

Head lice

Non-Prescription Drugs and Parapharmaceuticals

Dr Rawan Abudalo

Department of Clinical Pharmacy and Pharmacy Practice

Faculty of Pharmaceutical Sciences

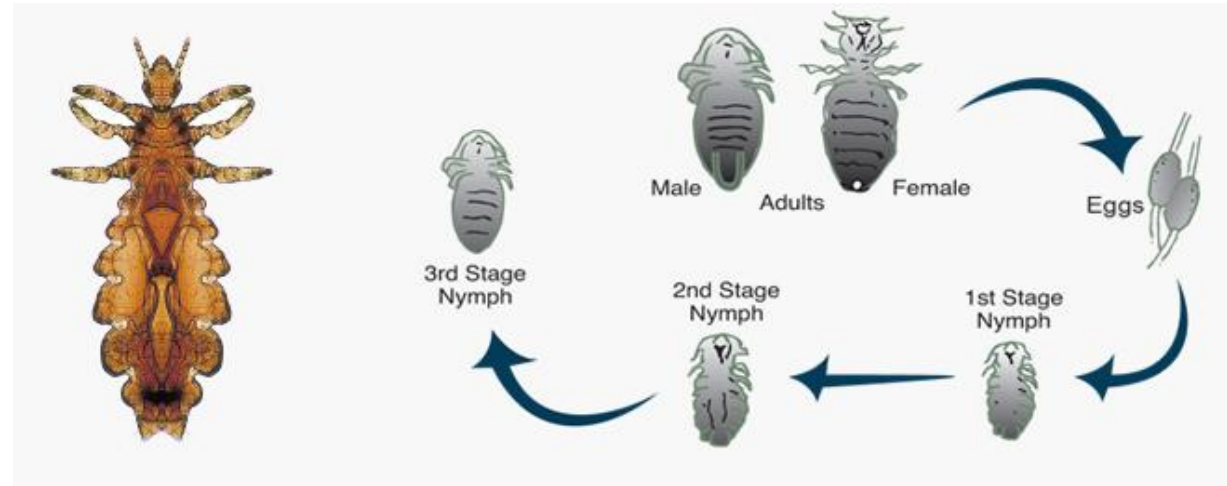
Hashemite University

Head lice

- Is a common condition caused by infestation of the hair and scalp by *Pediculus humanus capitis* (the head louse).
- It lives and reproduce on your head
- Head lice feed on blood from your scalp
- Head Lice are a common disturbance, and are not considered a health hazard

Life Cycle

- Eggs
- Nymphs
- Adults



Transmission

- Person-to-person transmission (direct contact).. **Must transmit live adult louse**
- Adult lice transferred when personal objects are shared: combs, brushes, hats



What you need to know-Age

- Head lice infection is **most commonly found in children**, particularly between 4 and 11 years old
- Girls>boys
- Adult women are occasionally infected
- lice infection is rare in adult men

What you need to know-*Checking for infection*

- Wet combing is the reliable method.
using a fine-toothed comb (tooth spacing) of $<0.3 \text{ mm}$.
- *The hair should be damped or wet.*
- The hair at the nape of the neck and behind the ears should be thoroughly checked.



What you need to know-itching

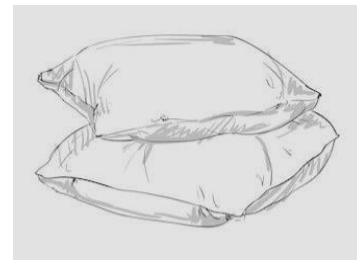
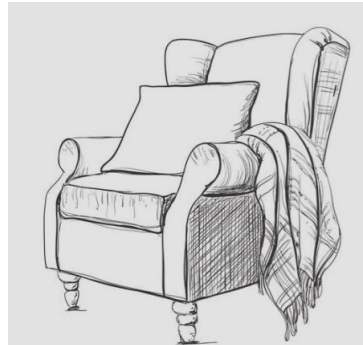
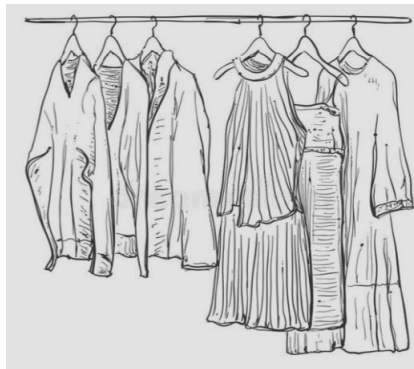
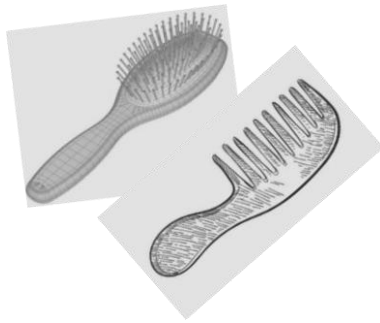
- Contrary to popular belief, itching is not experienced by everyone with a head lice infection.
- it may take weeks for itching to develop.
- The absence of itching does not mean that the infection has not occurred.
- In addition to itching:
 1. a tickling feeling of something moving on your head.
 2. sores that develop from scratching itchy areas.
 3. irritability.
 4. difficulty sleeping.

