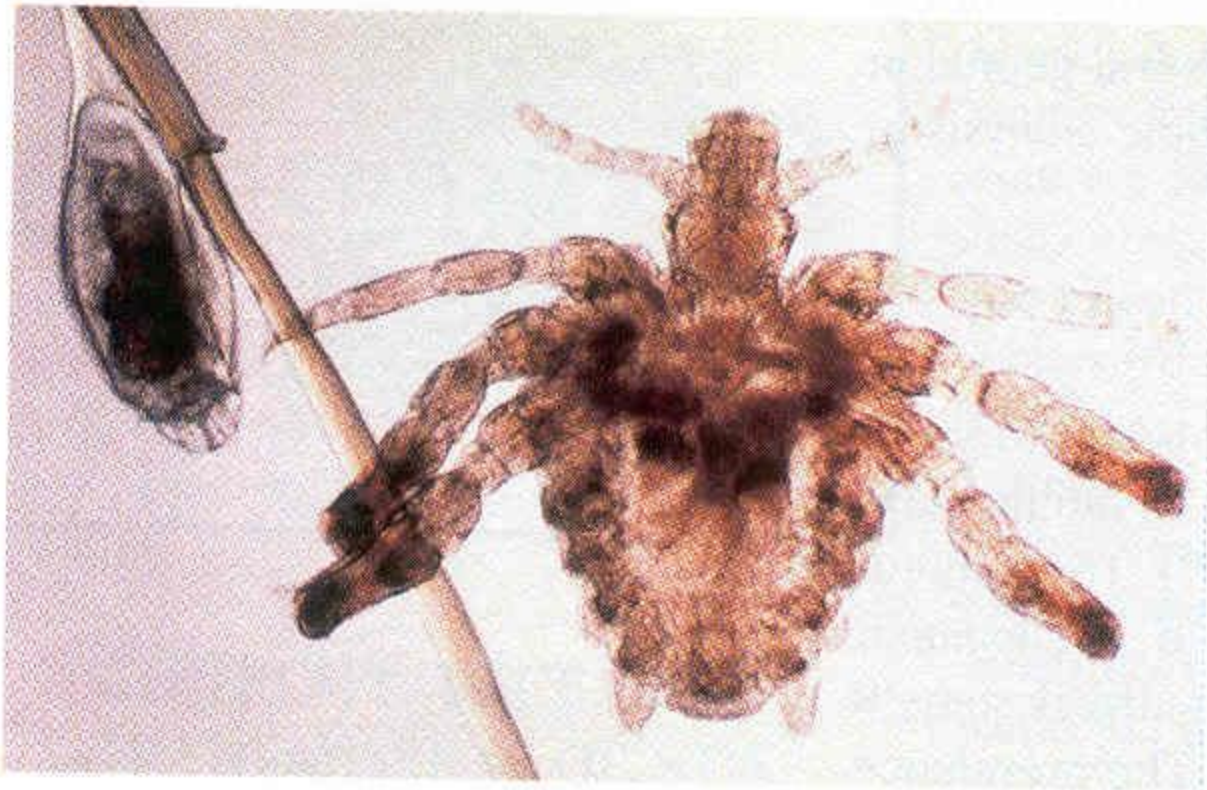
- Itching in the genital area
- Visible nits (lice eggs) or crawling lice
- The presence of black powder in under-garments

Like head lice, pubic lice go through three stages (nit, nymph, adult). The adult pubic louse resembles a miniature crab when viewed through a strong magnifying glass. Pubic lice have six legs, but their two front legs are very large and look like the pincher claws of a crab; this is how they got the nickname "crabs." Pubic lice are tan to grayish-white in color. Females lay nits and are usually larger than males. To live, adult lice must feed on blood. If the louse falls off a person, it dies within 1-2 days.

To treat nits and lice found on eyebrows or eyelashes:

- If only a few nits are found, it may be possible to remove live lice and nits with your fingernails or a nit comb.
- If additional treatment is needed for pubic lice nits found on the eyelashes, applying an ophthalmic-grade petrolatum ointment (only available by prescription) to the eyelids twice a day for 10 days is effective. Vaseline* is a kind of petrolatum, but is likely to irritate the eyes if applied.

For treatment of pubic lice in the genital area, a lice-killing shampoo made of 1% permethrin or pyrethrin is recommended. These products are available without a prescription at your local drug store. Apply the medication exactly as directed on the bottle. Because of the possibility of sexual abuse when pubic lice are found on children, it may be advisable to refer such cases to Family and Children Services. Pubic lice infestation in teenagers may denote sexual activity. Careful questioning is important to determine if this is the case; education on the methods of treating pubic lice and on protecting oneself from other sexually-transmitted diseases and unwanted pregnancy should be undertaken.



The pubic louse resembles a crab.

Information for Parents - If Your Child Has Pubic Lice

Although sexual contact is the most common method of transmission, your child may have become infested by using towels or bedding at a friend's house or even from trying on a bathing suit without wearing underwear. Talk to your child in a non-accusatory way to determine how the pubic lice may have been contracted.

If your child has been sexually active, you should address the issue immediately and directly. STDs are upsetting for anyone, but they can be especially disturbing when they occur in a child.

