



Treating Head Lice

Head lice. Every parent's nightmare. A year-round problem, the number of cases seems to peak when the kids go back to school in the fall and again in January, says Patricia Brown, M.D., a dermatologist at the Food and Drug Administration (FDA).

An estimated 6 to 12 million cases of head lice infestation occur each year in the United States in children 3 to 11 years of age, according to the Centers for Disease Control and Prevention. Head lice are most common among preschool children attending child care, elementary school children, and household members of children who have lice.

Contrary to myth, head lice are not caused by poor hygiene, Brown says. They are spread mainly by direct head-to-head contact with a person who already has head lice. You cannot get head lice from your pets; lice feed only on humans.

Lice don't fly or jump; they move by crawling. But because children play so closely together and often in large groups, lice can easily travel from child to child, especially when they touch heads during playing or talking

Blood-Sucking Bugs

Head lice are blood-sucking insects about the size of a sesame seed and tan to grayish-white in color. They attach themselves to the skin on the head and lay eggs (nits) in the hair.





“Many head lice products are not for use in children under the age of 2, so read the label carefully before using a product to make sure it is safe to use on your child,” Brown says.

According to Brown, you can check for head lice or nits by parting the hair in several spots. You can use a magnifying glass and a bright light to help spot them. Because head lice can move fast it may be easier to spot the nits. Nits can look like dandruff, but you can identify them by picking up a strand of hair close to the scalp and pulling your fingernail across the area where you suspect a nit. Dandruff will come off easily, but nits will stay firmly attached to the hair, Brown explains.

FDA-approved treatments for head lice include both over-the-counter (OTC) and prescription drugs, such as Nix and Rid, in the form of shampoos, creams and lotions. “Many head lice products are not for use in children under the age of 2, so read the label carefully before using a product to make sure it is safe to use on your child,” Brown says.

Although OTC drugs are available for treatment of head lice, Brown says your health care professional may prescribe drugs recently approved by the FDA, such as Ulesfia (approved in 2009), Natroba (approved in 2011) or Sklice (approved in 2012).

Steps for Safe Use

Follow these steps to use any head lice treatment safely and appropriately:

- After rinsing the product from the hair and scalp, use a fine-toothed comb or special “nit comb” to remove dead lice and nits.

- Apply the product only to the scalp and the hair attached to the scalp—not to other body hair.
- Before treating young children, talk with the child’s doctor or your pharmacist for recommended treatments based on a child’s age and weight.
- Use medication exactly as directed on the label and never more often than directed unless advised by your health care professional.
- Use treatments on children only under the direct supervision of an adult.


Heading Off Head Lice

- Teach children to avoid head-to-head contact during play and other activities at home, school, and elsewhere (sports activities, playgrounds, slumber parties, and camps).
- Teach children not to share clothing and supplies, such as hats, scarves, helmets, sports uniforms, towels, combs, brushes, bandanas, hair ties, and headphones.
- Disinfest combs and brushes used by a person with head lice 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 a person with head lice.
- Clean items that have been in contact with the head of a person with lice in the 48 hours before

treatment. Machine wash and dry clothing, bed linens, and other items using hot water (130°F) and a high heat drying cycle. Clothing and items that are not washable can be dry-cleaned or sealed in a plastic bag and stored for two weeks.

- Vacuum the floor and furniture, particularly where the person with lice sat or lay. Head lice survive less than one or two days if they fall off the scalp and cannot feed.
- Do not use insecticide sprays or fogs; they are not necessary to control head lice and can be toxic if inhaled or absorbed through the skin.
- After finishing treatment with lice medication, check everyone in your family for lice after one week. If live lice are found, contact your health care professional. **FDA**

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- Head lice infestations are not related to personal or environmental cleanliness, nor to poor living conditions.^{2,4} Head lice prefer a clean, healthy host and most often infest people with good hygiene and grooming habits.²

THE LIFE OF A HEAD LOUSE

- Adult lice are 2 to 3 mm long, about the size of a sesame seed.⁷ They can be pale gray, tan, red (after eating),^{1,7} or similar in color to the patient's hair because lice tend to adapt to their surroundings.^{2,8}
- Adult lice feed every few hours by piercing the skin of the scalp and injecting saliva containing an anticoagulant and vasodilator to facilitate blood flow.^{1,7} Newly hatched nymphs must feed soon after hatching and after molting.² Lice usually survive less than a day away from the host at room temperature.⁷
- Louse eggs (nits) hatch 7 to 12 days after they are laid and become adult lice 9 to 12 days after hatching (see figure below).⁷ Adults live for up to 30 days.²

