



Bug-Wise

No. 1

February, 2007

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Head Lice: When your child brings a note home from the teacher, or some other school official, it usually doesn't bear good news. The news that a child has head lice creates its own special kind of family 'excitement' and raises a lot of questions. How did she get them? Could the rest of the family have them? How do we get rid of them? She just spent the weekend with her cousins; could they have gotten them too? How will I tell my sister-in-law?

In his poem "To a Louse" the Scottish poet Robert Burns observed that head lice do not observe social boundaries. They are just as happy on the head of a 'fine lady' as they are on a beggar. The point being that there is no great shame in having head lice. Having head lice is not an indication of poor personal hygiene or sloppy housekeeping. The lice don't care whether you wash your hair once a day, once a month, or never. They don't care whether your home is filthy or immaculately clean. All that really matters to the lice is that you are alive, and thus have warm blood to feed on, and have hair. Head lice do have some preferences. African Americans are rarely infested; children are infested more often than adults, and girls are infested more often than boys.

People become infested with head lice when they come in close personal contact with someone who already has lice, or when they use an item, like a comb, hat, or coat, that was very recently worn, or used, by an infested person. More rarely, infestations can occur due to a louse crawling from the coat or hat of an infested person to another hanging nearby, and then onto the head of the new host. When a louse falls off a human head, it wants nothing more than to get back on a human head as quickly as possible. This is why head lice infestations are more common among school children. Children are more likely to come into close contact with one another while playing or share hats, combs, or other personal items.

Louse Biology: Female head lice use a strong glue to attach their white, oblong eggs to the base of a hair, next to the scalp. The eggs, known as nits, hatch in five to ten days. By this time the hair has grown and the egg is about ¼ inch away from the scalp. The empty eggshells remain tightly glued to the hair and continue to move further away from the scalp as the hair grows. This is an important point to keep in mind—nits that are more than ¼ inch away from the base of the hair have either hatched already or they are not going to hatch.

Nits hatch into young lice, known as nymphs, that look like small versions of adult lice. It takes about three weeks for the nymphs to develop into sexually mature adults, which are grey and about 1/10th inch long. Adult lice live three to four weeks. A female louse will lay 50 to 150 eggs during her life, and it takes about a month to complete one generation.

Head lice only live on people; they don't occur on pets, birds or other animals. Head lice prefer to stay on the head and rarely occur on other parts of the body, unless the infestation is so severe that they are overcrowded. There are other species of lice that do occur on other parts of the body, like body lice and pubic lice, but outbreaks of these species rarely occur in school situations.

Head lice need a constant supply of human blood and won't live more than one or two days if they fall off their host. Most will starve within 24 hours. Head lice are well designed for the life they lead. Each of their six legs ends in a strong, curved claw that allows them to cling tightly to human hair. They have sucking mouthparts that allow them to bite and extract blood. Their bites cause the itching and scratching that accompany a head lice infestation. Despite their blood-sucking life style, head lice do not transmit disease.

One point worth emphasizing is that most infestations begin with a single louse, and feeding by one louse usually does not create enough itching and discomfort to be recognized as a louse infestation. It usually takes several weeks from the time a person is initially infested for an infestation to become apparent. This means that if you discover a heavy infestation of head lice in your daughter's hair three days after the big church youth retreat, she did not get them there, though others may have become infested from contact with her.

Treating for Head Lice: Head lice live on people's heads, and that's where you need to concentrate treatment efforts. You don't have to have the house fogged, you don't have to have the carpet sprayed, and you don't have to worry about them being on the dogs, cats, hamsters, or birds.

The key point to keep in mind when trying to control head lice is that everyone in the family must be treated at the same time. Otherwise, they will just keep moving from one family member to another. This means checking every family member very carefully for the presence of lice or nits and treating everyone who is infested. The surest course of action is to just go ahead and treat everyone. If one or more family members are not treated--because they appear to be uninfested--keep checking them regularly as other family members go through the treatment procedure. Be sure to consult a physician before treating pregnant women or very young children.