REFERENCES

American Academy of Pediatrics Clinical Report: Head Lice, PEDIATRICS Vol. 110 No. 3 September 2002 (http://pediatrics.aappublications.org/content/pediatrics/110/3/638.full.pdf)

Georgia Pest Management Handbook, The University of Georgia Cooperative Extension Service (http://www.caes.uga.edu/content/dam/caes-website/departments/entomology/documents/ga-pest-management-handbook/2017-homeowner/HUMAN-OUTDOOR.pdf)

Head Lice: Integrated Pest Management in and Around the Home, M. K. Rust, J. H. Klotz, N. C. Hinkle, and S. Klotz, IPM Education and Publications, UC Statewide IPM Project, University of California, Davis, CA 95616-8620. (http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7446.html)

Public Health Pest Management: *A Training Guide* (ENT 63), Michael F. Potter and G. Mark Beavers, Cooperative Extension Service, University of Kentucky, Department of Agriculture. (http://www.uky.edu/Ag/PAT/Ent_63.pdf)

The IPM Institute of North America, Inc. List of references - https://ipminstitute.org/projects/school-ipm-2020/resources/#pest-specific-fact-sheets

The University of Georgia Cooperative Extension Service "A Parent's Guide to the Nitty-Gritty about Head Lice" and "A School's Guide to the Nitty-Gritty about Head Lice". (http://schoolipm.ifas.ufl.edu/doc/headliceparents.pdf and http://schoolipm.ifas.ufl.edu/doc/headliceschools.pdf)

Kid's Health for Parents, Nemours Foundation (http://kidshealth.org/parent/infections/std/pubic_lice.html)

CDC - Lice (http://www.cdc.gov/parasites/lice/index.html)

WebMD (http://www.webmd.com/parenting/features/what-do-when-your-child-has-head-lice)

The National Pediculosis Association (http://www.headlice.org/)

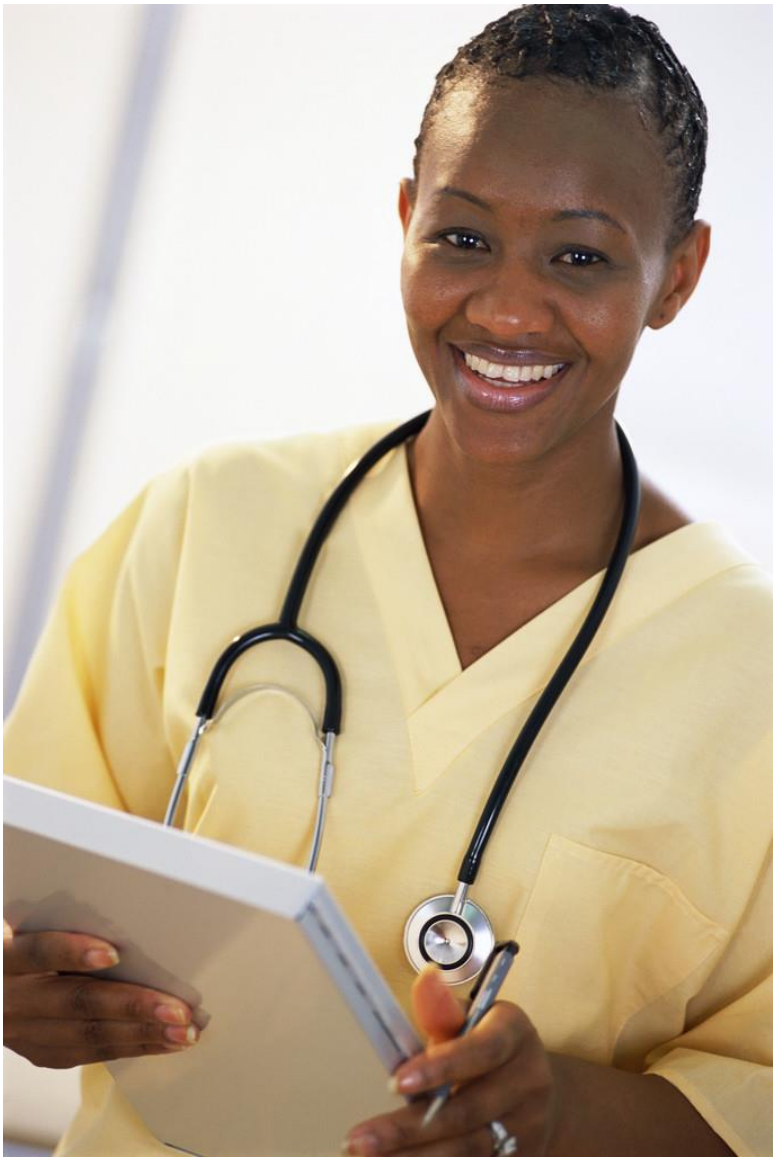
Georgia Department of Public Health, Office of Nursing (https://dph.georgia.gov/office-nursing)

Appendices:

- Supplemental Materials for Nurses
  - References
- Supplemental Materials for Schools
  - Sample Letters
    - Head Lice Found on a Child
    - Head Lice Detected in Classroom
    - Parent/Guardian Education
  - Head Lice Screen Procedures
  - No-Nit Policy Information
  - What Can Schools Do About Head Lice
- Supplemental Materials for Home
  - 10 Tips for Manual Removal of head Lice
  - Treatment Flowchart
  - Management Flowchart
  - 10 Steps to Keep Ahead of Head Lice
  - 10 Days to Freedom from Head Lice

SUPPLEMENTAL MATERIALS

For Nurses



References for nurses:

Burgess, Ian F. 2004. Human Lice and Their Control. Annual Review of Entomology. 49: 457-481.
ABSTRACT: Current research on human louse biology has focused on the long-standing debate about speciation of head and body lice but using new tools of DNA and enzyme analysis. These studies have indicated that head and body lice from the same geographical zone may be more closely allied than insects inhabiting the same ecological niche in other regions. However, the majority of research over the past decade has involved clinical aspects including transmission, treatment, and the appearance and identification of resistant strains within populations of lice. Despite advances, there is a need for a better understanding of louse biology, as existing therapies fail and lice remain potential vectors of disease for millions of people.

