

GUIDANCE ON HEAD LICE PREVENTION AND CONTROL FOR SCHOOL DISTRICTS AND CHILD CARE FACILITIES

This guidance is provided to assist local health departments, elementary schools, preschools, and child care facilities in developing policies and procedures for the care of children found to have head lice. The California Department of Public Health (CDPH) recommends that schools and childcare facilities maintain an active educational campaign for parents on the accurate diagnosis and proper treatment of head lice cases to prevent transmission of lice in schools and reduce lost school days due to head lice infestation.

Head lice, while a significant nuisance problem, do not transmit disease to humans. Traditionally, head lice policies in schools emphasized that a child infested with head lice could not return to school until no nits were found in their hair (“no-nit” policy). There is no evidence that a no-nit policy prevents or shortens lengths of outbreaks (Pollack et al., 2000, Williams et al., 2001). The American Academy of Pediatrics, the National Association of School Nurses, and the Centers for Disease Control and Prevention are all opponents of no-nit policies (Frankowski and Weiner, 2002; Schoessler, 2004). Furthermore, the “International Guidelines for Effective Control of Head Louse Infestations” state that “the no nit policy is unjust as it is based on misinformation rather than objective science and should be discontinued” (Mumcuoglu, 2007). CDPH recommends a no-lice policy.

The essential components of a no-lice policy are the following:

- ◆ Early detection of head lice infestations through routine screening by parents and/or caregivers
- ◆ Treatment of children found to have live lice
- ◆ Distribution of educational material to school staff and parents on head lice, nit combing, and treatment such as “A Parent’s Guide to Head Lice” brochure (available at local health departments and online: <http://www.cdph.ca.gov/healthinfo/discond/documents/2012headliceeng.pdf>).

Adult head lice are grey or brown, wingless insects approximately 1/8 inch in length. Adult females lay eggs (nits) by gluing them to the hairs near the base. Lice do not fly or jump and can be detected by parting the hair and examining near the scalp, most commonly near the ears and the back of the neck. Wetting the hair before combing has been shown to be a helpful method in diagnosing an active lice infestation (Jahnke, 2009). Children ages 3-11 years old are at highest risk for head lice infestation.

DETECTION OF HEAD LICE. There is a lack of evidence showing that routine class or school-wide screening reduces lice infestation rates (Frankowski, 2010). Moreover,

many schools now lack the resources to do routine lice checks. Parents should check their children for lice regularly. If lice are seen on a child at school the parents should be called to pick up the child at the end of the school day and be given a copy of the brochure “A Parent’s Guide to Head Lice”. At home, all members of the family must be checked for head lice. This policy allows the parent to treat the child overnight. The day following treatment, the child should be re-examined and admitted to class. If the child is still infested, then the parent should be re-contacted.

While classroom or school-wide notification is not recommended after head lice have been detected in a student, this policy is at the discretion of the school nurse or administration.

CHRONIC CASES. If a child is found repeatedly infested with head lice for six consecutive weeks or in three separate months of the school year, the child should be deemed to have a “chronic” head lice case. It is important for schools to identify these children since their continuing infestations may signify other family or socioeconomic problems. These chronic cases should be reported to the school attendance review board and be addressed by a multidisciplinary work group. The work group could consist of representatives from the local health department, social services, the school (district) nurse, and other appropriate individuals to determine the best approach to identifying and resolving the family problems that impact the child’s chronic louse infestation and school attendance.

ENVIRONMENTAL CONTROL. Adult lice will die within two days without a blood meal. In a classroom where head lice are found, actions should be taken if possible to reduce head-to-head contact (Frankowski, 2010). Always keep each child’s hat and other clothing on separate hooks and hang each child’s coat on the back of their chair.

Pillows and other classroom items may have nits or lice on them but are unlikely sources of infestation. These items can be put in a dryer and run on hot for 20 minutes, vacuumed, or placed in sealed plastic bags for two weeks to kill hatching lice (nits take six to nine days to hatch and are unlikely to hatch away from the scalp). Vacuuming infested classrooms once a day until no children have lice can decrease the remote possibility of lice transmission from the environment.

