HEAD LICE: What to Do? A Guide to the Pediatric Patient
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Dermatlas.org
Head Lice: What to Do?
A Guide to the Pediatric Patient

Practical, evidence-based guidance to help you...

- Become more involved in the diagnosis and management of head lice
- Educate affected families by dispelling the many myths and stigmas surrounding this commonly misunderstood problem
- Enhance your clinical understanding of head lice infestations and treatment options
Head Lice Eating You?

- Social stigma
- Anxiety, paranoia
- Families spend at least $250,000,000/year
- Products range from $10-28/person/Rx
- Most recommend 2 Rx/person
- Harvard Panel 1999

Pediculus capitis plush toy...

Photo courtesy Bernard Cohen, MD
Lice—Historical Perspective

- Lice in existence for several million years¹
- Documented in writing for several thousand²
- 560 species of blood-sucking lice—only in mammals³
- Insects in order Anoplura, only 2 genera infest humans: _Pthirus, Pediculus_²
- 3 species in humans: _P humanus capitis, P humanus humanus, Pthirus pubis_²

Head Lice—Historical Perspective

- Exodus 8:17: Aaron “stretched out his hand with his rod and smote the dust of the earth, and it became lice in men and beast”
- Identified in Egyptian, N. American Indian mummies
- Aztecs offered to gods
- Young women in Siberia threw at men as sign of affection
- Tonga—catching and eating of parents’ lice sign of respect
- Medieval Swedes used lice to select mayor
Head Lice—A Cultural Perspective

Photo by Bernard Cohen, MD
Why do we care?

- Transient local reactions from saliva\(^1\)
- Papular urticaria\(^1\)
- Scratching and resultant inoculation of fecal material\(^1\)
- Vectors\(^2\)
  - Head/pubic lice: Staph/Strep
  - ???:HIV, other viruses

Closer Examination

Photo courtesy Bernard Cohen, MD
Gravid Females
Head Lice—Epidemiology

- Underestimate of prevalence\(^1\)
- Undeveloped world >90\(^2\)
- Endemic in US; incidence may be rising
- No area free of infestation\(^3\)
- Highest in 3-11 y-o\(^3,4\)
- All races—African-Americans not spared (adaptations of claws or egg-laying anatomy in African organism?)\(^1\)
- Fomites an issue in tropical climates\(^1\)

Head Lice—More on Epidemiology

- Risk factors: brown, red hair; female?; length not a factor\(^1,2\)
- Girls>boys>women>men\(^1-3\)
- Preference for certain blood types? \(^2\)

Head Lice—Our Study

- Learned how to collect critters
- Bioassay for crawlers (knockdown time)
- Technique for studying nits
- Infrastructure for accessing students
- Decreased sensitivity to various components of pediculicide
  - There have been reports of resistance to both over-the-counter and prescription products; however, the prevalence of resistance is not well studied
- Body louse model not adequate
Transmission occurs more often at home than at school

No-nit policy is disruptive

Home grooming and exams are essential

Second treatment may be necessary

Head Lice Treatment
Clinical Diagnosis & Treatment

Frank Roemisch, MD, FAAP
Parkside Pediatrics, S.C.
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Pediculus Humanus Capitis: A Closer Look at the Critter

- The adult louse is 2-3 mm long (size of a sesame seed)
  - Usually pale gray; color may vary (red when engorged with blood)
- The louse feeds by injecting small amounts of saliva and taking tiny amounts of blood from the scalp every few hours
- Lice usually survive less than 1 day away from the scalp at room temperature

The Life Cycle Of The Head Louse

Female lay 1st egg 1 or 2 days after mating

Eggs hatch in 7 – 12 days

Eggs tightly attached to hair, close to scalp

Lays ≤10 eggs/day

Without treatment, the cycle may repeat every 3 weeks

Female lives 3-4 weeks

Become adults 9-12 days after hatching

3 nymph stages

1

2

3

Transmission: Think Head-to-Head\textsuperscript{1,2}

- Transmission of lice typically occurs by direct head-to-head contact with an infested individual\textsuperscript{1,2}

- Indirect spread via contact with personal items (combs, brushes, hats) is less likely but can occur\textsuperscript{1,2}

- Itching is the most common symptom
  - It may take 4-6 weeks for itching to develop in someone infested for the first time\textsuperscript{1}
    - In someone with previous episodes, itching may develop within 48 hours\textsuperscript{3}

Although uncommon in the US, secondary bacterial infection may result from pruritus and excoriations associated with head lice infestation. The photo here shows a case of streptococcal-staphylococcal pyoderma.