There are two basic methods of controlling lice, physical removal and treatment with an approved insecticide. With the exception of completely shaving the head, neither of these methods will provide complete control every time. Consequently, the best approach is to combine the two methods. This will greatly improve the odds for success, but it will require a lot of time and effort.

Insecticidal Shampoos and Crème Rinses: Several crème rinse and shampoo products that contain approved louse insecticides are available 'over-the-counter'. These contain either permethrin or pyrethrins + piperonyl butoxide (See the following table for examples of products that contain these active ingredients). Of these two active ingredients, permethrin is generally the most effective and will provide up to 14 days of residual control against susceptible lice. Some populations of head lice have developed resistance to permethrin, and resistance seems to be becoming more common. Still, this is the most effective over-the-counter treatment available and it usually gives control when used properly and supplemented by physical removal. Be sure to read and follow label directions.

Examples of Over the Counter Head Lice Treatments ¹

| Active Ingredient | Brand Name (examples) |
|---|---|
| Permethrin 1% | Nix Crème Rinse |
| | Walgreen's Lice Treatment |
| Pyrethrins 0.33% + piperonyl butoxide 4% | Rid Lice Killing Shampoo |
| | Pronto Plus Lice Killing Mousse Shampoo |
| | Walgreen's Stop Lice Lice Killing Shampoo |

¹Read and follow label directions.

Physical Removal: Physical removal involves using a special ‘nit comb’ to systematically go through the hair and remove live lice and nits. This is a tedious, time-consuming process, but it is a key step in treating head lice. You can buy nit combs at pharmacies; they come with detailed instruction on how to use them most effectively. Read these instructions carefully. It is important that the person using the comb is able to see well and that they work in good light. It is important to be methodical, thorough, and persistent. Physical removal controls lice that may otherwise survive because of insecticide resistance. Some companies sell products intended to make it easier to comb lice and nits from the hair.

The instructions that accompany the nit comb should tell you how to comb out the lice without allowing them to spread. Generally, the best approach is to have the person sit in a non-upholstered chair in the center of a non-carpeted floor. Place a towel around the neck and shoulders of the person before beginning. Remove the towel and place in a plastic bag, or directly into the washing machine, as soon as you finish. Use a clean towel for the next person. Use a napkin or paper towel moistened with rubbing alcohol to remove and kill any lice found on the comb. A cotton swab dipped in alcohol can be used to isolate and kill lice crawling on the scalp. Keep a small bowl of rubbing alcohol at hand to drop live lice in or to dip the comb and wash off live lice. Lice cling tightly to human hair. Tweezers come in handy.

Lice on other objects: Lice don’t survive long if they are not on a human head. If a louse falls onto the floor, the chances of it making its way back onto someone’s head before it starves are extremely small. Focus your efforts on items that have been in direct contact with the head of an infested person within the last 48 hours—things like pillowcases, bed sheets, towels, stuffed animals, hats, coats, combs, and hairbrushes. These do need to be disinfested. Washable fabric, like sheets and towels, can be washed in hot water and tumble dried. Many combs and hairbrushes can be disinfested by washing in hot water. The easiest way to disinfest non-washable items, like stuffed animals, wooden hairbrushes, upholstered pillows, etc is to simply seal them in a plastic bag for two weeks.

Head Lice Treatment Steps: The “Ten Steps” listed on the following page provide a general outline of the actions you need to take to control head lice. This assumes that you are dealing with a first time infestation, have no strong reason to suspect that you are dealing with lice that are resistant to the over-the-counter insecticide products, and have no objection to using the over-the-counter insecticides. If you are dealing with a recurring infestation or have concerns about the safety of the over-the-counter products, consult a physician or other appropriate health care official.

When using any lice control product, be sure to read the label at least twice—once before you buy it and again before you use it. Be sure you fully understand how to use the product safely and effectively. Pay particular attention to restrictions on minimum age or weight of individuals that may be treated, length of time to apply the product, number of days between treatments, and other safety related information.