At home, bed linens should be laundered (Burkhardt, 2006, Meinking, 1999). Combs, brushes, and picks can be soaked in hot water (>130°F) for 5-10 minutes. Pesticide application to the school or home environment is not recommended.

TREATMENT. Parents need to understand that the most important components of head lice control are a single treatment with one of the following treatments, then reapplication if live lice are found seven to ten days later. Nit combing should also be performed. Head lice that are resistant to some of the commonly used insecticides in head lice shampoos have been found in California and therefore not all lice may be killed by treatment. Combing and removal of nits may help to reduce the duration of

infestation. CDPH recommends the combination of treatment and nit combing. Several brands of nit combs are available at local pharmacies. Flea combs also work well for nit combing and can be bought at pet stores. **Sometimes it may seem that the treatment used has failed when actually there may have been: 1) misidentification of substance on the hair shaft as nits (i.e. dandruff, styling products, etc.), 2) re-infestation, 3) inadequate treatment (used too little product), or 4) no knowledge that it may take 8-12 hours for lice to die after treatment.**

Over-the-counter treatments:

Pyrethrins (i.e. A-200®*, Pronto®*, R&C®*, Rid®*, Triple X®*) and permethrin (1%) (i.e. Nix®*) treatments may be used to kill live lice but not nits, and may need to be used again one week later to kill resistant or newly hatched lice. A study of head lice in California indicates that some lice populations are resistant to permethrin (Gao et al., 2003). However, there are now non-permethrin based products available for head lice control.

Available by prescription only:

Benzyl alcohol lotion (5%) (i.e. Ulesfia®*) is a medication for the treatment of head lice in patients 6 months of age and older. However, Benzyl alcohol does not kill nits and treatment should be repeated in 7-9 days to kill emerged lice (Frankowski, 2010; Meinking, 2010).

Ovide®*(0.5% Malathion) is an effective product to kill lice and their nits on children 6 years of age and older. Ovide is flammable so parents must not use hairdryers or smoke when applying this product (Meinking et al, 2001; Meinking et al, 2002; Frankowski, 2010).

Spinosad (0.9%) (Natroba ®*) is a treatment for children 4 years of age and older. Spinosad is derived from a soil-dwelling bacterium and works to “over-stimulate” lice and nits into paralysis and death (McCormack, 2011).

Sklice®* (0.5% Ivermectin) is a treatment for children 6 months of age and older. Ivermectin is derived from a soil bacterium and causes paralysis and death in lice and nits.

Alternative treatments:

The Lousebuster®* is a device designed to deliver heated air at high flow to the scalp and hair to kill lice and nits. Treatment takes 30 minutes (Bush, 2011). This product is expensive and may require specialized training to use.

There is no conclusive scientific evidence to support the use of products such as vinegar, isopropyl alcohol, enzyme-based compounds, tea tree oil, or other alternative

products advertised to dissolve the glue on the nits (to ease their removal) or kill the nits. Similarly, there are no conclusive scientific data to support claims that mayonnaise, olive oil, melted butter, petroleum jelly, or other alternative products on the hair “suffocate” the nits and lice. Drowning lice is also an ineffective way to kill lice (Takano-Lee et al., 2004). Natural products (i.e. herbal products) are not regulated for safety by the U.S. Food and Drug Administration (Wadowski et al., 2015).

Please contact your local health department for more information. The list of references cited in this document is attached. These guidelines, the brochure “A Parent’s Guide to Head Lice” (in English and Spanish) ,and other CDPH publications can be found on the California Department of Public Health Head Lice webpage:
<http://www.cdph.ca.gov/healthinfo/discond/Pages/HeadLice.aspx>

*Use of this product name does not imply commercial endorsement by the California Department of Public Health

Recommendations by state and federal experts and existing standards of practice outlined in this document are intended to provide guidance to individuals and agencies involved with head lice prevention and control in California. The information provided in this document are recommendations provided for informational purposes only and are not intended to be regulatory in effect.