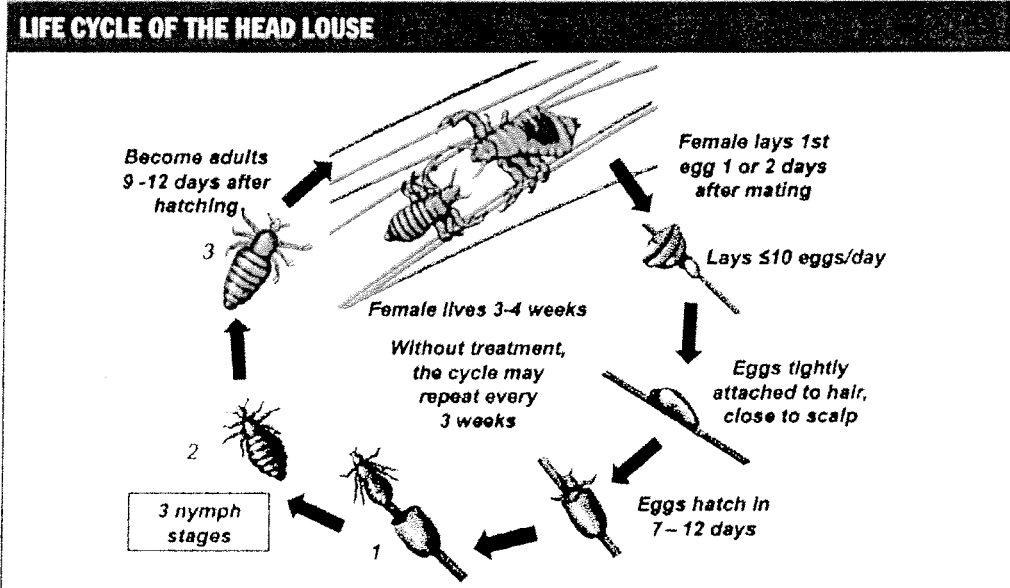


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SYMPTOMS AND POSSIBLE COMPLICATIONS OF INFESTATION

- After an initial infestation, symptoms may develop in 4 to 6 weeks—the time it takes for a delayed hypersensitivity reaction to occur—or not at all.^{2,7} Subsequent infestations can produce symptoms in 48 hours or less.²
- Intense itching at bite sites, caused by a reaction to louse saliva, is the most common symptom of infestation.² Some patients report a tickling sensation as if something were moving through the hair.⁹
- Linear excoriation at the edges of hairy areas, erythema, and scaling may be visible, as well as sores caused by scratching.^{2,9}
- Sleeplessness and irritability may occur because lice are most active at night.^{2,9}
- Skin excoriated from scratching can occasionally lead to secondary bacterial infection or chronic scalp pyoderma.^{1,2}
- Lymphadenopathy, low-grade fever, and (rarely) anemia may occur.²

REFERENCES: See Reference Card

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- The NASN states that management of head lice infestation should not disrupt the educational process, noting that no disease is associated with head lice and that the risk of transmission within the school setting is considered low.^{3,7}
- Children found with live head lice should remain in class but be discouraged from head contact with other children. The school nurse should contact parents at the end of the school day to discuss treating the child.⁷
- Treatment recommendations for pediculosis should be guided by evidence-based literature from public health, medical, and nursing content experts rather than anecdotal reports or commercial advertisements.⁷

NO-NIT POLICIES

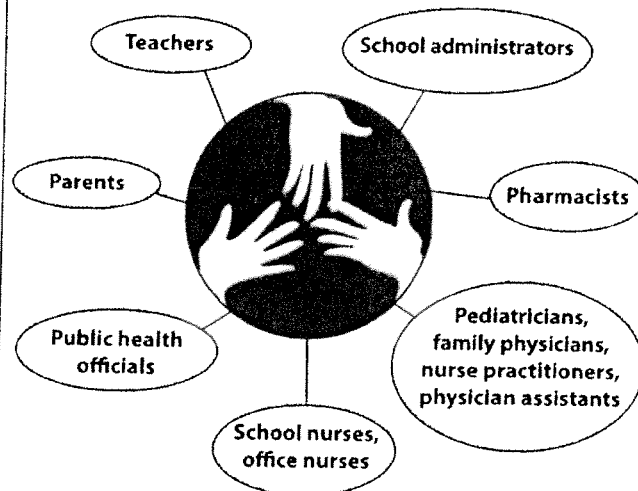
- The NASN takes a strong position against no-nit policies,⁷ which many schools still abide by. Students with nits only should not be excluded from school. Further monitoring for signs of reinfestation is appropriate.⁷
- The AAP and CDC also firmly oppose no-nit policies.^{3,6} An incorrect diagnosis of nits is common, the CDC says. In addition, many nits are not viable and are unlikely to hatch or to pose a risk of transmission to others. The burden of absenteeism on students, families, and communities "far outweighs the risks associated with head lice," the CDC says.⁶
 - Other organizations also oppose no-nit policies, including the American School Health Association, which notes that such policies and practices are ineffective at controlling lice outbreaks and may disrupt the educational process.⁸

