

LICE PROTOCOL

**Federal Bureau of Prisons
Clinical Guidance**

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WHAT'S NEW IN THIS DOCUMENT?

The protocols for lice and scabies have been divided into two separate documents. The protocol for lice is the same as previously published in 2011, except for minor editorial and formatting changes. The content has not been updated. (The formatting was updated in August 2017.)

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1. PURPOSE

The purpose of this BOP *Lice Protocol* is to provide recommended procedures for detection, diagnosis, treatment, and prevention of lice in the correctional setting.

Lice are ectoparasites, organisms that require external contact with the human host for nutriment. Lice are insects. Ectoparasites can cause significant outbreaks in congregate settings such as correctional facilities.

➔ *All inmates should be screened for lice at intake.*

2. CAUSATIVE AGENTS

The three species of lice that commonly affect humans include the following:

- **HEAD LICE** (*Pediculus humanus capitus*), which occur on the hair, and more rarely on the eyebrows and eyelashes.
- **BODY LICE** (*Pediculus humanus corporis*), which may also inhabit the seams and linings of clothing and bed linens. Epidemics of typhus, trench fever, and louse-borne relapsing fever have been caused by body lice. Although typhus is no longer widespread, epidemics still occur during times of war, civil unrest, and natural disaster, as well as in refugee camps, prisons, and other places where people live crowded together in unsanitary conditions.
- **PUBIC (OR CRAB) LICE** (*Phthirus pubis*), which infest the pubic area, and more rarely facial hair, axillae, and body surfaces.

Lice are completely dependent on human blood for survival. They cause a mild dermatitis by sucking blood and exposing the human host to louse saliva and excrement.

3. LIFE CYCLE OF THE HEAD LOUSE

The life cycle of the head louse has three stages—nit, nymph, and adult:

- **NITS:** Nits are head lice eggs. They are hard to see and are often mistaken for dandruff or dirt. Nits are laid by the adult female and are cemented at the base of the hair shaft, close to the scalp. Viable eggs are usually located within 6 mm of the scalp. Nits are 0.8 mm by 0.3 mm, oval, and usually yellow to white. They take about one week to hatch (range: 6–9 days).
- **NYMPHS:** The egg hatches to release a nymph. The empty nit shell then becomes a more visible dull yellow and remains attached to the hair shaft. The nymph looks like an adult head louse, but is smaller—about the size of a pinhead. Nymphs mature and become adults about 7 days after hatching.
- **ADULTS:** The adult louse is about the size of a sesame seed, has six legs (each with claws), and is tan to grayish-white. In persons with dark hair, the adult louse will appear darker. Female lice are usually larger than males and can lay up to eight nits per day. Adult lice can live up to 30 days on a person's head. Adult lice need to feed on blood several times daily and will die within 1–2 days when separated from the host.

4. DIAGNOSIS

Lice infestations may be diagnosed by means of a careful history, assessment of signs and symptoms, and detection of lice and eggs (nits) through examination of the patient. Screening for lice and nits is enhanced by using a bright light and a magnifying glass.

- **HEAD LICE** infestation often results in severe itching of the scalp; however, some persons are asymptomatic. Infestation is diagnosed by examining the hair and scalp for nits, nymphs, or adults.
 - ▶ Finding a nymph or an adult may be difficult. There are usually just a few of them, and they can move quickly. Detection of lice can be enhanced by using a fine-toothed nit comb. The hair should first be brushed or combed to remove tangles. Then, starting near the crown of the head, use the nit comb to systematically comb the entire head twice, examining the comb after each stroke for the presence of lice.
 - ▶ Nits are cemented securely to the hair shaft, and thereby can be distinguished from dandruff and dust. Even if crawling lice are not seen, finding nits within a ¼ inch of the scalp strongly suggests that the person is infested. If no nymph or adult lice are seen, and the nits are all located more than ¼ inch from the scalp (i.e., the hair has had time to grow since the nits were laid), the infestation is most likely an old one and less likely to be infectious.
 - ▶ During a lice infestation, persistent or recurrent pyoderma around the ears and neck often occurs. The cervical and nuchal lymph nodes are often enlarged.
- **BODY LICE** infestations are usually associated with a rash and itching, which constitute an allergic reaction to the lice saliva. Long-term body lice infestations may lead to thickening and discoloration of the skin, particularly around the waist, groin, and upper thighs. Scratching may cause breaks in the skin that can become secondarily infected. Diagnosis is usually based on identifying body lice on the body, or on the infested person's clothing or bedding. Nits can be found in the seams of clothing or on bedding. Occasionally, eggs are attached to body hair.
- **PUBIC LICE** infestations typically present with itching in the genital area, with visible nits at the base of the pubic hair or crawling lice in the pubic area. Involvement of the eyelashes can also occur. In such cases, patients present with bilateral matted eyelashes and conjunctivitis, with visible nits sometimes detected at the eyelash base.

