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Tiny yet tremendous critters: Head Lice

DON'T PANIC! IT CAN HAPPEN TO ANYONE, AND YOU CAN DITCH THE ITCH!!!

The head louse, *Pediculus humanus capitis*, is tiny insect that causes tremendous problems, e.g. irritation, scratching, sleepless nights, and subsequent secondary infection. Pediculosis, or "lousiness", is one of the most prevalent communicable conditions in the United States. Head lice can infest people of all ages, but children are prone to infestations due to their play activity and close contact. According to the [Centers for Disease Control and Prevention \(CDC\)](#), "an estimated 6 million to 12 million infestations occur each year in the United States among children 3 to 11 years of age."



Head louse
Pediculus humanus capitis
DaniBarchana, Bugwood.org

In fact, the problem of head lice can be so rampant among preschool and school-aged children that often schools must work in conjunction with many families to control an infestation. Back-to-school seems to be when lice are most commonly transmitted, resulting in widespread infestations by December. With September being National Head Lice Prevention Month, we are encouraging parents, teachers, and childcare professionals to be aware of this "lousy pest" and know how to manage it.

Head Lice Facts

Head lice don't have wings or powerful jumping legs, so they move around by clinging to hairs with specially adapted claw-like legs. Head lice prefer to live on the hair of the head, although they have been known to wander to other parts of the body. Head lice feed every 4 – 6 hours so must remain in close contact with the host. They are unable to survive away from a human host for more than about 48 hours (thus, they cannot live within rugs, carpets, or school buses). Head lice are not found on animals or household pets, and are not transmitted from pets to humans.



Tarsal claw



Female human head louse
From Wikimedia Commons



Male human head louse
From Wikimedia Commons



Head louse egg
From Wikimedia Commons

Lice eggs are called nits. Nits are oval white cylinders (1/16 inch long), once they have hatched and are usually glued by female head lice to hairs on the head near the scalp. Nits are quite often found on hair around a person's ears and back of the head. Eggs will hatch in 7 - 10 days under normal conditions. Before they have hatched the nits can appear to be the same color as the hair as the females use hair pigment to camouflage the eggs.

Both nymphs (immature) and adults have piercing-sucking mouthparts to pierce the skin for a blood meal. Within 24 hours of hatching, a nymph will take its first blood meal, and periodically thereafter as it develops in a period of 10-12 days into an adult (1/8 inch long). Females may live up to 40 days, laying 6-7 nits per day

(up to a total of 50-100 eggs during their lifetime!).

The reaction of individuals to louse bites can vary considerably! People previously unexposed to lice experience little irritation from their first bite. After additional bites, however, individuals may become sensitized and experience an allergic reaction; this includes reddening of the skin, itching, and overall inflammation. Broken skin due to constant itching leads to further treatment complications so catching infestations early is important.

Checking for Head Lice

Periodic inspections for early detection of individual lice are far easier than dealing with advanced infestations. **During the early fall months (August to November) children should be inspected weekly by parents.**

1. Shampoo hair first. Do not use a product with conditioners if you are going to use a lice treatment.
2. Begin with good lighting for your inspection. A lamp or good natural light from a window works.
3. Use a hand lens or magnifying glass to help detect nits and lice.
4. Remove tangles with a comb or hairbrush.
5. Divide the hair in sections and fasten the hair that is not being worked on.
6. Look for nits near the scalp. Eggs more than 1/2 inch away from the scalp are nearly always hatched or dead and do not, by themselves, indicate an active infestation or a need for treatment.
7. If, however, adults or lots of nits (more than 5 nits occurring in the area of a dime) are found, this is a call to action. Also check everyone in the household, including adults.



Headlice.org

Controlling Nits and Adult Lice

There are four critical steps to controlling head lice infestations:

- 1) Use an effective head louse treatment.**

Head lice shampoos contain insecticides and if they are not used properly they can be hazardous. When using a head louse shampoo, minimize body exposure by confining the insecticide to the head hair. Wash the infested person's hair in a basin or sink so insecticide residues do not reach other parts of the body. Never apply treatments to children in the bath or shower! The person applying the treatment should wear rubber gloves. Never apply an insecticide to anyone who has open cuts, scratches, or inflammations, and never use these materials on infants without consulting a doctor. **In all cases, follow label directions completely and carefully.**

Ulesfia® (benzyl alcohol) is a non-neurotoxic, highly effective lotion used for the topical treatment of head lice infestation in patients 6 months of age and older. Ulesfia® like most treatments is not ovicidal (does not kill the eggs), so 2 treatments are necessary. This product is a prescription only treatment but is currently one of the most effective products with fewer side-effects.