Izri, Arezki and Olivier Chosidow. 2006. Efficacy of Machine Laundering to Eradicate Head Lice: Recommendations to Decontaminate Washable Clothes, Linens, and Fomites. Clinical Infectious Diseases. 42: 9-10.
(http://cid.oxfordjournals.org/content/42/2/e9.full.pdf)

*ABSTRACT: The efficacy of machine laundering to eradicate head lice should be determined. Viable lice and nits were machine laundered using 3 washing progra*ms (with water temperatures of 40°C, 50°C, and 60°C), with and without detergent, and the results were compared with results for control lice and nits. A drying program was also used. Either washing done with a water temperature of at least 50°C or drying is necessary to kill head lice and nits.

Williams, L Keoki, Amanda Reichert, William R MacKenzie, Allen W Hightower, and Paul A Blake. 2001. Lice, Nits, and School Policy. Pediatrics. 107 (5): 1011-1015.
http://www.co.washington.wi.us/uploads/docs/CHN_AAP_LiceNitsSchoolPolicy.pdf

ABSTRACT: The epidemiology of head lice infestation is poorly understood. Many schools treat all children with nits as though they are contagious. Children with nits but no lice are often removed from school until they are treated and all visible nits are removed…. Although having ≥5 nits within one fourth inch of the scalp was a risk factor for conversion, most children with nits alone did not become infested. Policies requiring exclusion from school and treatment for all children with nits alone are likely excessive. Instead, these children may benefit from repeated examination to exclude the presence of crawling lice.

SUPPLEMENTAL MATERIALS

FOR SCHOOLS

** SAMPLE **

HEAD LICE FOUND ON CHILD

"Date"

Dear Parent or Guardian of_____

Head lice or recently laid nits (eggs) have been found on your child's head. Head lice have nothing to do with the cleanliness of a house or parenting skills. Head lice are spread by head-to-head contact, although sharing hats, combs, and other hair accessories may also spread head lice. Head lice crawl, they cannot jump or fly. Head lice are not a risk to pets nor can you get head lice from a pet.

It is important to treat your child before he/she returns to school so that the head lice do not spread. Please begin treatment as soon as possible and then send your child back to school so that he/she does not miss learning opportunities in the classroom. This should take only one or two days. Your child will be rechecked when he/she returns to schools to make sure lice and nits have been killed. Also, remember to check everyone in the household and treat anyone that has live head lice and/or nits within ¼ inch of the scalp. Continuous checking may be required for 3 weeks to avoid reinfestation.

The following treatments are recommended:

Over-The-Counter Treatments:
Head lice may be treated with shampoos specifically labeled for head lice. *Read and follow the directions carefully*. Many of these shampoos are insecticides and should be used with caution, especially on children and by pregnant or nursing women. If your child has allergies or asthma, please consult with his/her physician. If the package directions indicate, apply a second treatment 10 days later to kill lice that hatch after the initial treatment. Do not over apply.

Removal of Head Lice and Nits:
Lice shampoos do not remove the eggs from the hair. The eggs must be combed out and/or manually removed. Sit behind your child in a room with good lighting to comb through the hair, one section at a time. Use a fine-toothed nit comb. These combs are sold at most stores or may be included in packages of the chemical treatments. Combs with metal teeth spaced close together work best. Your child's hair should be clean, wet, well combed or brushed to remove tangles before using the louse comb. A conditioner may be used to lubricate the hair. Divide hair into small sections. Comb through each section until no more lice or nits are observed. Clean the comb frequently with a paper towel to remove any lice or eggs. Continue to comb daily until no live lice are discovered for 3 weeks.

Adult female lice cement eggs to the base of the hair shaft near the scalp. Combs, brushes, hats, and other hair accessories in contact with an infested person should be washed in hot water (130°F) to dislodge any lice or nits, and should not be shared with other family members.

Alternative Treatments:
Other products such as essential oils, food oils, salts, mayonnaise, etc., have not been studied sufficiently to determine effectiveness. Do not apply any household insecticide, (i.e., Raid) or other chemicals not specifically labeled for treating head lice on people. Well-intentioned parents treating their children with toxic or flammable substances, or hair dryers, have caused injuries and death. Because it is easy to burn the hair and the scalp, this method is not recommended.

Prescription Medications:
In some cases the over-the-counter products fail to eliminate live lice. Your child's physician may then order a prescription for treatment of head lice. Ask your physician, the school nurse or pharmacist if you don't fully understand the directions.

Treatment of clothes/household cleaning:
All items your child has been in contact with in the past two days such as towels, pillowcases, sheets, pajamas, clothes, coats, hats, and similar items should be washed in hot water (130°F) and dried on high heat for at least 30 minutes. Items that cannot be washed may be stored in a tightly sealed garbage bag for a period of two weeks or may be placed in a freezer or outdoors (if temperatures are below freezing) for 24 hours. Lice in the environment (not on the head) usually die within a day and the eggs generally cannot live much longer. Vacuuming the house, mattress and furniture is recommended. Using household insecticides to treat the home, vehicles, carpets or furniture is not recommended and may unnecessarily expose your household to harmful chemicals.

Please contact me if you have any questions.

Sincerely,

**** SAMPLE ****

LICE DETECTED IN CLASSROOM LETTER
GENERAL PREVENTION AND DIRECTIVE STEPS

"DATE"

Dear Parent/Guardian:

A case of head lice has been found in the school. The parents of all students are being notified via this letter. Head lice are very common in school-age children. They do not carry disease. They have nothing to do with the cleanliness of a house or parenting skills.

