

# Head Lice: A Human Nuisance

McKenzie Pediatrics

Head Lice is an infestation of human head louse, *Pediculus Humanus var. Capitis*. While poor hygiene certainly contributes to the likelihood of acquiring head lice, people at all levels of society can become infested.

Head lice infestations are usually just a nuisance. However, untreated infection can lead to spread, to poor sleep, and occasionally to secondary bacterial infections, notably with methicillin-resistant *Staphylococcus aureus* (MRSA). Social stigma, embarrassment, low self-esteem, and disgust often plague patients with head lice. Additionally, head lice infestations prevent school attendance, causing messed education, lost work for parents, and needless anxiety.

Within the past 20 years, head lice have developed resistance to nearly all of the usual treatments. But better understanding in recent years of the life cycle of the human louse is leading doctors to newer and more successful therapies.

The permethrins and pyrethrins are natural compounds originating from the *Chrysanthemum* plant that, when used against the human louse, paralyze the louse's nervous system, preventing it from feeding. The permethrins are incredibly safe, with only rare cases of asthma exacerbations noted in individuals with severe ragweed allergy.

The permethrins (Nix®/1% Permethrin, & Elimate®/5% Permethrin) and pyrethrins (Rid®/0.33% Pyrethrin) have long been effective against head lice, but in recent years the human louse has become increasingly resistant to them. Therefore many doctors are turning to different treatment options, such as Malathion (Ovide®/0.5% Malathion), a common pesticide that in dilute concentration is very effective against the human louse. No cases of resistance have yet been reported, and about 80% of patients are cured with a single application, with the remainder requiring a second application 7-9 days later.

Available over-the-counter in many countries, malathion treatment for head lice still requires a prescription in the United States. The FDA has extensively studied malathion, and found it to be very safe for use in children for head lice. Additionally, much unlike other lice treatments, its extremely unpleasant odor means that it is rarely ingested orally by small and curious children.

Even though the malathion currently manufactured for topical application is of significantly lower concentration than that used in agriculture, parents might be understandably nervous about applying a known pesticide to their child's head. For them, we suggest checking out some of the many alternative, non-pharmacologic therapies such as those outlined at such websites as: [www.headliceinfo.com](http://www.headliceinfo.com), [www.nuvoforheadlice.com](http://www.nuvoforheadlice.com), [www.licenders.com](http://www.licenders.com), and [www.nitmix.com](http://www.nitmix.com).

However, nonpharmacologic approaches involving occlusion therapy (olive oil, mayonnaise, petroleum jelly, butter) are seldom as effective as proponents promise. Lice do not have air sacs or lungs but, rather, obtain air by both diffusion and air in channels that tunnel throughout their bodies. When threatened by occlusion, lice can use spiracles to occlude air tunnels without suffocating, and can survive for prolonged periods without air. Successful suffocation requires blocking 100% of the louse's spiracles, which is difficult to do.

Complete hair removal (that is, shaving the head) has never been formally proven, but seems effective. Because the lice require hair shafts to lay eggs, removing the hair theoretically prevents the lice from propagating. However, the cosmetic result is less than pleasing for most school children.

Combing with a special fine-toothed comb, known as a lice or nit comb, has low cure rates when used as the only therapy for an infestation. Cure rates range from about 40-60%. Viable nits are well camouflaged and often so close to the scalp that a nit comb cannot effectively reach them. Furthermore, to be effective,

nit combing must be performed rigorously for many minutes over many days, which is not practical for most people. In other words, nit combing has some merit, but only when combined with other therapy.

Lice survival away from the scalp is about 6 to 26 hours. Therefore, upon discovery of a head lice infestation within a household, routine house cleaning, including vacuuming of floors and furniture, and laundering of bed linens, hats and clothing, is recommended. Hot water must be used to launder, and drying in a hot dryer is preferable to line-drying. All combs and brushes should be soaked in near-boiling water for at least 15 minutes. All pillows and stuffed animals that have come in contact with the infested person must be put into a garbage bag for 48 hours.

The primary method of spread is direct head-to-head contact. The prevention of new infestations and reinfestations must be considered as part of household head lice management. All household contacts must be closely inspected for nits and live lice, preferably when the hair is wet, and using a lice comb. Children must be told not to share hats, combs, and brushes now or in the future.

Please contact our office for any further questions, or if interested in being prescribed Ovide for your child's head lice.

**Please remember that head lice is not life-threatening, nor is it an after-hours emergency; please call us during regular clinic hours, or during the hours on weekends when local pharmacies are open.**

**Thank you.**