



Lice update: New solutions to an old problem



Lisa Wadowski, BS^a, Lily Balasuriya, MS, PA-C^a, Harper N. Price, MD^b,
 Judith O'Haver, PhD, RN, CPNP-PC^{b,*}

^aUniversity of Arizona, College of Medicine, 550 E. Van Buren St., Phoenix, AZ, 85004

^bPhoenix Children's Hospital, Department of dermatology, 1919 E Thomas Road, Phoenix, AZ, 85016

Abstract An estimated 6 to 12 million children are affected by lice annually in the United States.¹ Knowledge of the various treatment options for this diagnosis is essential. This paper aims to provide an overview of the myriad therapeutic options available for lice infestations in children. U.S. Food and Drug Administration–approved drugs, off-label drug therapies, over-the-counter-products, and herbal remedies are all discussed in detail. Clinicians may use this information to teach patients and families about the latest available care for the eradication of head lice in pediatric patients.

© 2015 Elsevier Inc. All rights reserved.

Pathophysiology and life cycle

Pediculosis humanus capitis (head lice) is a common infestation seen in pediatric patients aged 3 to 11 years. Estimates suggest lice affects 6 to 12 million children in the United States annually.¹ Children in this age group are more likely to contract lice because they have a higher incidence of head-to-head contact with other children as well as frequent sharing of combs, brushes, hats, and other headgear. Head-to-head contact with an infected person for repeated and prolonged periods is considered to be the most common route of transmission.² School-aged children have a high incidence of infection spread due to the high number of contact exposures.³ Reports suggest school-aged girls have prolonged and closer head contact with one another compared with school-aged boys.⁴ The spatial relationship of the head lice has also been positively associated with transmission rate of head lice. More densely populated municipalities and households with more family members have a significantly higher prevalence of head lice.⁵ This spatial factor may

account for the higher prevalence in school-aged children and girls. The head louse infecting children in the United States varies according to race, with infestation typically less common among African-Americans. This is likely due to the ability of the louse to grasp the width of certain hair types over others.¹ (See [Table 1](#).)

Lice are ectoparasites that utilize humans as hosts for survival.¹ There are three phases that comprise the life cycle of the louse. Adult females lay their eggs (nits) at the base of the hair shaft, which is key to their survival, because they must stay warm in order to hatch.⁶ Generally, most nits are located approximately 6 mm from the scalp and hatch in 6 to 9 days.¹ In warmer climates, nits can be found at greater distances from the scalp and often favor the nape of the neck.⁷ The egg hatches and releases a nymph, which progresses through three molts before becoming an adult (7 days after initial hatching). The mature adult louse is tan to grayish-white in color, has six legs, and is approximately the size of a sesame seed.¹ Females will typically be larger than males, lay up to eight eggs per day, and can reproduce for 2 to 3 weeks.^{1,6} Adult lice can survive with a human host for up to 30 days. They are obligate human parasites and rarely live for longer than 36 hours without a host^{1,6–8}; however,

* Corresponding author. Tel.: +1 602 933 0626.

E-mail address: johaver@phoenixchildrens.com (J. O'Haver).

Table 1 Comparison of therapies for the treatment of head lice

	Over the Counter (OTC)/Rx	Cost	Side effects	FDA approval	Age range
Benzyl alcohol (Ulesfia™)	Rx	5% lotion (227 g) \$81.58	Common reactions: 1. Pruritus 2. Erythema 3. Pyoderma 4. Ocular irritation 5. Application site irritation 6. Application site anesthesia/hypoesthesia	4/9/09	6 mos and older
Ivermectin topical (Sklice™)	Rx	0.5% lotion (117 g) \$309.46	Common reactions: 1. Conjunctivitis 2. Ocular hyperemia 3. Ocular irritation 4. Seborrhea 5. Xeroderma	2/7/12	6 mos and older
Malathion (Ovide™)	Rx	0.5% lotion (1 bottle of lotion, 59 mL): \$189.99	Serious reactions: 1. Second-degree burn Common reactions: 1. Skin irritation 2. Scalp irritation 3. Eye irritation	Malathion 3/6/09 Ovide 8/2/82	Tolerability and effectiveness in children < 6 yrs not established
Permethrin (Nix™)	OTC	Lotion 1% (59 mL) \$8.19	Common reactions: 1. Burning 2. Pruritus 3. Erythema 4. Numbness/tingling	5/2/90	Contraindicated in children < 2 mos
Pyrethrum (equivalent to pyrethrins 0.33%); piperonyl butoxide 4% (Rid™)	OTC	Aerosol 0.4% (150 mL) \$4.55 Liquid 0.33-4% (59 mL) \$4.06 Shampoo 0.33-4% (120 mL) \$5.41	Common reactions: 1. Irritation 2. Contact dermatitis	3/7/00	FDA approved in children ≥ 2 yrs
Lindane (Kwell™)	Rx	Aerosol 0.4% (150 mL) \$4.55 Liquid 0.33-4% (59 mL) \$4.06 Shampoo 0.33-4% (120 mL) \$5.41	Serious reactions: 1. Neurotoxicity 2. Seizures 3. Death Common reactions: 1. Dizziness 2. Dermatitis 3. Alopecia 4. Headache 5. Pain	12/17/81	Contraindicated for use in neonates. Should be used with extreme caution in children/individuals weighing < 50 kg (110 lbs)
Spinosad (Natroba™)	Rx	Suspension 0.9% (120 mL) \$195.42	Serious reactions: 1. Neonatal gasping syndrome Common reactions: 1. Application site erythema 2. Ocular irritation 3. Irritation at application site	1/18/11	Patients ≥ 4 yrs

warmer climates (82-90°F) and high humidity may allow nits to survive for up to 10 days away from a host.⁷ Lice are wingless and do not fly. They crawl for locomotion, traveling up to 23 cm per minute.⁹ The mouth of a louse is designed to pierce the skin and suck blood from the capillary of the host.⁹

Current treatment options for elimination of head lice include wet combing, topical pediculocides, and oral therapies. Consideration of treatment options should include the ovicidal and pediculocidal properties of the selected therapy. Ovicidal activity is established *in vitro* by using light

Download English Version:

<https://daneshyari.com/en/article/3194097>

Download Persian Version:

<https://daneshyari.com/article/3194097>

[Daneshyari.com](https://daneshyari.com)