With pyrethrin and permethrin shampoos, lice should die within 10 to 30 minutes after treatment. If you find live lice after 30 minutes, resistance may be occurring and you should discontinue use of that product. Switch to a different kind of product e.g. benzyl alcohol Ulesvia prescription). **Never resort to dangerous practices such as applying other insecticides, or materials such as kerosene!**

If you want to avoid insecticides entirely, try using soap shampoos that contain coconut or olive oils. Begin with four shampoo applications, each about 3 days apart. Each successive shampooing kills newly-hatched nymphs. Hair drying and brushing is a very effective way of killing lice mechanically.

2) Lice removal from the head by combing.

Special combs are needed for louse removal and will be effective in eradicating head lice infestations only if used diligently each day for up to two weeks. The LiceMeister™ comb is a great choice and there are many others.

Combing is critical to controlling head lice because **20 to 30% of lice can still be alive after shampooing** (especially with the pyrethrin or permethrin based products). Note: using a lice comb to remove the insects can take up to several hours a day, depending on the thickness and curliness of the hair. Time for a movie marathon or board game evening.

1. After removing tangles and dividing hair into manageable portions, comb hair from scalp to the end of the hair.
2. Dip comb in a container of hot soapy water to drown lice and remove nits.
3. Look through that same section of hair for remaining nits and lice. Repeat if necessary.
4. Repeat all steps until all hair is systematically combed through.
5. Clean nit removal comb with hot soapy water or soapy ammonia. An old tooth brush can help dislodge nits and lice that get caught in the teeth of the comb.

3) Removal of lice and nits from the household environment.

Once an infestation is detected, all clothes should be washed in hot soapy water. Pillowcases, sheets, blankets and other bedding material should also be washed and placed in the clothes dryer on the "high heat" cycle to kill the lice and their eggs. Any non-washable items should be dry cleaned or sealed in plastic bags and placed in the freezer at 5 degreeF or lower for 10 hours or more (a good option for headphones). Vacuuming the home will remove shed hair that has nits attached. Remember if the lice are off the body for 48 hours they are all dead, so simply leaving things that cannot be laundered (very large stuffed animals, duvets, furniture etc.) in a bag or off-limits for 48 hours will do the trick.

4) Daily head checks and nit removal until infestation is gone, followed by weekly head checks to detect reinfestation. Continue weekly head checks of the whole family.

More information regarding head lice management:

Head Lice (Sep. 2005) http://cals.arizona.edu/urbanipm/pest_press/index.html

The National Pediculosis Association,[®] Inc.: <http://www.headlice.org/>

<http://www.extension.org/pages/20989/school-ipm-action-plan-for-head-lice#.Uh4-YBYSMY5>

Making school life interesting – four letter word, begins with L, ends in E. Yes, you guessed it: LICE!

Each school in the nation has faced a head lice outbreak at one time or another. The Arizona Department of Health Services advocates for a qualified “no nit” policy in schools, while our entomologists at the University of Arizona disagree. Many of the older pediculocides (both over-the-counter and prescription options) are not very effective because of significant insecticide resistance. However, the good news is that there are newer, safer treatments that use benzyl-alcohol that are highly effective, with far fewer unwanted side-effects.

Nit-picking is helpful, but it is very difficult to get them all and it is not justifiable to exclude a child from school based on the presence of a few “old” nits that are far removed from scalp line.

Please Note: head lice do not transmit diseases, and they are NOT considered to be a significant public health problem. The presence of lice alone should not be the reason for a child missing school. Find out what your school district head lice policy is. Most school districts list their head lice policy on the school website.