This is not cause for panic.
It is cause for action to be taken to prevent head lice.
Treat/remove any head lice or nits found on your child's head.

It is extremely important for you to check your child's head TODAY. If you find head lice, keep checking every 2 days until there are no head lice found for 10 consecutive days. The school is taking steps to control the spread of lice, including checking students' heads and sending them home as needed.

The best way to prevent transmission:

- ☐ Teach children not to share combs, brushes, hair ornaments, hats, caps, scarves, headsets, or any other personal headgear.
- ☐ Do not try on other people's hats (even in department stores).
- ☐ Teach children to hang coats separately - placing hats and scarves inside coat/jacket sleeves.
- ☐ Clean or disinfect shared headgear (i.e., helmets) with Lysol® or rubbing alcohol before being used by others.
- ☐ Conduct regular head checks of your child.

If head lice are found on your child:

- ☐ Check others in the household for signs of head lice or nits. If found, complete remaining steps on all infested individuals.
- ☐ Remove nits from the head by combing. This is the most important lice control measure. Complete nit removal is time-consuming but is critical for successful treatment.
- ☐ Use an effective head lice treatment.
- ☐ Remove all of the lice and nits from the environment by washing or vacuuming. There is no need to spray pesticides at home.
- ☐ Perform daily head checks and remove nits for 3 weeks until head lice are gone. Continue to check your child weekly to detect reinfestation.

If you have difficulties treating the head lice on your child, please contact the school, local health department, or your child's physician.

** SAMPLE **

PARENT/GUARDIAN EDUCATION

"Date"

Dear Parents/Guardians,

We are sending this letter to all parents to increase head lice awareness so that you may take steps at home to help prevent your child from becoming infested with head lice. Any time children come together, particularly at the start of the school year or any social grouping like Girl/Cub Scouts, Brownies or Little League, head lice cases commonly increase. Please encourage your child not to share or trade personal items such as hats, combs, brushes, headbands, barrettes, as well as helmets or headphones with foam ear protectors.

Direct, physical, head-to-head contact is the usual method of transmission. Lice do not jump, fly or swim. They are, however, good crawlers. Check your child's head weekly for lice and/or nits (eggs). Mature lice, which are no bigger than a sesame seed, avoid light and are hard to see. Lice eggs or "nits" are usually found close to the scalp – usually within ¼ inch. They appear as tiny whitish ovals that are "glued" to the hair shaft. They cannot easily be flicked away as dandruff can. Head lice do not transmit disease and are not a serious medical condition. They cannot survive on your pets.

If you find head lice on your child, please notify the school and keep him or her home until properly treated. Continue to examine all family members for 3 weeks and treat if live lice or nits close to the scalp are found.

- Check Regularly
- Treat Quickly
- Help Keep Head Lice Off Your Child

For more information regarding head lice or its treatment, please feel free to contact the school office or your local health department. Thank you for your help and support.

Sincerely,

Head Lice Screening Procedure

Suggested equipment and supplies:

- ✓ Disposable applicator sticks or tongue depressors
- ✓ Strong source of natural light, high intensity lamp
- ✓ Magnifying glass
- ✓ Disposable gloves (optional)
- ✓ Trash can with garbage bags
- ✓ Transparent Tape
- ✓ Chair/privacy for person being screened
- ✓ Copy or knowledge of school district's head lice policy

Identification of head lice is made by direct inspection of the hair and scalp for the presence of live lice and nits. *More often than not, identification will be achieved by seeing attached nits rather than by crawling lice*. Lice and nits are most often found in the hair behind the ears and at the back of the neck.

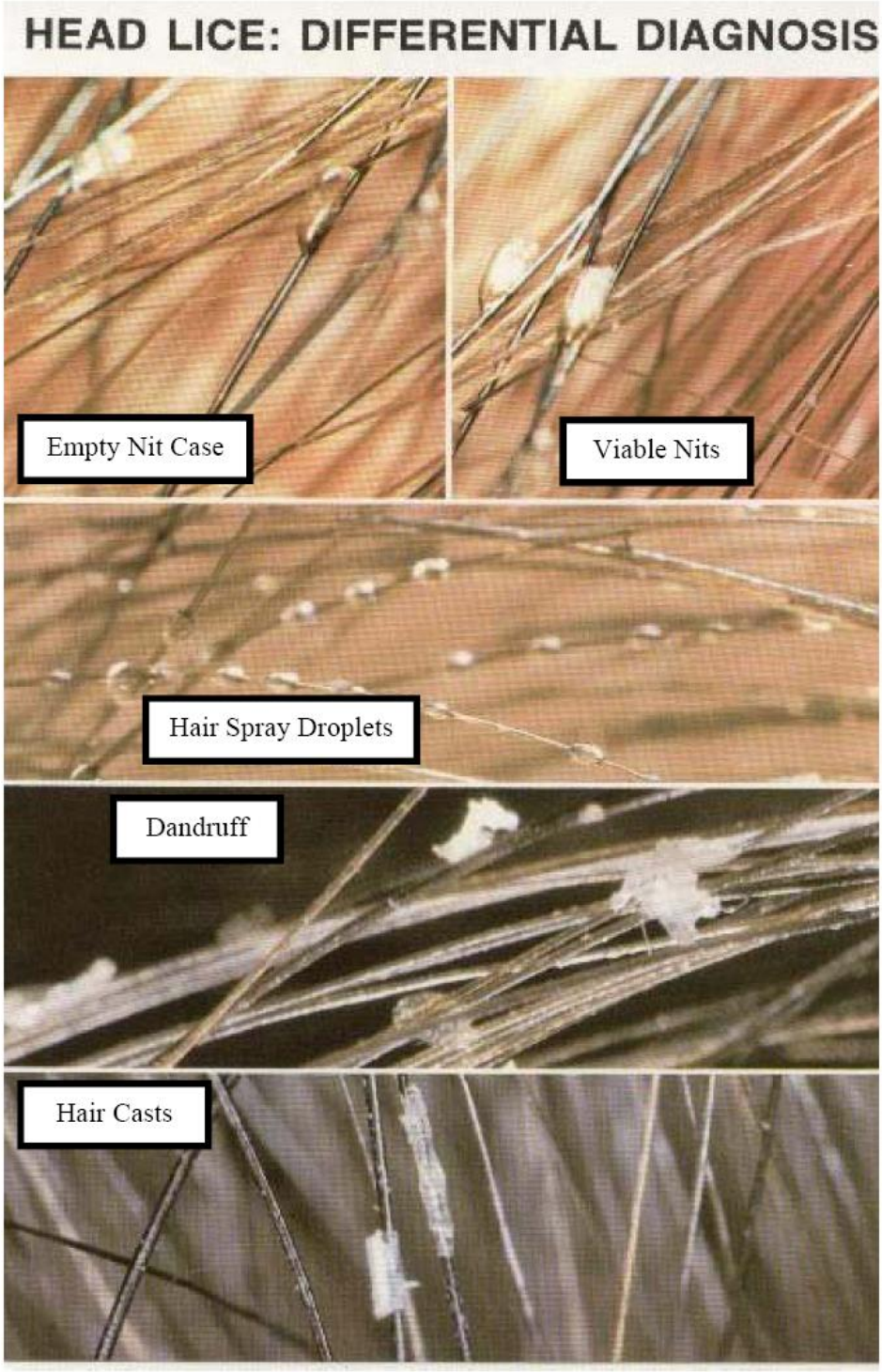
Things to Know:

- Live lice are about the size of a sesame seed, usually brown, and move quickly away from light.
- Nits are tiny, yellowish-white oval eggs firmly attached at an angle to the hair shaft.
- Be sure not to confuse nits with hair debris such as desquamated epithelial cell (DEC) plugs (bright white irregularly shaped clumps of dandruff stuck to the hair shaft), or hair casts (elongated segments of dandruff encircling the hair shaft). Children who have been over-applied with lice treatments often have these artifacts, which may confuse identification.

Screening Procedure:

1) Begin by separating the hair into small sections.
2) Using a natural light or high intensity lamp and magnifying glass if needed, examine the hair behind the ears, back of the neck and scalp for crawling lice or nits.
3) If no lice or nits are found in these areas, continue to inspect the rest of the head.

Differential Diagnosis



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No Nit Policy Information

For Release: September 3, 2002, 12:01 am (ET)

CHICAGO - In a new clinical report, the **American Academy of Pediatrics** (AAP) attempts to clarify diagnosis and treatment of head lice and makes recommendations for dealing with this condition in school. Among its recommendations, the AAP says **no healthy child should be excluded from, or allowed to miss school because of head lice,** and that "no nit" policies for return to school should be discouraged. Numerous anecdotal reports exist of children missing weeks of school and even being forced to repeat a grade because of head lice.

Although not painful or a serious health hazard, head lice are the cause of much embarrassment and misunderstanding, many unnecessary days lost from school and work, and millions of dollars spent on remedies.

The AAP recommendations for treating head lice also include:

1. School personnel responsible for detecting head lice should be appropriately trained, as it can be difficult to diagnose.
2. Permethrin 1% (an insecticide) is currently the recommended treatment for head lice.
3. Head lice screening programs in schools do not have a significant effect on the incidence of head lice, and are not cost-effective. **Parent education programs may be a more appropriate management tool.**
4. Manually removing nits after medication for killing lice is not necessary to prevent spread. However it may be prudent to remove nits in school-aged children to decrease the chance of misdiagnosis. Nit removal is tedious and often cannot be accomplished in one sitting.

Because a child with an active head lice infestation has likely had the infestation for a month or more by the time it is discovered, and because the child poses little

risk to others and does not have a resulting health problem, he or she should remain in class, but be discouraged from close direct head contact with others.

Head lice are most common in children three to 12 years of age, and all socioeconomic groups are affected. Head lice infestation is not significantly influenced by hair length or by frequent brushing or shampooing. Lice cannot hop or fly; they crawl. Transmission in most cases occurs by direct contact with the head of another infested individual. Indirect spread through contact with personal belongings of an infested individual (combs, brushes, hats) is much less likely, but cannot be excluded.

Currently there are a variety of treatments available for head lice including solutions in shampoo and cream rinse formulas, topical agents and manual removal. The AAP recommends Permethrin 1% as it has low toxicity for humans and does not cause allergic reaction to individuals with plant allergies. The product is a cream rinse applied to hair that is first shampooed with a non-conditioning shampoo and then towel-dried.

It is probably impossible to totally prevent head lice infestations as young children frequently come into close head-to-head contact with each other. Children should be taught not to share personal items such as combs, brushes and hats. Adults should be aware of the signs and symptoms of head lice infestation, and affected children should be treated promptly to minimize spread to others.

NOTE: The American Academy of Pediatrics is an organization of 57,000 primary care pediatricians, pediatric medical subspecialists and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents and young adults.

National Association of School Nurses
POSITION STATEMENT

Nit Free Policies in the Management of Pediculosis

HISTORY:
Surviving since prehistoric times, head lice (pediculosis capitus) are small parasitic insects that live on the scalp and neck hairs of their human hosts. Adult female lice prefer to attach their eggs (nits) to the base of a hair shaft.

