INTRODUCTION

There are three types of lice that infest humans (figure 1):

- The head louse
- The body louse
- The pubic louse or "crab"

Head lice are usually spread from one person to another through casual contact. Although head lice can be unpleasant, there are effective treatment options available. It is important to find and treat lice quickly to avoid spreading them to others.

This article discusses the diagnosis and treatment of head lice. Pubic lice are discussed separately. (See "Patient information: Pubic lice (Beyond the Basics)"). A more detailed discussion of head lice is available by subscription. (See "Pediculosis capitis").

HEAD LICE DESCRIPTION

The head louse is a tiny, grayish-white insect. Female head lice typically live for about one month and lay 7 to 10 eggs (called nits) per day. The eggs are attached to the base of a hair, near the scalp. The eggs hatch after about eight days.

After the eggs hatch, the egg cases become easier to see. Since the eggs are firmly attached to the hair, they move away from the scalp as the hair grows. Head lice do not jump or fly, and they cannot spread from person to person by attaching to pets.

Head lice often affect children. In one study, approximately one of every four elementary-level students in the United States had head lice [1,2]. This is because lice are easily spread:

- When children play together
- From articles of clothing on adjacent hooks in classrooms
- On shared combs, headphones, towels, and beds

Black children are affected much less frequently than whites and others, and males less than females; the reasons for this are not known.

HEAD LICE SYMPTOMS
Most people with head lice do not have any symptoms. Some people feel itching or skin irritation of the scalp, neck, and ears. This is caused by a reaction to lice saliva, which the lice inject into the skin during feeding.

**HEAD LICE DIAGNOSIS**

Head lice are diagnosed by examination of the scalp and hair ([picture 1](#)). Special "nit combs" can be used to assist with the diagnosis.

- Before using the fine-toothed comb, use a regular brush or comb to remove tangles. This can be done while the hair is wet or dry. If the hair is wet, apply hair conditioner to make the hair easier to comb.
- Place the fine-toothed comb at the top of the head, touching the scalp. Pull the comb through the hair from roots to ends. After each stroke, carefully examine the comb for lice or eggs.
- Comb the entire head at least twice

Finding eggs (nits) without lice does not necessarily mean that there is an active infestation; nits can be found for months after lice are treated. Because lice lay eggs at the base of the hair shaft, the identification of nits within ¼ inch of the scalp suggests (but does not confirm) an active infestation [3].

Lice can be more difficult to see than nits since they can move and hide from view. A doctor or nurse can examine the head under a special lamp, which causes nits to glow a pale blue color. If you are unsure whether your child has lice, make an appointment for your child to be examined before you start treatment.

Finding head lice can be upsetting to children and parents, but it is important to keep the following in mind:

- Lice are not a sign of being dirty or sick
- You can get rid of lice with proper treatment
- There are no serious or long-term health problems associated with lice

**HEAD LICE TREATMENT**

There are several options for getting rid of head lice, including creams and liquids, combing, and oral medicines (pills). It is important to follow directions carefully to be sure that the treatment works.

If you are sure that your child (over age two years) has head lice, you can use a nonprescription lice treatment (see 'Insecticides' below). Examine family members and close contacts at the same time and treat them if needed. If your child is under age two years, contact the child's doctor or nurse for treatment advice.

**Insecticides** — A topical insecticide (pediculicide) is a substance, usually a lotion or gel, that is applied to the scalp to kill lice. Available insecticides include:

- Permethrin (Nix®, Rid®)
- Pyrethrin (A-200®, Pronto®, Tisit®)
Follow the manufacturer's instructions for applying the insecticide carefully. Typically, you wash the hair with shampoo, rinse it, and towel-dry it. Apply the insecticide cream or gel liberally to the scalp and leave on for 10 minutes before rinsing with water. Malathion (Ovide®) should be left on the scalp for 8 to 12 hours or overnight. Malathion has a bad smell, which can be hard for some people to tolerate.

A second treatment is needed with permethrin, pyrethrin, and benzyl alcohol 7 to 10 days after the first treatment. This is because some lice are able to survive the first treatment. A single application of malathion often is sufficient. However, malathion should be reapplied if live lice are seen seven to nine days after treatment. Treatment with spinosad should be repeated if live lice remain after seven days.

**Wet-combing** — Wet-combing is a way to remove lice from the hair with careful and repeated combing. It is a good option for treating very young children or if you want to avoid using insecticides. However, wet-combing is time consuming and must be repeated multiple times over a period of a few weeks.

Wet the hair and add a lubricant, such as hair conditioner or cream rinse, vinegar, or olive oil. See above for a description of how to wet-comb. (See 'Head lice diagnosis' above.) The combing session should take 15 to 30 minutes, depending how long and thick the hair is. Comb every three to four days for two weeks AFTER you find any large, adult lice.

**Oral medicines** — Oral medicines (a pill) might be prescribed for people whose lice are resistant to insecticide treatment.

**Other treatments** — Studies have examined lotions and other materials (olive oil, butter, mayonnaise, petroleum jelly (Vaseline®)) that are applied to the head, and then allowed to dry, with the goal of suffocating lice. However, lice are difficult to suffocate; wet-combing probably works as well and is less messy.

Lice treatments that use gasoline or kerosine are toxic and can lead to serious injury and should not be used.

We do not recommend any of these "natural" treatments.

**PREVENTING HEAD LICE SPREAD**

Adults and children who live with a person diagnosed with lice should be examined for lice and treated if needed. Anyone who sleeps in the same bed should be treated for lice, even if no lice or eggs are found.

School policies differ about who at a school, if anyone, needs to be informed when a child has lice. A confidential call or visit with the school nurse is a good place to start. Some schools have a "no nits" policy that prevents a child from returning until no nits are found. However, most experts believe that children can return to school after one treatment with insecticide or the first wet-combing session.

Clothing, bedding, and towels used within 48 hours before treatment should be washed in hot water and dried in an electric dryer on the hot setting. Dry cleaning is also effective. You can use a vacuum to clean furniture, carpet, and car seats. Items that cannot be washed or vacuumed can be sealed.
inside a plastic bag for two weeks. Items that the person used more than two days before treatment are not likely to be infested because head lice cannot survive off the body for more than 48 hours.

You do not need to have your home sprayed for lice. Routine cleaning and vacuuming is all that is needed to remove lice.

WHERE TO GET MORE INFORMATION

Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

   The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

Patient information: Lice (The Basics)

   Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

Patient information: Pubic lice (Beyond the Basics)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

Approach to the patient with a scalp eruption
Pediculosis capitis
Pediculosis corporis
Pediculosis pubis and pediculosis ciliaris

The following organizations also provide reliable health information.

   • National Library of Medicine


   • Center for Disease Control and Prevention

(www.cdc.gov/lice/)

   • The Nemours Foundation

(http://kidshealth.org/parent/infections/common/lice.html)

UpToDate wishes to acknowledge Kelly Crowley for her contributions to this topic.
References


Three types of lice can live on or close to people's bodies:
(A) Crab lice (also called pubic lice);
(B) Head lice;
(C) Body lice. Courtesy of John T Crissey, MD.
Head lice nits

Numerous head lice nits are attached to the hairs. *Courtesy of John T Crissey, MD.*