PARTNERS IN THE PROCESS

■ Head lice infestation is a community problem. Successfully addressing it requires stakeholders to adopt a coordinated approach to education and management, such as community-based and school-based educational programs to reduce the stigma of infestation.^{1,9-11}

■ Those with a vested interest in appropriate management of head lice include parents, teachers, school nurses, school administrators, public health officials, office nurses, nurse practitioners, pharmacists, pediatricians, family physicians, and other primary care clinicians (**Figure**).

THE PROBLEM OF HEAD LICE CAN BE MANAGED COLLABORATIVELY



■ Opportunities exist to build new partnerships with colleagues to address policies for dealing with infestations and to increase referrals to health care professionals for safe and effective treatment.

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5. COMMUNICATING WITH FAMILIES

IMPORTANCE OF EMOTIONAL SUPPORT

- Head lice infestations can take a psychological toll on parents, who often feel stigmatized and ostracized.^{1,2} Children may also experience significant stress.²
- Health care providers can help establish a supportive relationship, prevent stigmatization, maintain privacy and confidentiality, and provide ongoing support and reassurance.³⁻⁶ This is particularly true in cases where reinfestation occurs.

IMPORTANCE OF EDUCATION

- Parents need education about head lice infestations to:
 - Make them aware of all the available treatment options, both OTC and prescription products.
 - Correct misinformation and misperceptions, such as the myths listed in the box below.

COMMON MYTHS ABOUT HEAD LICE

Myth: Head lice transmit disease.

Fact: Unlike body lice, head lice are not known to transmit disease.

Myth: Head lice infestations occur among people in the lower social and economic classes.

Fact: Infestations occur in all socioeconomic classes.

Myth: Only people who have poor hygiene get head lice.

Fact: Head lice are not a reflection of poor hygiene or a dirty environment. In fact, they prefer a clean, healthy host.

Myth: Head lice can fly or jump from one person to another.

Fact: Lice have no wings and cannot jump. They crawl. The only way they spread person to person is by direct contact with the head.

Myth: Dogs, cats, and other animals can transmit head lice to humans.

Fact: Lice are species-specific; human lice cannot be transmitted from animals.

INFORMATION TO COMMUNICATE TO FAMILIES

Here are some questions that families often ask and what you can tell them:

Q. What are head lice?

A. Head lice are small insects, about the size of a sesame seed, that live on the head. While there, they feed on small amounts of blood every few hours and lay eggs that can hatch, but they do not transmit disease.⁶ Head lice and eggs are usually found close to the scalp, especially around the ears and the back of the neck.

Q. How do head lice spread?

A. Primarily by head-to-head contact with an infested person; in the case of children, during play at home, camp, school, or other venues (eg, sporting activities). Lice can also spread, though less often, by sharing personal items such as hats, scarves, brushes, combs, or pillows.⁷

Q. Who gets head lice?

A. Just about anyone. Lice infest people of both sexes and all ages. Head lice are not associated with poor personal hygiene or a dirty environment. Children are more likely to get head lice because they spend a lot of time in close contact with other children.^{7,8}

2. MAKING THE DIAGNOSIS

HOW TO LOOK, AND WHAT TO LOOK FOR

- Head lice infestations are diagnosed by careful visual inspection of the hair and scalp.¹
- Proper equipment:
 - A good light and a X10 magnifying glass.²
 - A dermatoscope or an otoscope without a speculum.
 - A louse (nit) comb to increase the speed and efficiency of diagnosis.³
 - A lubricant such as water, oil, or hair conditioner (may help by slowing down crawling lice and eliminating static electricity).³

- Finding a live louse or nymph provides a definitive diagnosis but can be difficult; lice are hard to see because they are so small, move quickly, and avoid light.¹

- Viable lice that have fallen from the scalp may be visible if hair is combed over a sheet of white paper.