Learn more about head lice management: http://www.extension.org/pages/20989/school-ipm-action-plan-for-head-lice#.Uf58Qdbn_IU

State specific bed bug laws & rules

Since bed bug populations began rebounding in the United States a dozen or so years ago, Arizona (2011), Hawaii (2006), Illinois (2010), Kansas (2007), Maine (2010, 2011), Maryland (2013), New Hampshire (2013), New York (2010, 2011) and Oregon (2013) have enacted bed bug legislation or regulations. Only few of these laws or rules target or directly impact pest management professionals. The overwhelming majority is aimed at landlords or other property managers (i.e., hotels, migrant labor camps, group homes, summer camps, etc.).

[Click here](#) to see NPMA's updated compilation of state bed bug related laws and rules.

Read more: <http://www.ncipmc.org/connection/Connection0813.pdf>

<http://library.constantcontact.com/download/get/file/1102861932245-659/StateBedBugLawsasofJuly292013.pdf>

Toolbox for Education Grant Program from Lowe's (for school improvement projects at K-12 public schools)

Sponsor: The Lowe's Charitable and Educational Foundation

The Lowe's Foundation is accepting applications for its Toolbox for Education Grant Program. The purpose of this program is to support school improvement projects at K-12 public schools in the United States. For the 2013-14 school year, the foundation will give priority to basic necessities, with a preference for funding requests that have a permanent impact, such as facility enhancement (both indoor and outdoor) as well as landscaping/cleanup projects. Projects that encourage parent involvement and help build stronger community spirit are encouraged.

Grants ranging between \$2,000 and \$5,000 will be awarded to select applicants. Any public K-12 school or nonprofit parent group associated with a public K-12 school is eligible to apply.

Deadline: October 15, 2013

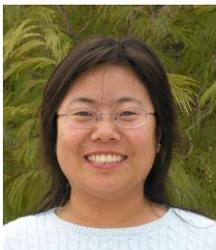
Please contact the Lowe's Charitable and Educational Foundation for more information and to apply for this funding: <http://www.toolboxforeducation.com/index.html>

Environmental Education News and Reports

Update of Human Health Benchmarks for Pesticides in Water

The EPA has updated its list of human health benchmarks for pesticides. The EPA develops these benchmarks as screening levels for use by states and water systems in determining whether the detection of a pesticide in drinking water or a drinking water source may indicate a potential health risk. This year, the EPA added 11 new benchmarks to the list and revised 10 of the benchmarks published in 2012 to reflect new scientific information and added cancer effects benchmarks for 40 of the pesticides. To view the revised list of human health benchmarks for pesticides, visit www.epa.gov/pesticides/hhbp.

University of Arizona Extension Hires a New Assistant in Extension



Dr. Shujuan (Lucy) Li joined the Arizona Pest Management Center on Aug. 19, 2013 as a new Assistant in Extension for Public Health IPM. She will be working with Dr. Dawn Gouge and others as appropriate from Cooperative Extension and from across the College of Agriculture and Life Sciences (CALS) to develop and implement priority engaged research and Extension programs. A current priority is development of IPM programs for public health pests statewide.

Lucy earned her Ph.D. in Entomology from Purdue University. She worked as a Research Associate in cotton IPM programs at University of Arizona prior to joining the Community IPM programs. In addition to research, She has been active in teaching, extension and outreach activities, and community activities. She was involved in producing a number of research and extension publications. She has been working as part-time Assistant in Extension and served as editor and writer for AZ School IPM Newsletter since Feb. 2013.

Sensible Steps to Healthier School Environments Webinar Series

Join EPA for their new webinar series based on the [Sensible Steps Brochure](#) (PDF) (26pp, 1.75MB) and the [State School Environmental Health Guidelines](#). The webinars share low- and no-cost actions that schools can take to create healthier environments for students and staff. Each webinar features school district staff from across the country presenting real-life examples of successes. The target audience includes facility maintenance staff, school nurses, administrators, teachers, and other school personnel and stakeholders. Upcoming webinars:

September 25, 3-4 p.m. Eastern: [Cleaning and Maintenance, Sensible Steps for Creating Healthier School Environments](#)

October 22, 3-4 p.m. Eastern: [Sensible Steps for Energy Efficiency and Waste Reduction in Schools](#)

November 19, 3-4 p.m. Eastern: [Sensible Steps for Mold and Moisture Control In Schools](#)

December 17, 3-4 p.m. Eastern: [Renovate Right: EPA's Renovation, Repair and Painting \(RRP\) Program at Schools](#)

Read more about Sensible Steps to Healthier School Environments Webinar Series, visit: <http://www.epa.gov/schools/webinars.html>

Upcoming Webinars and Events

[Attend Free Sessions](#) of the Green Strides Webinar Series

The [Green Strides Webinar Series](#) provides school communities the tools to reduce their schools' environmental impact and costs; improve health and wellness; and teach effective environmental literacy, including STEM, green careers, and civic engagement. Find more sessions for educators, facilities managers, and advocates weekly, click [here](#).

