Managing Head Lice in Schools
Integrated Pest Management (IPM) is a smarter, usually less costly option for effective pest control in the school community.

An IPM program employs common sense strategies to reduce sources of food, water and shelter for pests in your school buildings and grounds.

IPM programs take advantage of all pest management strategies, including the judicious use of pesticides.
Key Concepts

- Inspect and monitor for pests and pest conducive conditions
- Prevent and avoid pests through exclusion and sanitation
- Use treatments that minimize impacts on health and the environment
- Everyone has a role - custodians, teachers, students, principals, and pest management professionals
Benefits of School IPM

- **Smart**: addresses the root cause of pest problems
- **Sensible**: provides a healthier learning environment
- **Sustainable**: better long-term control of pests
Richard Pollack, Ph.D.
- Senior Environmental Public Health Officer, Harvard University
- Public Health Entomologist, Harvard School of Public Health
- Chief Scientific Officer, IdentifyUS
- International expert, presenter and author on medically relevant pests

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- Nursing Education Director, National Assoc. of School Nurses
- Oversight of NASN head lice programming
- Formerly on faculty of Univ. of Louisville (KY) and Regis Univ. (CO)
- 25 years of clinical nursing experience and adult nurse practitioner

Deborah Pontius, MSN, RN, NCSN
- Health Services Coordinator/Chief School Nurse, Pershing Co. (NV) School District
- Clinician with daily care for students, and health services administrator developing policy and procedures
- Member, National Board of Certification for School Nurses
- Author of numerous Pediculosis articles
Managing Head Lice in Schools

Richard J. Pollack, PhD

- IdentifyUS LLC
- Harvard University &
- Harvard T.H. Chan School of Public Health

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Managing **Head Lice** in Schools

- Biology
- Epidemiology
- Dispel myths
- Medical & public health significance
- Management

Audience: School administrators, medical personnel, teachers, parents
Fear trumps reality

- Head lice
- Spiders
- Bedbugs
- Scabies
- Lyme disease
- WNv
- Influenza

concern

morbidity
Infested scalp hair
Infested scalp hair

Misinformed and angry personnel

Misinformed and angry parents
Distressed school officials!
It is a myth that head lice:

- are a sign that a person or home is unclean
- can jump, fly & survive long off a host
- infest buildings
- are readily shared on combs, brushes and hats
- burrow into skin or transmit infections
- are resistant to all treatments
- should prevent a child from attending school
Head lice

- are insects
- infest only people (usually children), not pets
- occur solely on the scalp hair
- feed only on blood
- do not burrow into skin
Head louse eggs (‘nits’)

Egg 1-2 days old © IdentifyUS, LLC
Egg ready to hatch © IdentifyUS, LLC
Hatched egg (nit) © IdentifyUS, LLC
Dead egg © IdentifyUS, LLC

...and imposters

Pseudo-nit © IdentifyUS, LLC
Not all bugs on the scalp are head lice

Springtail
non-biting, non-infesting
© M. Plonsky. All rights reserved
Shared with permission of M. Plonsky

Head louse
adult female

Booklouse
non-biting, non-infesting
© Texas A&M University Department of Entomology
Photo by M.E. Merchant
Overdiagnosis is the rule, not the exception.

Overdiagnosis and consequent mismanagement of head louse infestations in North America

RICHARD J. POLLACK, PHD, ANTHONY E. KISZEWSKI, DSC AND ANDREW SPIELMAN, SCD

Background. Lay personnel and many health care workers in the United States believe that head louse infestations caused by *Pediculus capitis* are exceedingly transmissible and that infested children readily infest others. Schoolchildren therefore frequently become ostracized and remain so until no signs of their presumed infestations are evident. Repeated applications of pediculicidal product and chronic school absenteeism frequently result.

INTRODUCTION

Human head lice (*Pediculus capitis*) infest people worldwide and are most prevalent in school age children.\(^1\) Parents, school personnel and health providers in North America seem to regard such conditions as exceedingly transmissible, and infested children are
A nonsensical claim: “6 - 12 million cases [of head lice] per year in the U.S.”