- Nits firmly attached to hair shafts close to the scalp—within 1 cm, according to American Academy of Pediatrics (AAP) head lice guidelines,³ or ¼ inch (~0.6 cm) according to Centers for Disease Control and Prevention (CDC) guidelines¹—suggest, but do not confirm, the diagnosis.

- Nits farther than that distance from the scalp are usually hatched or dead,^{1,3} although in warmer climates viable nits may be seen as far as several inches from the base of the hair shaft.⁴

- If no live nymphs and adults are visible and the only nits are more than ¼ inch from the scalp, the infestation is likely no longer active and does not require treatment, according to CDC guidelines.¹

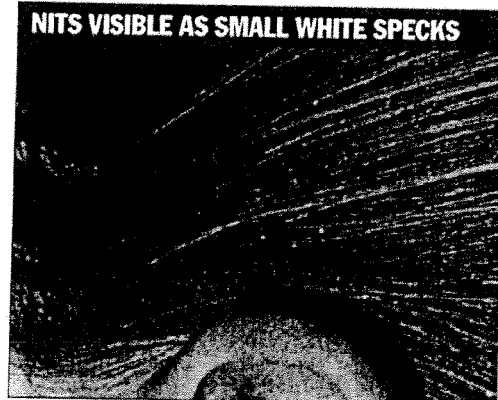
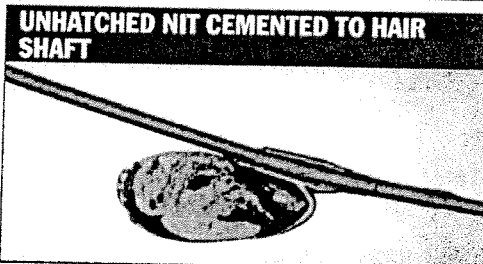
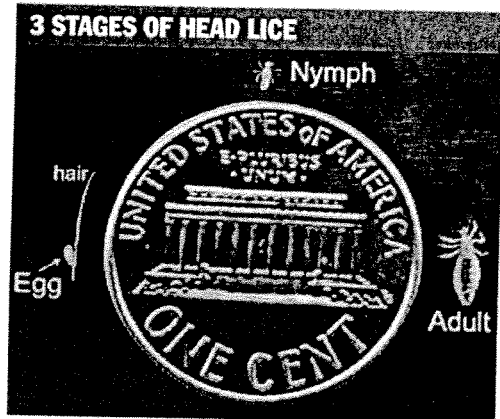
- Newly laid or viable intact nits may be tan, coffee-colored, or darker.⁵ White or sandy-colored nits are usually empty shells of hatched nits.⁵

- Nits are often easier to see on the hair behind the ears or back of the neck.³

- Brown, scaly fecal matter of head lice is another sign of infestation.

MISDIAGNOSIS

- Because itching—the most common symptom of infestation—is characteristic of many different dermatologic conditions, infestations are often misdiagnosed, leading to overtreatment or ineffective treatment. Nits can be confused with dandruff,



Centers for Disease Control and Prevention (CDC)

CDC/Dr. Dennis D. Juranek

Dr. Chris Hale/Photo Researchers Inc.

hair spray or gel droplets, dirt particles, scabs, hair casts (desquamated epithelial cells surrounding the hair shaft), fibers, and other insects.¹⁻³

– Unlike nits, hair casts and residue from hair gels and sprays slide easily off the hair.^{2,6}

- Skin conditions such as contact or seborrheic dermatitis, insect bites, eczema, psoriasis, and piedra (a yeast infection of the hair) can be mistaken for pediculosis,² as can scabies infestations.

WHO TO SCREEN

- When an active infestation is diagnosed in an individual, all household members and other close contacts should be screened for head lice.⁷

THE PSYCHOSOCIAL IMPACT OF HEAD LICE

- Head lice infestation confers a social stigma.⁸ It is often—mistakenly—associated with lack of cleanliness, poverty, or poor parenting.⁹

- Most people have strong negative reactions to a diagnosis of head lice, including disgust, horror, embarrassment, anxiety, anger, frustration, and guilt.⁸