DESCRIPTION OF ISSUE:
Families and school staff expend innumerable hours and resources attempting to eradicate infestations, expending equal efforts on live lice and their nits.

RATIONALE:
Rarely, if ever, causing direct harm, head lice are not known to transmit infectious disease person-to-person. Furthermore, current research does not support the conclusion that enforced exclusion (nit free) policies result in reduced transmission of head lice.

CONCLUSION:
It is the position of the National Association of School Nurses that nit-free policies disrupt the education process and should not be viewed as an essential strategy in the management of head lice.

References:
Centers for Disease Control Fact Sheets:
http://www.cdc.gov/parasites/lice/index.html

Adopted: November, 1999

The above reference can be found at:
http://www.headlice.org/downloads/nonitpolicy.htm

The following reference can be found at the URL below:
http://www.cdc.gov/parasites/lice/publications.html

Update on Head Lice in Schools:
Do 'No-Nit' Policies Work?
May 2001

A recent Centers for Disease Control and Prevention/Georgia Department of Public Health study investigated the probability that schoolchildren found with nits alone will become infested with lice.

According to an article published in the May 7, 2001 issue of *Pediatrics*, more than 1,700 Atlanta-area schoolchildren were examined for head lice. Ninety-one were found with nits alone or lice. Of the 63 children with nits only, 50 completed the study. Of the 50 children with nits alone, only 9 or 18% became infested with lice during the 2-week follow-up. "This is good evidence that most nits do not develop into lice," says Allen Hightower, statistician for the study. "There is some evidence that nits found within 1/4 inch of the scalp will develop into lice, but even in these cases, two-thirds did not." In the study, seven of 22 children with five or more nits found within 1/4 inch of the scalp developed a lice infestation during the 2-week follow-up. The data suggest that health policy developers consider reevaluating the usefulness of a "no-nit" policy that excludes children from school just because nits alone are found in the hair.

For More Information

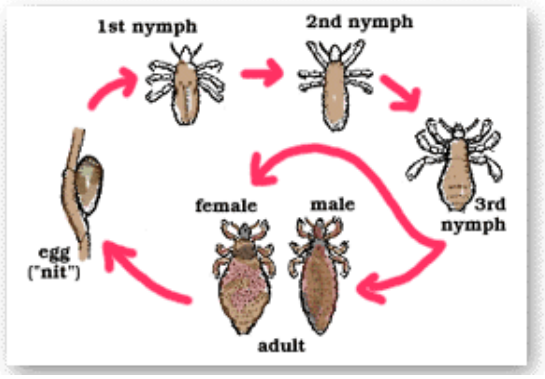
Williams LK, Reichert A, Mac Kenzie WR, Hightower AW, Blake PA. Lice, nits, and school policy. Pediatrics 2001;107:1011-1015.

Communicable Disease Surveillance Center. Working document combs out guidance on head lice. Commun Dis Rep CDR Wkly 1998;8:405.

Pollack RJ, Kiszewski AE, Spielman A. Overdiagnosis and consequent mismanagement of head louse infestations in North America. Pediatr Infect Dis J 2000;19:689-793.

Pray WS. Head lice: perfectly adapted human predators. American Journal of Pharmaceutical Education 1999;63:204-209.

Juranek DD. *Pediculus capitis* in school children: epidemiologic trends, risk factors, and recommendations for control. In: Orkin M, Malback HL, eds. Cutaneous Infestations and Insect Bites. New York, NY:Marcel Kekker, Inc: 1985;199-211.



What Can the School Do to Help Control and Prevent Head Lice?

Clean the School Environment:

- ☐ Vacuum all floors, rugs, pillows, carpet squares, and upholstered furniture. There is no need to discard the vacuum bag after cleaning except for aesthetic purposes.
- ☐ Play clothing, linens, art smocks, stuffed animals, and cloth toys used by an infested child within 2 days before diagnosis should be washed in hot water, or machine dried at the highest heat setting for at least 30 minutes.
- ☐ Spraying or fogging schools with insecticides or pediculicides is **NOT RECOMMENDED**, and may be harmful if used in poorly ventilated areas.
- ☐ Shared headgear, headphones, and/or helmets should be cleaned and disinfected with Lysol® or rubbing alcohol before being used by other people.

To Prevent Transmission:

- ☐ Teach children not to share or use their friends' combs, brushes, hair ornaments, hats, caps, scarves, headphones with foam protectors, coats, pillows, or any other personal headgear.
- ☐ If possible, provide separate lockers or "cubby holes" for each child's coat and clothing. Consider separate plastic bags for each child to put their personal items in before hanging on hooks if no lockers are available.
- ☐ Teach children to place their hats, mittens and scarves inside coat/jacket sleeves before hanging on hooks if coats can hang separately.
- ☐ Pets in the classroom do not need to be treated and cannot maintain or transmit lice.
- ☐ Begin head lice education within the classrooms so that children can understand head lice and what they can do to help prevent the spread of lice.