5. MODE OF TRANSMISSION

- **HEAD LICE** are transmitted by direct contact with infested persons and via objects (fomites) that have been in contact with them (e.g., shared combs, clothing, and bed linens).
- **BODY LICE** are transmitted by direct and indirect contact with the personal belongings of infested persons, especially shared clothing and head gear.
- **PUBIC LICE** are transmitted primarily through sexual contact.

6. INFECTIOUS PERIOD

Lice remain communicable as long as the lice or eggs remain alive on the infested person or on fomites. Lice will depart a host who is having a fever, thereby increasing the likelihood of transmission to another person. The likelihood of person-to-person transmission is also increased in crowded conditions such as those in correctional facilities.

7. TREATMENT OF LICE

GENERAL PRINCIPLES FOR TREATING LICE

The following are general principles related to treatment of lice:

- Because of the congregate setting in prison, the BOP has a low threshold for the treatment of lice. Inmates with observed lice or nits should be treated.
- There are multiple products available to treat lice, and they come in various strengths, indications, and brand names. Carefully read the labels and instructions for use.
- Infection control measures are a crucial and integral part of treatment. The laundry and environmental procedures outlined below in *Section 8, [Infection Control Measures for Lice](#)*, should be performed simultaneously with other treatment measures.
- Provide education to the inmate regarding the treatment regimen, how and where to apply the treatment, length of time to leave it on, how to remove it, and other infection control considerations.
 - ➔ *For an inmate handout on head lice, see [Appendix 1](#), Inmate Fact Sheet on Head Lice.*
- Whenever permethrins or pyrethrins are utilized for treatment, patients should be *routinely* retreated 7–10 days later. Retreatment should kill any newly hatched lice, although treatment failures can occur even after two applications.
 - ➔ *More than three applications of the same product within a two-week period is not recommended.*
- If there is involvement of the eyelids or eyelashes, apply occlusive ophthalmic ointment to the eyelid margins, twice a day for 10 days.
- In addition to medical treatment, it may be helpful to use a nit comb to systematically remove lice and nits, especially if the nits are less than ¼ inch from the scalp. It is recommended that the hair be wet when it is combed.
- Most often, treatment failure is due to noncompliance with treatment or to continued exposure to infested, untreated persons. However, treatment failure can result from drug resistance. If reoccurrence of infestation occurs within one month of the previous treatment, re-treat with a different agent.

TREATMENT OF HEAD AND PUBIC LICE

TABLE 1 and TABLE 2 below outline the regimens for topical treatment of head and pubic lice.

→ Ivermectin—delivered orally at 200 micrograms per kilogram, and then repeated once 2 weeks later—is a simple treatment option that should be considered on a case-by-case basis for inmates who have failed therapy with a topical agent.

TABLE 1. INITIAL TOPICAL TREATMENT REGIMENS FOR HEAD AND PUBIC LICE

Treatment	Permethrin (1%)	Pyrethrins <i>(usually combined with piperonyl butoxide)</i>
Brand Names	Nix®	A-200®, Pronto®, R&C®, Rid®, Triple X®
Description	Permethrin is an insecticide that is considered safe and effective. → <i>Permethrin has a high alcohol content, posing a flammability risk and potential for diversion.</i>	Pyrethrins are included in a class known as pediculocides or antiparasitic agents. They are natural extracts from the chrysanthemum flower, and are safe and effective.
Dosage Form	Nix® comes in the form of a 1% strength cream rinse. → <i>Permethrin products utilized for scabies come in a 5% concentration.</i>	Pyrethrins are available in numerous forms: foams, creams, gels, liquids, oil, and shampoo. The strength is generally 0.33% pyrethrin and 4% piperonyl butoxide.
Use	<ul style="list-style-type: none"> • Apply to hair, leave on for 10 minutes, and rinse off. • Perform a second treatment in 7–10 days to kill any newly hatched lice. → <i>Permethrin may continue to kill newly hatched lice for several days after each treatment.</i>	<ul style="list-style-type: none"> • Apply to hair, leave on for 10 minutes, and rinse off. • Perform a second treatment in 7–10 days to kill any newly hatched lice.

TABLE 2. ALTERNATIVE TOPICAL TREATMENT REGIMEN FOR HEAD LICE

Treatment	Malathion 0.5% Solution
Brand Name	Ovide®
Description	When used as directed, malathion effectively treats lice. Some medication remains on the hair and can kill newly hatched lice for 7 days after treatment. Few side-effects have been reported. Malathion can sting if applied to open sores that may have occurred from scratching. → <i>Malathion has a high alcohol content, posing a flammability risk and potential for diversion.</i>
Use	Malathion is left on for 8–12 hours, and rinsed or shampooed off with non-medicated shampoo. Repeat in 7–9 days. → <i>Malathion's strong odor and long application time make it a suboptimal treatment option.</i>

TREATMENT REGIMEN FOR BODY LICE

To treat infestations of body lice, the infested person should shower and change into clean clothes:

- For persons with extensive body hair, a 1% permethrin lotion or a pyrethrin shampoo may be applied to the entire body, and left on for 10 minutes before showering. For persons with localized body hair, the pediculicides may be applied to just the hairy regions of the body.
- All infested clothing, bed linens, and towels should be laundered using hot water (at least 130°F). Dry items in a dryer set to the hot cycle.