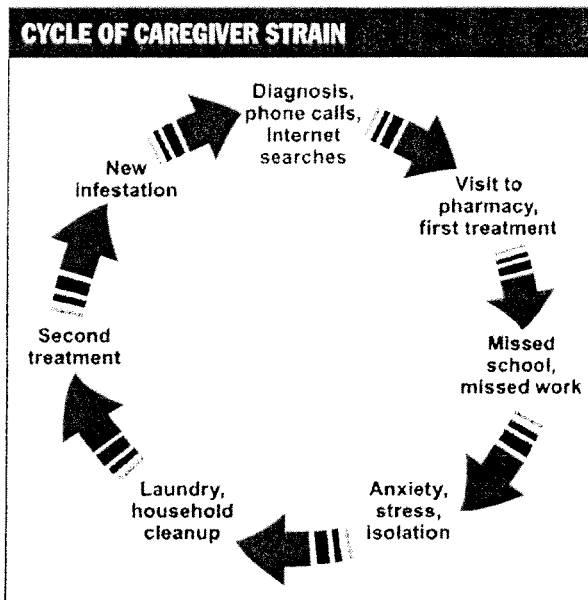
- Caregivers may feel stressed, ostracized, and isolated.⁹

– Children may miss weeks of school during treatment, especially if the school has a “no nit” policy prohibiting children from returning until they are free of nits.^{3,9}

– Dealing with persistent or repeated infections can lead to an enduring cycle of caregiver strain (Figure).⁹

– Caregivers have reported experiencing stress as soon as an infestation is diagnosed, continuing throughout treatment and long after the infestation is over.⁹

– Study results have suggested that infested children, like their caregivers, experience significant strain.⁹



THE ECONOMIC IMPACT OF HEAD LICE

- Reports have estimated the annual costs of head lice infestation in the US to be \$1 billion,¹⁰ but the actual figure may be much higher. Infestations may be significantly underreported because they often are not diagnosed or treated in the health care system.¹⁰

- Direct and indirect costs include, among other things, head lice treatments, medical office visits, school monitoring and education programs, lost wages or child care expenses for parents when their child is barred from school, and loss of state funds for children absent from school.¹⁰

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3. TREATMENT OPTIONS

The Centers for Disease Control and Prevention (CDC) recommends treatment for persons with an active head lice infestation. The health care provider should check all household members and other close contacts and treat if active infestation is found.¹ Some experts recommend prophylactic treatment for persons who share a bed with an actively infested individual.¹

FDA-APPROVED MEDICATIONS

■ The drugs approved by the Food and Drug Administration (FDA) to treat head lice are insecticides and can be dangerous if misused or overused.¹ Practitioners should familiarize themselves with each product's indications, contraindications, adverse effects, and warnings as stated in the product package. Manufacturers' instructions regarding the need to avoid eye contact should be reviewed closely before product use. Parents should also understand that skin irritation is possible.

■ **Over-the-counter (OTC) products**—plant-based insecticides (pyrethrins) and synthetic chemical insecticides (pyrethroids)—are popular choices. Consumers are familiar with these products and can readily obtain them at pharmacies. Both types of OTC pediculicides are recommended for use by the American Academy of Pediatrics (AAP) unless resistance of lice in the community has been noted.² The efficacy of OTC products, while varying geographically, has decreased substantially over the years; some studies have shown efficacy to be less than 50%.^{3,4} The ready availability of OTC pediculicides may contribute to the development of resistance.

– One OTC product is approved for use in infants as young as 2 months of age.

■ **Prescription medications** for the treatment of head lice include 3 pediculicides approved by the FDA since 2009 and 2 older products, which have been around for decades. Application times on the hair and scalp vary from as little as 4 minutes to as long as 12 hours. Treatment may be indicated for 1 time only or may need to be repeated a week or so after initial use.

– Some prescription products are approved for use in infants beginning at 6 months of age.

OTHER TREATMENT APPROACHES

■ **Home remedies** include occlusive agents such as petroleum jelly, mayonnaise, and tub margarine, and “natural” products such as essential oils. Although widely used, these products are not approved by the FDA for the treatment of head lice and do not have to meet safety and efficacy standards comparable to those established for pharmaceutical products.²

■ **Manual removal** of lice or nits, with or without a nit comb, is a lengthy and tedious process that is usually not completely effective at eliminating infestations when done by someone other than a trained professional.⁵

– Some consumers apply various products to the hair in an attempt to loosen nits from the hair shaft to facilitate their removal, but there are no clinical data to support this practice.

– Nit-picking salons have become popular in parts of the US. They advertise a “chemical-free” approach to lice and nit removal, typically charging around \$100 per hour for a “comb out.”^{6,7} This emerging industry is unregulated and the quality of service varies.

– Shaving the head effectively removes lice and eggs, but parents and children may find this approach distressing, and it is generally not recommended.²

■ **Hot air treatment** with a commercial machine can be used to desiccate lice with a 30-minute application of air and is employed by some nit-picking salons.^{2,8}