Steps to Lice Eradication

- **Prevention**: Inspect frequently.
- **Treatment**: May include use of lice killing shampoo.
- **Treatment of Belongings**: Wash bedding and clothing in hot soapy water. Dry using “high heat” cycle.
- **Post-treatment Inspection**: Inspect individuals up to 10 days following treatment and at **4-6 Weeks**

Nonpharmacological Therapy

- ✓ Combing with nit comb
- ✓ Clothing and bedding should be washed in hot water and dried
- ✓ Hair brushes and combs should be washed in very hot water
- ✓ Carpets and furniture should be vacuumed



Management

- Physical insecticides
- Wet combing ('Bug Busting')
- Chemical insecticides
- Complementary therapies

Physical insecticides

- ‘first line’ as they have few adverse effects, and lice do not develop resistance to them.
- MOA: physically coating their surfaces (*dimeticone does this*) or *dissolving the* wax coating of the louse and causing death by dehydration.

Physical insecticides

- *Dimeticone products (lotions and sprays)* apply to dry hair , left on for 8 h (or overnight) and washed out with shampoo.
- usually repeated 7 days later
- Cause irritation if it gets into the eyes
- *Isopropyl myristate/cyclomethicone solution, applied to dry hair and washed out after 10 min*



Chemical insecticides - **Permethrin**

- Well-tolerated and inexpensive treatments.
- The product is applied to damp hair that is first shampooed with a non-conditioning shampoo and then towel dried.
- The hair should be thoroughly saturated with undiluted permethrin (25-30 mL) , which should **remain on the hair for 10 min. then rinsed.**
- This is not now generally recommended because of its short contact time and resistant rate is high



Permethrin

- However, conditioners and silicone-based additives present in almost all currently available shampoos impair permethrin adherence to the hair shaft and reduce its residual effect.
- Although many **repeat the application sometime between day 7 to 10 after treatment if live lice are seen, new evidence based on the life cycle of lice suggests that retreatment at day 9 is optimal.**

Adverse effects

Pyrethrins → Irritation and itching

Permethrin → Irritation and burning



Contact with eye and mucous membrane should be avoided



Should not be used in children younger than 2 years



In pregnancy and breastfeeding , **pyrethrin** is considered the choice of treatment , but medical consultation should be indicated before self-treatment

Prescription Medications

1. Malathion lotion 0.5%;

Brand name product: Ovide*

Malathion is an organophosphate. Malathion lotion 0.5% is approved by the FDA for the treatment of head lice. The formulation of malathion approved in the United States for the treatment of head lice is a lotion that is safe and effective when used as directed. Malathion is pediculicidal (kills live lice) and partially ovicidal (kills some lice eggs). A second treatment is recommended if live lice still are present 7-9 days after treatment. Malathion is intended for use on persons 6 years of age and older. Malathion can be irritating to the skin and scalp; contact with the eyes should be avoided. Malathion lotion is flammable; do not smoke or use electrical heat sources, including hair dryers, curlers, and curling or flat irons, when applying malathion lotion and while the hair is wet.





Table 10.1
Specific questions to ask the patient: Head lice

Question	Relevance
Have live lice been seen?	<p>The presence of live lice is diagnostic. Pharmacists can advise patients on how best to check for infection. Currently, both wet and dry combing are advocated.</p> <hr/> <p>Dry combing:</p> <ol style="list-style-type: none">1. Straighten and untangle the dry hair using an ordinary comb.2. Once the hair moves freely, switch to a detection comb. Starting from the back of the head, comb the hair from the scalp down to the end of the hair.3. After each stroke, examine the comb for live lice.4. Continue to comb all the hair in sections until the whole head has been combed. <p>This process can take 5 or more minutes in people with shoulder-length hair.</p> <hr/> <p>Wet combing:</p> <ol style="list-style-type: none">1. Wash the hair with a normal shampoo.2. Apply hair conditioner.3. Repeat steps 1–4 as for dry combing.4. Rinse out the conditioner. <p>Wet combing is more time-consuming than dry methods and can take up to 10–15 minutes.</p>
Empty egg shells (nits)	<p>This does not constitute evidence of current infestation. This is a common misconception held by the general public, and the pharmacist must ensure that parents seeking treatment have observed live lice. Egg shells are not removed by using insecticides. Patients need to be reassured that the presence of egg shells does not mean treatment failure.</p>
Presence of itching	<p>Itching is not always present in head lice. Inspection of the scalp should be made to check for signs of dandruff, psoriasis or seborrhoeic dermatitis.</p>

Causes of treatment failure in pediculosis

- Misdiagnosis
- Noncompliance
- Failure to follow instructions correctly
- Inadequate quantity of pediculicide applied
- Reinfestation
- Resistance

HINTS AND TIPS BOX 10.1: HEAD LICE

Who to treat?	Only those individuals with an active head lice infestation should be treated.
Products for prevention	No credible evidence exists for any product marketed for prevention. The patient and/or parent should be counselled on when treatment is required.
Treatment failure?	<p>It is recommended that detection combing be performed after any treatment to confirm head lice eradication.</p> <p>For wet combing: Wet combing should be continued if necessary until no full-grown lice have been seen for three consecutive sessions.</p> <p>For insecticides, dimeticone and isopropyl myristate: Perform detection combing (wet or dry) 2–3 days after completing treatment. If no adult or nymph lice are found, repeat detection, combing 8–10 days after treatment. Treatment is successful if no lice are found in both detection combing sessions after treatment.</p>
Myths	<p>Public misconceptions about head lice need to be dispelled.</p> <p>Head lice are not only associated with dirty hair.</p> <p>Head lice do not only affect children.</p> <p>Children should not be kept from attending school.</p>

Head lice myths

- **The following additional facts may** reassure and inform patients and parents of patients.:
 1. No significant difference in incidence occurs among the various socioeconomic classes or races.
 2. Hygiene and hair length are not contributing factors.
 3. Head lice do not fly or jump from person to person.
 4. Head lice do not carry other diseases.
 5. The head does not have to be shaved to get rid of lice.
 6. Hair does not fall out as a consequence of infestation.
 7. Head lice infestations can occur at any time of the year .