It is important to note that decreases in the prevalence and severity of scalp pyoderma have been noted following treatment for head lice, even without the use of antibiotics.

A 10-year-old girl complained of scalp pruritus for several weeks. Nits (within white circle) were visible on hairs above the ear. Note the brown scaly fecal material below the hair line (black circle).

Nymphs, Eggs, and Knowing What To Do

- Definitive diagnosis is made by finding a live louse or nymph on the scalp or head\(^1,2\)
- Eggs attached >1 cm from the scalp are usually non-viable\(^1\)
  - In some warmer climates, viable eggs may be found several inches from the scalp\(^3\)
  - Close inspection is needed
- Eggs & nits may be confused with dandruff, fibers, scabs, hair casts, droplets of hair spray, plugs of desquamated cells, or particles of dirt\(^1,3,4\)

References:  
Guidance On Managing Infestations

- Never initiate treatment without a clear diagnosis of head lice\(^1\)
  - Check all household members, other close contacts, and treat if active infestation is found\(^2\)

- In recommending treatment products, consider:\(^1\)
  - Effectiveness
  - Safety
  - Ease of use
  - Cost
  - Local patterns of resistance (if known)

- If treatment does not seem to be working, it may be caused by incorrect use or by resistance\(^2\)

Other Approaches

- Home remedies and “natural” products
  - Essential oils, plant extracts
  - Occlusive agents: Mayonnaise, petroleum jelly, tub margarine, Cetaphil cleanser
  - Vinegar and vinegar-based products

- Removal of nits and lice
  - Products containing citric acid, isopropanol, other ingredients

- Nit-picking salons

Nit-picking Salons: An Emerging Phenomenon

- Nit-picking salons have gained favor in certain parts of the US (California, Florida, Texas, Northeastern states) with some franchises\(^1,2\)
  - Advertise a “natural” or “chemical-free” approach to lice and nit removal
  - $100 per hour for a “comb-out” is a common fee\(^1,2\)

- Treatments may also include various applications of controlled hot air\(^1,3\)

OTC Pediculicides\textsuperscript{1,2}

- Plant-based and synthetic chemical pesticides
  - Decreased efficacy of older agents
  - Require >1 application and nit combing
  - Restrictions in youngest patients

Prescription Pediculicides

- Available: 3 products approved since 2009, and 2 decades-old agents

- Check the label
  - Application times range from 4 minutes to 8–12 hours
  - Some require nit combing
  - Multiple applications required for some
  - Safety considerations and age/weight restrictions
Why Some Cases May Persist After Treatment

1. Misdiagnosis (no active infestation or misidentification)\(^1\)\(^-\)\(^3\)
   - Non-lice, non-nit debris may be mistaken for infestation\(^2\)
   - Other conditions may be mistaken for head lice\(^3\)
     - Contact or seborrheic dermatitis, eczema, psoriasis, insect bites, piedra

2. Lack of adherence to the treatment regimen (such as not using enough product to saturate the hair)

3. Reinfestation\(^1\)

4. Lack of ovicidal or residual killing properties of the product\(^1\)

5. Resistance of lice to the pediculicide\(^1\)

The AAP and National Association of School Nurses state: No healthy child should be allowed to miss school time because of head lice¹,²

“No-nit” policies for return to school should be abandoned¹,²

School-based head lice screening programs have not had a significant effect on incidence of head lice in schools and are not cost-effective²

School nurses in concert with other health care providers should become involved in helping school districts develop evidence-based policies¹

AAP Issues A Call—Get More Involved In Head Lice Treatment

- Historically, *diagnosis of infestations by parents* and other non-health care personnel, combined with easy availability of OTC pediculicides, essentially removed the HCP from the treatment process

- *Treatment failures* may result from misdiagnosis, lack of adherence to the treatment regimen, reinfestation, lack of the product’s ovicidal or residual killing properties, and resistance to the pediculicide; these call for increased provider involvement in the diagnosis and treatment of head lice

- Health care providers should be *knowledgeable about head lice infestations* and treatments
  - They should take an *active role as information resources* for families, schools, other community agencies
  - *Instructions on the proper use of products* should be carefully communicated

HEAD LICE: What to Do?
A Guide to the Pediatric Patient
PATIENT EDUCATION
AND COUNSELING

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Objectives

Upon completion of this presentation, the participant will be able to:

- Dispel common myths regarding head lice
- Discuss the role of health care professionals in educating families and colleagues re: head lice
- Provide practical information for families
- Identify strategies for countering the psychosocial impact of infestation
- Share important resources for health care professionals and families
Facts and Myths Regarding Head Lice

❖ **Facts:**

– Pediculosis is the most prevalent parasitic infestation among humans\(^1\)

– Head lice infestations are pervasive among school-age children in the United States\(^2,3\)

– More common in females\(^4\)

❖ **Myth:** Head lice affect lower socioeconomic groups

– **Fact:** All socioeconomic groups are affected\(^2,3\)

❖ **Myth:** Head lice are only seen in “dirty individuals”

– **Fact:** “Head lice prefer clean, healthy hosts”\(^4\)

Myth

❖ Lice can live for days off the human host

- **Fact:** The louse feeds by injecting small amounts of saliva and taking tiny amounts of blood from the scalp every few hours

- **Fact:** Lice usually survive less than 1 day away from the scalp at room temperature

Myth

- **Fact:** Transmission of lice typically occurs by direct head-to-head contact with an infested individual\(^1\)\(^-\)\(^3\)
  
- Indirect spread via contact with personal items (combs, brushes, hats) is less likely but can occur\(^1\)\(^-\)\(^3\)

Myth

- Head Lice are associated with bacterial infections, including MRSA$^a$

  - **Fact:** In the United States, secondary infections from head lice are very rare$^1$

$^a$ MRSA = Methicillin-resistant *Staphylococcus aureus*

Role of the Health Care Professional

- Health care professionals are essential in head lice diagnosis, treatment, prevention, and education

- Key role in diagnosis
  - Head lice are often confused by laypersons—and even health care providers—with dandruff, seborrhea, and other skin conditions

- Vital role in education
  - Education of co-workers, colleagues, families, and patients

Diagnosis

- Should encourage health care providers to bring individuals into the office for diagnosis
- Refrain from phone diagnosis to avoid over-utilization of treatment options
Very little science exists in many of the “Internet-based” recommendations\(^1\)

Avoid recommendations for treatments not scientifically based

- Expensive options

Contribute to frustration and leave child or family ineffectively treated

Some of these treatments can be very dangerous to the individual’s health

Important Education

- Health care providers need to familiarize themselves with the range of treatment options
- Whatever treatment is recommended, the health care provider should offer instructions on proper use
  - If product information calls for repeat treatment in 2 weeks, this should be performed
  - If nit picking is recommended, it should be conducted
- Educate families about potential for treatment failure with certain products
  - Treatment failures may result from misdiagnosis, lack of adherence to the treatment regimen, reinfestation, lack of ovicidal or residual killing properties of the product, and resistance of the lice to the pediculicide
  - Resistance patterns for particular products can be regional; actual prevalence of resistance is not known

The American Academy of Pediatrics and National Association of School Nurses state:

- No healthy child should be allowed to miss school time because of head lice\(^1,2\)

“No-nit” policies for return to school should be abandoned\(^1,2\)

School nurses, in concert with other health care providers, should become involved in helping school districts develop evidence-based policies\(^1\)

A study published in 2007 in *The Journal of School Nursing* looked at 20 parents in southeast Florida caring for ≥1 school-age child with persistent head lice (defined as ≥3 active infestations in a 6-week period)\(^1\)

**Primary stigma**
- Stigma faced by persons with an undesirable characteristic or health condition
- “Spoiled social identity”

**Courtesy stigma**
- Stigma faced by unaffected persons due to association with a person who bears a stigma

Caring for children with persistent head lice may produce “caregiver strain,” as parents/caregivers share vulnerability to social stigma with their child.

Stigmatizing characteristics may include:
- Presence of live lice
- Presence of nits (viable and nonviable)
- Observable itching

Feelings of stigma associated with head lice may persist long after successful treatment.

Role of Health Care Providers

- Educate affected families in order to dispel myths about head lice
- Affirm correct diagnosis of head lice
- Recommend appropriate treatment, as needed
Resources for Health Care Providers, Educators, and Parents

- Centers for Disease Control and Prevention
  - http://www.cdc.gov/parasites/

- National Association of School Nurses, 2011 policy statement

- American Academy of Pediatrics, Clinical report—head lice

- American School Health Association, 2005 policy statement

- American Academy of Dermatology, parent resources
  - http://www.kidsskinhealth.org/grownups/lice.html

- Web MD, Head lice slideshow: What parents should know
  - http://children.webmd.com/ss/slideshow-lice-overview