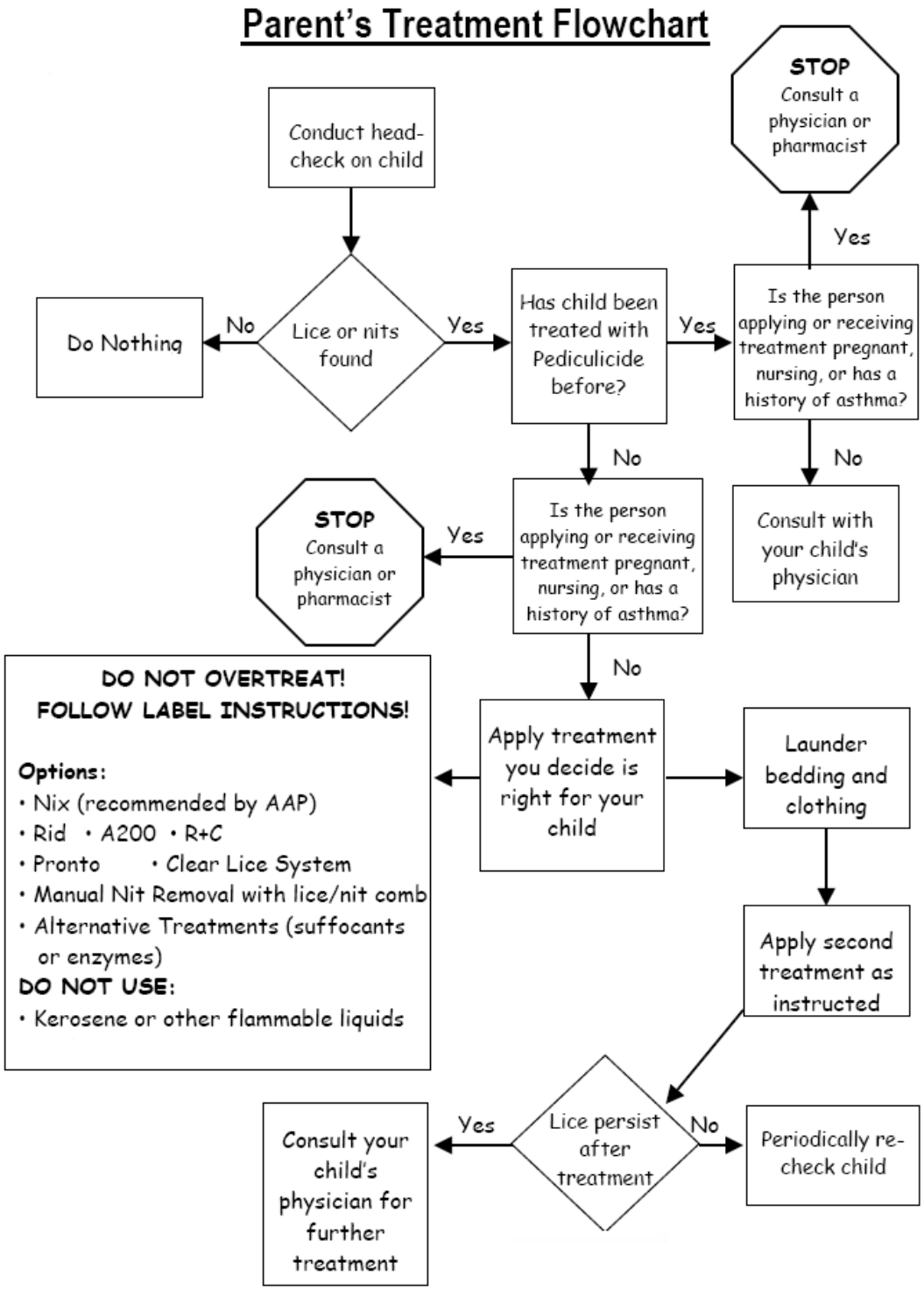
SUPPLEMENTAL MATERIALS

FOR HOME

10 Tips for Manual Removal of Head Lice

1. Work in a well-lighted area or use a flashlight and magnifying glass/hand lens.
2. Use a grooming comb or hairbrush to remove tangles. A hair detangler spray or other hair conditioner may aid in this process.
3. Divide the hair in sections and secure the hair that is not being worked on.
4. Use a lice comb to detect and remove lice and nits (a comb with closely placed stainless steel teeth works well).
5. Go through hair sections from the scalp to the end of the hair. Nits are usually found close to the scalp.
6. Dip the comb in a cup of hot, soapy water or use tape to remove any lice, nits, or debris from the comb.
7. Sift through the same section of hair and look for attached nits and live lice.
8. Move on to the next section until entire scalp and all hair has been checked.
9. Screen the infested person every day for ten days and regularly thereafter.
10. If additional nits (at least 3-5 per day) are discovered, another manual search is recommended.