Literature Cited

- Burkhardt CN, Burkhardt CG. 2006. Fomite transmission in head lice. *Journal of American Academy of Dermatology*. 1-4.
- Bush SE, Rock AN, Jones SL, Malenke JR, Clayton DL. 2011. Efficacy of louse buster, a new medical device for treating head lice (Anoplura: Pediculidae). *Journal of Medical Entomology*. 48 (1): 67-72.
- Frankowski BL, Weiner LB. 2002. Head lice. *Pediatrics*. 110(3): 638-643.
- Frankowski BL, Bocchini JA Jr. and the Council on School Health / Committee on Infectious Diseases. Clinical Report Head Lice. 2010. *Pediatrics* 126: 392-403.
- Gao J-R, Yoon KS, Lee SH, Takano-Lee M, Edman JD, Meinking TL, Taplin D, Clark JM. 2003. Increased frequency of the T929I and L932F mutations associated with knockdown resistance in permethrin-resistant populations of the human head louse, *Pediculus capitis*, from California, Florida, and Texas. *Pesticide Biochemistry and Physiology*. 77:115-124.
- Jahnke C, Bauer E, Hengge UR, Feldmeier H. 2009. Accuracy of diagnosis of *Pediculosis capitis*. *Archives of Dermatology*. 145 (3): 309-313.
- McCormack PL. 2011. Spinosad: in *Pediculosis capitis*. *Journal of Clinical Dermatology*. 12(5): 349-353.

- Meinking TL, Clineschmidt CM, Chen C, Kolber MA, Tipping RW, Furlek CI, Villar ME, Guzzo CA. 2002. An observer blinded study of 1% permethrin crème rinse with and without adjunctive combing in patients with head lice. *Journal of Pediatrics*. 141: 665-670.
- Meinking TL, Entzel P, Villar ME, Vicaria M, Lernard GA, Porcelain SL. 2001. Comparative efficacy of treatments for *Pediculus capitis* infestations. *Archives of Dermatology*. 137: 287-292.
- Meinking TL, Serrano L, Hard B, Entzel P, Lernard G, Rivera E, Villar ME. 2002. Comparative in vitro pediculicidal efficacy of treatments in a resistant head lice population in the United States. *Archives of Dermatology*. 138: 220-224.
- Meinking TL, Villar ME, Vicaria M, Eyerdam DH, Paquet D, Mertz-Rivera K, Rivera HF, Hirart J, Reyna S. 2010. The clinical trials supporting benzyl alcohol 5% (Ulesfia): a safe and effective treatment of head lice (*Pediculosis humanus capitis*). *Pediatric Dermatology*. 27(1): 19-24.
- Mumcuoglu KY, Barker SC, Burgess IF, Combescot-Lang C, Dalglish RC, Larsen KS, Miller J, Roberts RJ, Taylan-Ozkan A. 2007. International Guideline for Effective Control of Head Lice Infestations. *Journal of Drugs in Dermatology*. 6(4):409-414.
- Pollack RJ, Kiszewski AE, Spielman A. 2000. Over diagnosis and consequent mismanagement of head louse infestations in North America. *Pediatric Infectious Diseases*. 19: 689-693.
- Schoessler SZ. 2004. Treating and managing head lice: the school nurse perspective. *American Journal of Managed Care*. 10(9 Suppl): S273-6.
- Takano-Lee M, Edman JD, Mullens BA, Clark JM. 2004. Home remedies to control head lice: assessment of home remedies to control the human head louse, *Pediculus humanus capitis* (Anoplura: Pediculidae). *Journal of Pediatric Nursing*. 19(6): 393-398.
- Wadowski L, Balasuriya L, Price HN, O'Haver J. 2015. Lice update: new solutions to an old problem. *Clinics in Dermatology* 33: 347-354.
- Williams LK, Reichert A, MacKenzie WR, Hightower AW, Blake PA. 2001. Lice, nits, and school policy. *Pediatrics*. 107 (5): 1011-1015.

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