8. INFECTION CONTROL MEASURES FOR LICE

- Inmates with suspected or diagnosed lice infestation should be housed in a single-cell room—and restricted from all work assignments and visitations—until 24 hours after their initial treatment has been completed.
- Inmates with lice infestations should ordinarily not be transferred to other BOP institutions until 24 hours after treatment.
- Utilize contact precautions, in addition to standard precautions, until 24 hours after the initial treatment is completed. Contact precautions should be used for any hand or skin-to-skin contact necessary for inmate care, including direct contact with the inmate and contact with the inmate's personal items. Use appropriate barrier protection (i.e., gloves and gown).

At the same time that the lice-infested inmate is being treated:

- All clothing, sheets, towels, and other washable items used by the inmate in the previous 2 days should be washed in hot water (at least 130°F) and dried on the hot cycle. Alternatively, the laundry can be bagged, sealed, and left undisturbed for 2 weeks—and then processed as regular (uninfested) laundry.
- Personal items of infected inmates such as radios and toiletries, as well as their mattresses and furniture, should be wiped down with a routine environmental cleaning agent. Fumigation of cells or dormitories is not indicated.
- Wash combs and brushes with soap, and rinse in hot (130°F) water for 5–10 minutes.

9. MANAGEMENT OF CONTACTS

- A contact investigation should be conducted to identify possible contacts. Because head lice can be transmitted by casual contact, a wider investigation should be conducted for head lice than for body or pubic lice infestations.
- Contacts should be systematically and thoroughly examined for evidence of lice or nits (ideally utilizing a bright light and a magnifying glass).
- Prior to transfer, any inmate who has been in contact with lice should be screened for lice and medically cleared for transfer.
- Empiric treatment of asymptomatic cellmates is recommended.
- Inmate contacts who are diagnosed with a lice infestation should be isolated from other inmates. A secondary contact investigation should be conducted.
- All staff contacts should be referred for medical evaluation and treatment in accordance with BOP policy.

10. REPORTING

The following should be reported utilizing the BP-A0664, Infectious Disease/Outbreak Report:

- Two or more epidemiologically linked cases of lice
 - An unusual number of cases
 - Cases occurring over a prolonged period
- ➔ *In the event of a lice outbreak, consultation with the Regional or Central Office is recommended to review the situation on a case-by-case basis.*

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APPENDIX 1. INMATE FACT SHEET ON HEAD LICE

What are head lice?

Head lice are insects that can be found on the head, eyebrows, and eyelashes. They live close to the scalp and feed on human blood several times a day.

How are head lice spread?

Head lice are spread by through close contact with a person who has head lice. Head lice can also be spread through objects that have been in contact with a person who has lice, such as hats or pillows.

Tell your health care provider about any fellow inmate who has been in close contact with you. They may also need lice treatment.

What do head lice look like?

Adult head lice are the size of a sesame seed. They have six legs and are tan to grayish-white in color.

Nits are lice eggs that are cemented to the bottom of the hair shaft, close to the scalp. They are difficult to see and are often confused with dandruff or dust.

How is my head lice treated?

1. Carefully place your bed linens, pillows, blankets, and towels, and any unwashed clothes, into large plastic bags so they can be decontaminated.
2. Take a shower and wash your hair. After washing your hair, use your fingers to work the lice medicine into your scalp and throughout your hair. Keep the lice medicine in your hair for the total amount of time recommended by your health care provider. Then, follow instructions for rinsing off the lice medicine.
3. Dry your hair with a clean towel. Place that towel into one of the same plastic bags.
4. Put on clean clothes and use clean sheets.
5. You should have another lice shampoo treatment about one week after the first treatment.

Note: *It may be recommended that your hair be combed with a special lice comb to remove the lice.*

What should be done so I don't get infested again? How should my clothes, sheets, and blankets be handled?

Your sheets, blankets, and worn clothes should be machine washed in hot water (130°F) for at least 10 minutes and then dried on the hot cycle. If this is not possible, these items should be placed in a sealed, plastic bag for at least 14 days. The mattress and pillows should be completely cleaned with a routine disinfectant.

How long do I need to be housed separately?

You must stay in your room and not have contact with others until 24 hours after you have completed your head lice treatment. During that time you cannot leave your room, not even to work.

When should I see my health care provider for follow-up?

You must be re-examined by your provider one week after your treatment is completed, to see if re-treatment is necessary. If your head begins to itch again after you have completed your treatment, you should tell your health care provider as soon as possible. You may need another lice treatment.