<table>
<thead>
<tr>
<th>Enrolled (2009 US Census Bureau)</th>
<th>No. (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursery / Kindergarten</td>
<td>8.8</td>
</tr>
<tr>
<td>Grades 1-4</td>
<td>15.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>24.1</strong></td>
</tr>
</tbody>
</table>

A misguided extrapolation of marketing statistics
Prevalence

- Average amongst 5-10yo kids ~1%
  - much lower in other age groups
- ‘Outbreaks’ are imagined
  - invariably result from misidentification!
## Diagnostic Acumen?

<table>
<thead>
<tr>
<th>Diagnostician</th>
<th>Correct assessment of infestation status (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extinct &amp; active</td>
</tr>
<tr>
<td>Nurse / school nurse</td>
<td>70</td>
</tr>
<tr>
<td>Teacher / daycare</td>
<td>63</td>
</tr>
<tr>
<td>Relative</td>
<td>61</td>
</tr>
<tr>
<td>Barber / beautician</td>
<td>36</td>
</tr>
<tr>
<td>MD</td>
<td>21</td>
</tr>
<tr>
<td>Self</td>
<td>15</td>
</tr>
</tbody>
</table>

How does a person acquire head lice?

Probably **not** from these or other fomites (inanimate objects)
The overly-maligned comb

How could a louse – even if alive – grasp this situation?
The lousiest helmet is one that is not used.

Do batting and bike helmets spread head lice? If they do, it would be incredibly rare. Certainly not a reason not to use them.
Most likely by direct head-to-head contact as children engage in otherwise wholesome activities.
Burden of head louse infestations

• Parasite load
  • **Lice:** generally <10
  • **Eggs:** few to hundreds (most hatched or dead)

• Most cases *without* symptoms
  • itching transient and usually mild
  • secondary infection (scratching)
  • systemic manifestations uncommon
• Financial costs
  • < $10 to > $1,000 (with lice)
  • often > $1,000 when lice only imagined

• Loss of school time
  • 1 day to > 1 year
Managing presumed head louse infestations

‘Nits’ discovered on hair?

Yes

• Inspect hair for live (crawling) lice.
• Compare samples to images at identify.us.com or submit a sample or images for evaluation.

No

• Relax.
• Do NOT treat for lice.
Live (crawling) lice on hair? No

- Periodically reinspect hair for live lice.
- Do not treat.
How can you get rid of head lice?

Anti-louse treatments

OTC & Rx

Mechanical removal

Habitat modification
Is the hair readily combed with a louse comb?

- Yes
  - Comb thoroughly.
  - Use conditioner.
  - Repeat as needed.
  - Consider treatment.

- No
  - Treat as per product instructions.
  - Retreat as appropriate.
  - Consider resistance.


Mechanical removal
Over-the-counter (OTC) pediculicides

FDA-registered

Pyrethrins  Natural extracts, chrysanthemums

Pyrethroids  Synthetic analogues of pyrethrins

Dimethicone  Lubricant / conditioning agent

Inexpensive, easy to use, low risk, sometimes effective
“New 'Super Lice' Are Resistant To Traditional Treatments”

Reality… or over-interpreted research findings and marketing excesses?

Differential Permethrin Susceptibility of Head Lice Sampled in the United States and Borneo

Rx Pediculicides (FDA registered)

- Lindane
- Malathion
- Benzyl Alcohol
- Ivermectin
- Spinosad
- "Ovide"
- "Ulesfia"
- "Natroba"
- "Sklice"
Rx Pediculicides (FDA registered)

Lindane
Malathion
“Ovide”

Benzyl Alcohol
“Ulesfia”

Spinosad
“Natroba”

Ivermectin
“Sklice”

May potentially pose unacceptable risks, particularly if misused.
An 18-year old Evansville woman who sustained serious burns to more than half her body last month is showing marked improvement at the University of Louisville Hospital, her mother said this week.