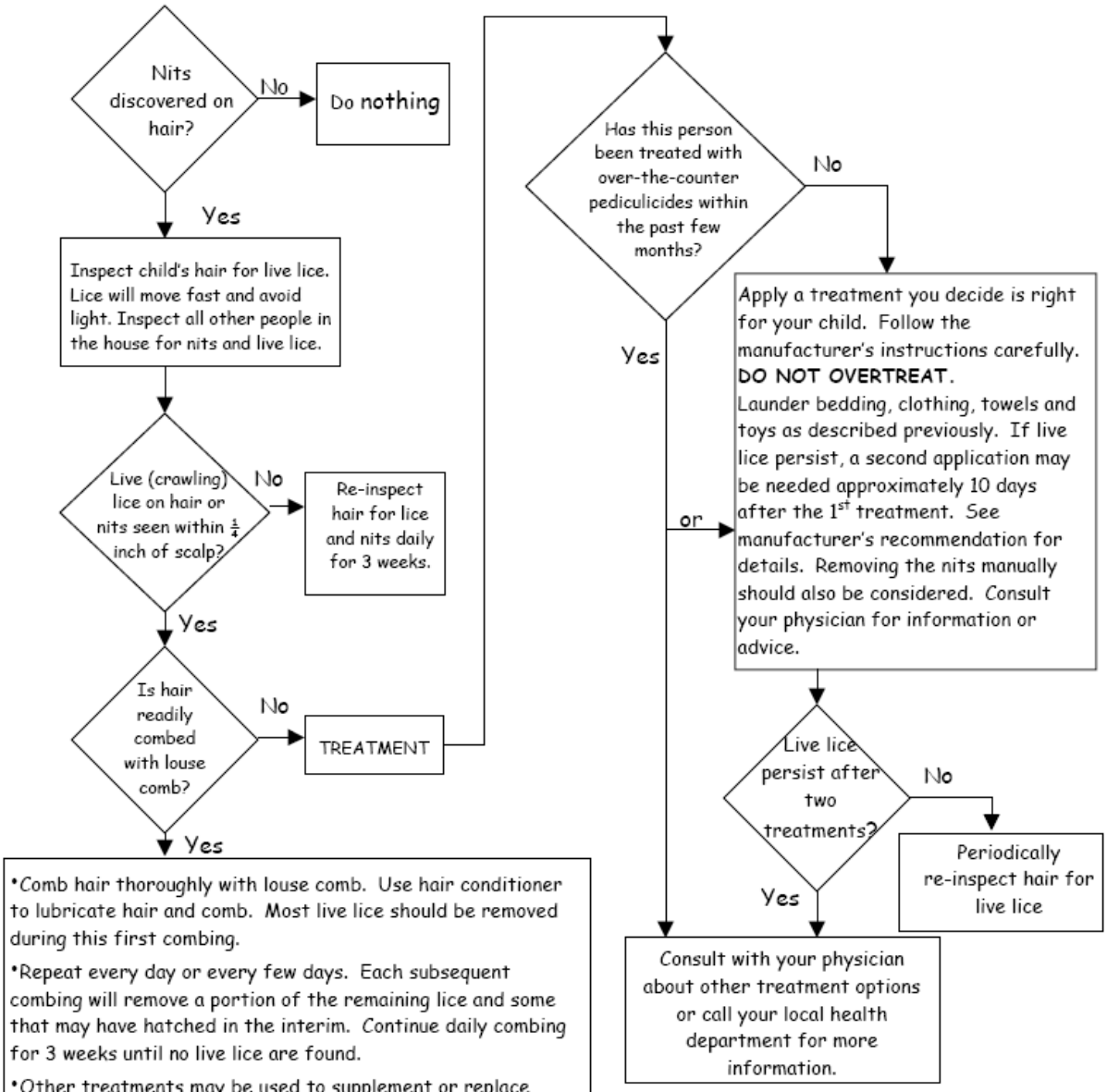
Adapted from The University of Georgia Cooperative Extension Service “A Parent’s Guide to the Nitty-Gritty about Head Lice” pamphlet.



Derived from the Michigan Head Lice Manual:

http://www.michigan.gov/documents/mdhhs/MI_HL_Manual_Final_2013_558106_7.pdf

Parent's Flowchart for Managing Head Lice Infestations



- Comb hair thoroughly with louse comb. Use hair conditioner to lubricate hair and comb. Most live lice should be removed during this first combing.
- Repeat every day or every few days. Each subsequent combing will remove a portion of the remaining lice and some that may have hatched in the interim. Continue daily combing for 3 weeks until no live lice are found.
- Other treatments may be used to supplement or replace combing.
- Removal of nits after treatment is a personal choice, as they are likely to be all dead or hatched.
- Launder bedding, clothes, towels and toys used by the child. Use water at least 130F and dry on high heat for 30 minutes.

Derived from: President and Fellows of Harvard College ©2000
http://www.hsph.Harvard.edu/headlice.html

10 Steps to Keep Ahead of Head Lice

1) Watch for signs of head lice, such as frequent head scratching. Anyone can get lice, mainly from direct head-to-head contact, sharing hats, brushes, etc.

2) Check all family members 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 or physician before applying pesticides or other lice treatments if anyone involved is pregnant or nursing, has allergies, asthma, or has nits in the eyebrows or lashes. 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 only completely 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 recently worn clothing in hot water (above 130°F) and dry in high heat for 30 minutes. Combs and brushes should be soaked in hot water 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.**

Derived from the Michigan Head Lice Manual:
http://www.michigan.gov/documents/mdhhs/MI_HL_Manual_Final_2013_558106_7.pdf

Georgia Head Lice Manual

Derived from the Michigan Head Lice Manual:
http://www.michigan.gov/documents/mdhhs/MI_HL_Manual_Final_2013_558106_7.pdf

10 Days to Freedom from Head Lice

Day 1
- Notify or check all exposed friends and family members.
- Treat only those who are infested with live lice or have evidence of nits laid ¼ inch from the scalp.
- Wash all bedding, clothing, and toys in hot water (130°F) and dry on high heat for 30 minutes.
- Vacuum all carpeting, furniture and car upholstery.

Day 2
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.

Day 3
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.

Day 4
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.

Day 5
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.

Day 6
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.

Day 7
- Vacuum.
- Check all members of home for nits that may have been missed.
- If nits or lice are still seen, repeat treatment if indicated by instructions.

Day 8
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.
- If nits or lice are still seen, repeat treatment if indicated by instructions.

Day 9
- Vacuum.
- Check all members of home for nits that may have been missed.
- If nits or lice are still seen, repeat treatment if indicated by instructions.

Day 10
- Vacuum.
- Check all members of home for nits that may have been missed.
- Comb/pick nits out of hair.
- If nits or lice are still seen, repeat treatment if indicated by instructions.

**** Some lice treatments may indicate a second treatment after 7 to 10 days. Please follow the manufacturer's instructions carefully and only apply when it is suggested. This chart serves as a reminder only for days 7,8,9, and 10. ****