

Lice Times Are Not Nice Times

Here we go again. New clothes, backpack, pencils, notebooks, and daily lice checks - all part of the Fall back to school ritual. Head lice are a common worldwide nuisance particularly for children 5 to 10 years of age. They do not carry disease, maim, or kill. They do however bring on a great deal of anxiety and let's face it, we all itch just thinking about them. They also produce a very lucrative market for treatment and treatment services. But is it all necessary?

I started to panic last fall when it appeared as if there were daily backpack lice notices. I know this was an over-exaggeration on my part but each notice only served to fuel my anxiety. I wanted it all, mandated head checks, chemical treatments, and the number for a service to it all for me. What was missing was a means to ensure we'd never get it. So I started my Google search looking for answers and more importantly, clinical data to better understand head lice prevention and ultimately, its treatment. Most of the clinical data I uncovered was from Australia. Here's what I learned.

Head lice are a worldwide nuisance. It is common in countries such as England, Australia, Canada, Germany, Argentina, India and Brazil to name a few. It affects everyone regardless of class and social status. Head lice are not related to cleanliness of the person or their environment. In fact, they have a greater affinity for squeaky clean hair. It is present seasonally in many countries when temperatures are right (75-85°F). In the US Northeast, it is most prevalent in late summer and early fall.

The most crucial part of a lice-removal program is thorough combing. Without combing, no treatment works with 100% effectiveness.

First Things First

- There are 3 types of human lice: Head Lice, Body Lice and Pubic Lice. All are different; only head lice are addressed here.
 - The life cycle of the human head louse has 3 stages: Egg, Nymph and Adult.
 - Louse eggs are known as nits (hence the term nit-picking).
 - Nits are cemented to the hair shaft close to the scalp (within $\frac{1}{4}$ " because they need temperatures above 68 degrees to hatch). You cannot scrape an egg off the hair shaft. If what you think is an egg is easily removed, it's most likely dandruff.
 - The incubation period of the egg, which fluctuates with temperature, is about 7-10 days.
 - The egg hatches to produce the nymph. Nymphs mature after 3 molts (think caterpillars) which takes 7-10 days.
 - The adult louse feeds on blood, mates (it takes two), lays eggs and dies. It has a lifespan of about 30 days.
- ⋈ If you miss a few during treatment, recurrence is bound to occur.

Facts

- Human head lice do not carry disease (hence they are not considered a health hazard by the CDC).

- Human head lice are parasites that feed off of the hosts' blood and live on their hosts head for their entire lives.
- They do not jump, hop or fly. They crawl, very quickly grasping hair shafts as they go along (think Tarzan swinging from vine to vine). Their claws are designed to attach to hair shafts not furniture.
- Not all hair shafts are created equal. Certain types of hair appear less likely to have lice infestations. In addition, it's harder for nits to attach to oily hair (hence all of the "oil" containing preventative treatments). Clean hair is at more of a risk for infestation so you may want to consider lesser frequency of shampooing.
- Lice are transmitted by direct contact. Hats, scarves, combs can be sources of transfer however conditions must be right. Although possible, the number of transmissions occurring from carpet to human is negligible. Lice can only survive a short time without food and heat.
- Most head lice products are pesticides that are potentially dangerous to young children and those administering treatment. Misuse can cause serious side-effects and overuse has resulted in chemical resistant lice.
- Many "home remedies" are toxic and/or dangerous. Mineral oil or rubbing alcohol to name two. Remember, even water, when present in too high of a concentration, can be toxic to the human body.
- Look for lice and lice eggs in the hot spots - behind the ears, the crown of the head and at the nape of the neck.

Myths busted

- It's almost impossible to drown lice and extremely difficult to suffocate lice. Head lice breathe through small openings along their abdomens called spiracles (a nit exchanges oxygen through its operculum). These openings close immediately upon contact with water and can remain closed for up to eight hours with no ill affect on the louse.
- Dogs, cats, and other pets do not play a role in the transmission of human lice.
- Head lice are not living in your home, on your furniture or in your bedding. They prefer to be on your head. Studies done on the carpets in schools during peak season found no living lice. Lice will die within few hours when not on the human head. Laundering sheets in hot water and drying on high heat will kill the few that may fall off. Most transmissions are head to head.
- Chemical treatments alone are not 100% effective at killing lice.

No product currently marketed will effectively kill all nits and lice with one treatment (all products require a second treatment and combing!!!). If you don't do a good job combing and retreat at least once within 7 to 10 days, the life cycle will not be broken. Ideally, it is recommended that you comb every day following the first treatment until no evidence of nits or lice are present and then retreat 7-10 days after the first treatment. But you also need to repeat the combing process. And since it takes 7-10 days for a nit to hatch and 7-10 days for the nymph to mature, it would seem logical that one should comb at least once a week for at least 3 consecutive weeks in order to disrupt the lice life cycle.

Whether there is an active case of head lice or if you just want to sleep better, all you really need in your arsenal is a bottle of conditioner, a regular comb, a lice comb, a box of

tissues and a plastic zipper seal bag. An easy way to find and remove lice is to use conditioner (white provides a better contrast) and a lice comb. Conditioner will slow the lice down while you comb and is not detrimental to your health. Regular combing (combing weekly during the season) will help minimize the severity and incidence of lice outbreaks. And I promise you will sleep better.

The Process (Comb Baby Comb)

You can control lice simple by coming on a regular basis. There are many references for this simple procedure. Here's one, www.jcu.edu.au/school/phtm/PHTM/hlice/conditioner-sheet.pdf.

- Apply a liberal amount of conditioner to the entire head of hair
- Comb through the hair with a regular comb to remove all tangles.
- Section off the hair and comb through with a lice comb.
- Place the lice comb against the scalp (remember eggs are within $\frac{1}{4}$ " from the scalp) and comb all the way through to the end of the hair. A lice comb will get nits, nymphs and adults, if present.
- After each pull through of the comb, wipe the comb on a tissue or paper towel. Lice should be visible.
- Place used tissues into a plastic bag.
- Repeat combing the remainder of the hair.
- You may want to repeat the process if evidence of lice were found.
- It gets easier with practice.

Buyer Beware

- A lice remedy purports to kill lice without combing. It contains Natrum Muriaticum - a homeopathic remedy commonly known as table salt!
- Enzyme solutions break the exoskeleton of nits before they fully mature. Enzymes used in enzyme-based lice shampoos are considered proprietary and are not specified on the label nor are they regulated by the FDA. One patent I found listed Papain (from papayas) as an example of an enzyme for treating lice. Due to serious side-effects (hypotension and tachycardia), the FDA ordered companies in November 2008 to stop marketing products containing papain in topical preparations.

Up and Coming (but don't throw your combs away just yet)

- Ivermectin (an anti-parasitic used for horses and dogs) is being studied as a possible oral treatment for scabies and lice in humans. Some serious study side-effects have been noted in the scabies clinical studies.
- Ulesfia (5% benzyl alcohol) will be available by prescription in 3Q2009. It's a water soluble gel that works to suffocate lice. I was not able to find data on how effective it is on nits.