Jessica Brooks was burned Feb. 22 after dousing her hair with gasoline in an attempt to get rid of lice. The pilot of a nearby water heater ignited the fumes, engulfing her in flames.


Adding insult to injury: Did she have lice in the first place?
Louse / nit removal services
An unregulated industry

Diagnose
Rarely hold medical credentials.

Comb & snip hair
Rarely licensed as barbers / beauticians.

Formulate, sell and apply anti-louse products
Rarely approved by FDA or EPA, nor are the salons licensed as pest control professionals.
Recommended responses ✔

- Confirm specimen ID
- Notify parent / guardian at the end of the day
- Provide educational information on the biology & management of head lice
Unjustified responses ✗

- Excluding / quarantining student & possessions
- Violating confidentiality or notifying other students / parents
- Mass screening
- Applying pesticides to classrooms & buses
- Reporting cases to youth / social services
- Bagging clothing
- Restricting use of headphones / helmets
No-nit policies to reduce incidence and/or prevalence

What’s wrong with them?

• No objective basis for no-nit or no-louse policy
• No medical or public health justification
• Training, equipment, regulation issues
• Mistakenly assume transmission within school
• Wrongly assume ‘nits’ are viable and/or transmissible
• Burdensome to children, school personnel, parents
Why many school systems have changed their policies

- Lack of medical / public health justification
- Inappropriate use of school nurse time
- Child, parental & staff distress
- Unnecessary absences from school
- Goals: Evidence-Based Practice
• Students diagnosed with live head lice do not need to be sent home early from school; they can go home at the end of the day, be treated, and return to class after appropriate treatment has begun.

• Personal hygiene or cleanliness in the home or school has nothing to do with getting head lice.

• The burden of unnecessary absenteeism to the students, families and communities far outweighs the risks associated with head lice.

http://www.cdc.gov/parasites/lice/head/schools.html
• “No healthy child should be excluded from or allowed to miss school time because of head lice or nits.”

• “School personnel involved in detection of head lice infestation should be appropriately trained. The importance and difficulty of correctly diagnosing an active head lice infestation should be emphasized.”

• “Head lice screening programs have not been proven to have a significant effect over time on the incidence of head lice in the school setting and are not cost-effective.”
Pediculosis Management in the School Setting

It is the position of the National Association of School Nurses that the management of pediculosis (infestation by head lice) should not disrupt the educational process. No disease is associated with head lice, and in-school transmission is considered to be rare.

Children found with live head lice should remain in class.

IPM for Head Lice

Head lice are obligate parasites & are not free living.

• Hence, head lice are a medical issue, not a pest control problem.

• School & pest management personnel can do nothing to prevent or eliminate head lice.
IPM efforts directed against head lice should be highly focused.... on the head.

- Schools can provide educational resources and rely on medical experts.

- No basis to treat environment or for anyone other than the child’s care giver and medically trained personnel to examine a child.
• Head lice: an occasional malady of childhood
• The most trivial of the social ‘diseases’ a child may acquire. Compare to:
  • Viruses: Cold & influenza
  • Parasites: Pinworms
  • Fungal: Athlete’s foot, ringworm
• Head lice indicate that the child has friends.
Rapid, Independent, Confidential & Expert evaluations of pests and digital images.

https://identify.us.com

- Offer independent assurance
- Insulate school nurse from controversy
- Reduce unnecessary absentee rates & treatments
American Academy of Pediatrics:
http://pediatrics.aappublications.org/content/135/5/e1355.full.pdf

National Association of School Nurses:

US Centers for Disease Control and Prevention:
http://www.cdc.gov/parasites/lice/head/index.html

IdentifyUS
https://identify.us.com/idmybug/head-lice/index.html
Managing Head Lice in Schools – NASN Perspective