September 11, 2013, 2-3 p.m. Eastern / 11-12 p.m. Arizona: [Green Purchasing for Schools: Save Money and Reduce Your Environmental Footprint](#)

September 18, 2013, 4-5 p.m. Eastern / 1-2 p.m. Arizona: [Schoolyard Habitat Programs \(FWS\)](#)

September 25, 2013, 3-4 p.m. Eastern / 12-1 p.m. Arizona: [Cleaning and Maintenance, Sensible Steps for Creating Healthier School Environments](#) [Sensible Steps to Healthier School Environments Webinar Series](#)

September 25, 2013, 4-5 p.m. Eastern / 1-2 p.m. Arizona: [Junior Duck Stamp \(JDS\) Conservation and Design Program \(FWS\)](#)

September 25, 2013, 7:30-9 p.m. Eastern / 4:30-6 p.m. Arizona: [Bring Your Class Along on a ClimateChangeLIVE Distance Learning Adventure! \(USFS\)](#)

September 26, 2013, 2-3 p.m. Eastern / 11-12 p.m. Arizona: [Recycle-Bowl Competition and Educational Resources \(KAB\)](#)

October 2, 2013, 4-5 p.m. Eastern / 1-2 p.m. Arizona: [Creating a Culture of Energy Efficiency: Innovative Ways to Engage the Whole School While Saving Money And The Environment \(Alliance to Save Energy\)](#)

October 9, 2013, 4-5 p.m. Eastern / 1-2 p.m. Arizona: [The Cool School Challenge: Addressing Energy Efficiency and Climate Change in K-12 Schools \(NWF\)](#)

The 2013 Don't Bug Me Webinar Series: brought to you by eXtension and its participating Cooperative Extension Institutions. The series is coordinated by the Imported Fire Ant eXtension Community of Practice. See <http://www.extension.org/pages/66408/dont-bug-me-webinar-series-2013>

October 2, 2 p.m. Eastern / 11 a.m. Arizona: [Home Invaders](#)

November 6, 2 p.m. Eastern / 12 p.m. Arizona: [Keep Ants Off the Thanksgiving Table](#)

September 10, 2013, 8 a.m. – 3 p.m. Arizona: 19th Annual Maricopa County Short Course“[Precision Technologies for Variable Rate Pesticide Applications](#)”. SRP Pera Club, 1 E. Continental Drive, Tempe, AZ 85281

6 hours CEU's granted by both AZ Department of Agriculture and AZ Office of Pest Management and 0.55 pts by GCSAA. Registration fee of \$25 includes refreshments and lunch. Late registration fee will be \$40 after September 5 or day of short course. Receipts will be available upon sign-in at short course. Find more information: <http://turf.arizona.edu/events.htm>

September 15, 2013, Sunday, 11 a.m. – 4p.m.:[Arizona Insect Festival](#). Student Union Memorial Center, 520-621-7755, 1303 E. University Blvd., Tucson, AZ 85719

Each year the University of Arizona's Department of Entomology hosts the Arizona Insect Festival. This event takes place in September, when thousands of visitors learn about the importance of insects in our lives and discover insect-based research taking place at the UA. This year the festival will be Sunday, September 15 from 11am to 4pm in the Student Union on the UA campus. Find more information: <http://www.arizonainsectfestival.com>

For more information about the EPA Schools program, visit:
<http://www.epa.gov/schools/>

For more information about the Community IPM, visit:
<http://www.extension.org/pages/23359/urban-integrated-pest-management-community-page>



For more information about School IPM in Arizona, visit:
<http://cals.arizona.edu/apmc/westernschoolIPM.html>

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