This information is for educational and preliminary planning purposes only. Be sure to read and carefully follow label directions for any lice control product that you choose to use.

We thank Dr. Jerome Goddard, State Entomologist with the Mississippi Department of Health, for his input and suggestions.

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Ten Steps for Treating Head Lice

- 1} Carefully check every family member for lice. Consider them infested if you find one or more lice or nits. Be sure you know what you are looking for--and what you're looking at. Use a magnifying glass if necessary. At this point, before any treatments have been applied, you should consider a person infested even if the nits are more than ¼ inch away from the scalp. Be sure to check carefully behind and over the ears and the back of the head and neck.
- 2} Notify school officials, as well as friends and family members who may have been exposed to infested persons. Granted this may be the most difficult step in the whole process, but it is important to break the cycle of infestation and reinfestation. You don't want your daughter to get reinfested the next time she stays overnight at little Jill's house.
- 3} Go to your local pharmacy and purchase one of the over-the-counter lice treatments. These are sold as shampoos or crème rinses that contain either permethrin or pyrethrins + piperonyl butoxide. Also purchase a nit comb. These products are often available in kits that contain a comb or combs and the lice treatment. Carefully read the instructions for use of the lice treatment and the comb. Be sure you thoroughly understand the instructions before proceeding with treatment. Be sure to purchase enough product to treat all family members who need treatment. Plan on treating twice.
- 4} Treat all infested family members with the lice shampoo or crème rinse. Follow label directions carefully. Comb dead lice and nits from the hair as instructed. Do not wash hair again for at least two days following the treatment.
- 5} Change bed linens and pillowcases and launder in hot water. Disinfest personal items such as combs, brushes, etc by washing in hot water (130 degrees). Items that can't be washed, such as stuffed animals that a child routinely sleeps with, upholstered pillows, hats, coats, hairbrushes, etc can be disinfested by having them dry cleaned, if appropriate, or by placing in a plastic bag for two weeks. Vacuum sofas and chairs, especially the areas where infested persons may have recently rested their head.
- 6} Beginning two days after treatment, use the nit comb to carefully and methodically check family members for surviving lice and nits. Remove as many lice and nits as you can, but keep in mind that nits more than ¼ inch away from the scalp have either already hatched or are not going to hatch. Several companies sell products intended to make it easier to comb lice and nits from the hair. Continue to use the nit comb every day or two for the next five to seven days, checking methodically for live lice and removing any you find.
- 7} Treat again seven to ten days after the first treatment. This second treatment is to kill any newly hatched nymphs before they mature and are able to begin laying eggs. Be sure to check the label of the product you are using to see how many days must elapse between treatments. Don't retreat sooner than the label allows.
- 8} Beginning two days after the second treatment, use the nit comb to methodically check family members for surviving lice and nits. By this point you hopefully will not find any live lice, but continue to comb and check hair every day or two for the next five to seven days, removing and destroying any lice you find. If you do not find any live lice, or nits less than ¼ inch from the scalp, during this time, go to step 10.
- 9} If you continue to find live lice, or nits less than ¼ inch away from the scalp, following the second treatment, it may be time to change your approach. If you have only found a very few lice, treat a third time--after waiting the required number of days since the second treatment--and intensify your combing effort for another seven days or so. Be sure the product label allows a third treatment. But if you are still finding lots of live lice, your treatment is not working. Treatment failure may be due to failure to follow treatment directions, reinfestation, insecticide resistance or a combination of reasons. Consult a physician, tell them what you have done, and follow the course of action they suggest. Physicians have access to alternative treatments that are effective against permethrin resistant lice. Do not continue to retreat with the same product that you have been using. Control will not improve if resistance is the problem.
- 10} Check all family members again in another seven to ten days. If you find no live lice, or nits less than ¼ inch from the scalp, at this point, you can consider your treatment efforts successful, but you may want to check again in another week or two, just to be sure.