CENTER OF EXPERTISE FOR SCHOOL
INTEGRATED PEST MANAGEMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
OCTOBER 20, 2015

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Director of Nursing Education
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Objectives

- Identify the key components of NASN’s position on the management of head lice in schools
- Describe the NASN tools and resources to support school nursing practice related to the management of head lice in schools
NASN's Position (2011)

- Remain in class
- Discourage head-to-head contact
- Notify parent/caregivers at end of school day
- Screen known contacts
- Abandon “no-nit” school policies
- Eliminate classroom wide screening
- Letters home to provide education

Framework for 21st Century School Nursing Practice

(NASN, 2015)
# Proposed Framework for 21st Century School Nursing Practice

## Practice Components

### Care Coordination
- **Case Management**
- **Chronic Disease Management**
- **Collaborative Communication**
- **Direct Care**
- **Motivational Interviewing/Counseling**
- **Nursing Delegation**
- **Student Care Plans**
- **Student-centered Care**
- **Student Self-empowerment**
- **Transition Planning**

### Leadership
- **Advocacy**
- **Change Agents**
- **Education Reform**
- **Funding and Reimbursement**
- **Healthcare Reform**
- **Lifelong Learning**
- **Models of Practice**
- **Technology**
- **Professionalism**
- **Systems-level Leadership**
- **Systems-level Leadership**

### Public Health
- **Access to Care**
- **Cultural Competency**
- **Health Equity**
- **Healthy People 2020**
- **Levels of Prevention**
- **Outreach**
- **Population-based Care**
- **Social Determinants of Health**
- **Surveillance**

### Quality Improvement
- **Data Collection**
- **Evaluation**
- **Quality Improvement Cycle**
- **Research**
- **Uniform Data Set**

### Standards of Practice
- **Clinical Competence**
- **Clinical Guidelines**
- **Code of Ethics**
- **Critical Thinking**
- **Evidence-based practice**
- **NASN Position Statements**
- **Nurse Practice Acts**
- **Scope and Standards of Practice**
Managing Head Lice
Role of the School Nurse

Care Coordination
Collaborative Communication Education

Leadership
Advocacy Policy Development & Implementation

Quality Improvement
Evaluation Meaningful Health & Academic Outcomes

Public Health
Environmental Health Health Education

Standards of Practice
Evidence-based Practice NASN Position Statements

(NASN, 2015; NASN, 2010; ANA & NASN, 2011)
NASN Webpage: Head Lice – *Pediculosis capitis*

- Resource Publications
- National Resources
- In the Literature

https://www.nasn.org/ToolsResources/HeadLicePediculosisCapitis
Education Campaign: Headfirst Lice Lessons

https://www.nasn.org/ToolsResources/HeadLicePediculosisCapitis/HeadfirstLiceLessons
http://headfirstlicelessons.org/
Other NASN Resources

- Back to school toolkit
- NASN Radio
BETTER HEALTH. BETTER LEARNING.™

Center of Expertise for School IPM
References


Center of Expertise for School IPM

Head Lice in Schools

SCHOOL NURSES = LICE QUEENS!

Deborah Pontius, MSN, RN, NCSN
Health Services Coordinator/Chief School Nurse
Pershing County School District
Lovelock, NV
Goals of Lice Management in School

- Treat and eliminate lice as quickly and safely as possible
- Avoid interfering with education; minimize school absences
- Do not stigmatize or embarrass child or family
- Minimize recurrence by educating parents and the community
Challenges of Lice in School

- **Myths**
  - Lack of understanding of transmission and life cycle
- **Stigma and embarrassment**
- **Privacy and confidentiality**
- **Parental resistance to no exclusion/notification**
- **Exclusions interfere with education**
Role of the School Nurse

Lice expert: Key health professional

- Identify, confirm, and contain infestation
- Provide information to parents, school, and community on treatment
- Prevent overexposure to chemicals
- Minimize school absence
- Educate and advocate to—
  - Eliminate exclusionary policies
  - Implement evidence-based policies

Advocating for Evidence-Based Lice Policies

- If you have no policy, do not create policy
- Gather your own statistics
- Research evidence
  - NASN Position Statement
  - AAP Position Statement
  - CDC
  - Pollack et al
- Prepare action plan
What is Wrong With No-Nit Polices?

- Assume nits are viable and easily transmissible
- Assume transmission likely within school
- Not based on myths

Goals of New Lice Policy¹

- Move to evidence-based practice
  - Effectively, quickly, and safely eliminate student infestations
  - Community education
  - Changed perception
- Improved attendance
  - NO exclusions
  - Nurse-parent partnership
  - Confident self-care
- Increased academic excellence
  - No lags in education
  - Good psychosocial development of students

Parental and Teacher Resistance

- Aggressive demands for no-nit policies, immediate exclusion, notification, and classroom screenings:
  - Unfamiliar with evidence and new guidelines
  - Fearful of infestation/adhere to old common practices
  - Quarantine seems logical in the abstract

School Lice Policies¹,²

Conventional Wisdom-Based

- Classroom screenings of infested student
- Scheduled school-wide screening
- Notes home to parents of classmates
- Immediate exclusion when lices/nits found
- No-nit or nit-free

Evidence-Based

- Screening family members and close contacts
- No regular screenings
- No notification of classmate parents
- Notify parents at the end of the school day
- Only nits closer than ½” from scalp = treat or remove

Components of Model Lice Policy

- When lice is suspected:
  - Check suspected student using privacy measures
  - Check family members and close contacts
    - Recent overnights
    - Play together often outside of school
    - Shared hair care items
    - Shared bed
Components of a Model Lice Policy

- When live lice or nits close to scalp are found
  - Return student to class
  - Notify teacher in confidential manner

Image: CDC PHIL
Confidentiality & Privacy

- Do infested students have right to privacy?
- Do parents of classmates have right to know?
- Is it possible to keep knowledge of which student confidential?
- Which is the greater risk?
- Which right outweighs the other?
Components of Model Lice Policy

- Notify parents at the end of the school day
- Focus on education of parents
  - Treatment regimens
  - What to look for
  - Myths and realities

Image: CDC PHIL
Components of Model Lice Policy

- Eliminate no-nit policy
- Nits farther than ¼” from scalp ignored
Components of a Model Lice Policy

- After treatment-consider
  - Check upon return to school
  - Check 1 week later
- Nurse has authority to exclude or do classroom screenings at her discretion
  - Very small children, close contacts
  - Lack of parental follow-through
Challenges to Policy Change

- Myths and fear
- Personal experience
- Industry and Organizations
  - Product manufacturers
  - Louse & nitpicking services
  - Organizations
Successful Change Implementation

- Ducks in a row
- Educate board
- Educate community
- Educate parents
- Re-educate as necessary
- Be prepared for panic

Summary: Goals of Pediculosis Management in Schools

- Educate parents and community
- Identify, confirm, and contain infestation
- Prevent overexposure of chemicals
- Maintain confidentiality and privacy
- Reduce stigma
- Minimize school absence
- Advocate for:
  - Elimination of exclusionary policies
  - Implementation of evidence-based policies
Upcoming School IPM Webinars

Nov. 10  Writing an IPM Policy for Your School District
Dec. 15  Bed Bugs in Schools
Jan. 26  Stop School Pests and iPestManager – school IPM educational programs
Feb. 23  Procuring IPM-Based Pest Mgmt. Services
Mar. 15  IPM for Turf on School Grounds
Apr. 19  Vertebrate Turf Pests
May 17  Ants, The #1 Pest in Schools
Jun. 7   Termite Mitigation in Schools
Certificates of Attendance

CERTIFICATE OF PARTICIPATION

This is to certify the above participant attended the 90-minute webinar entitled

Managing Head Lice in Schools

PRESENTED BY: EPA’s Center of Expertise for School IPM

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