Head lice (Pediculosis)

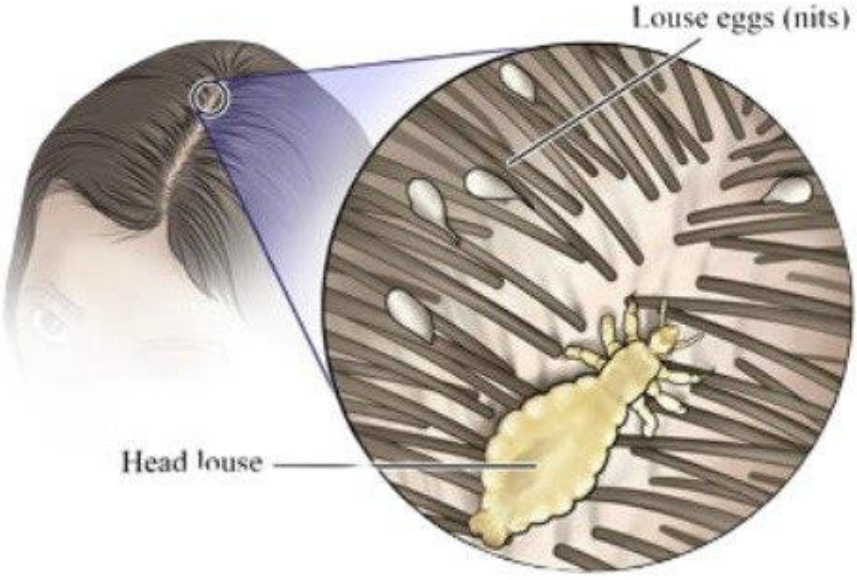
Background:

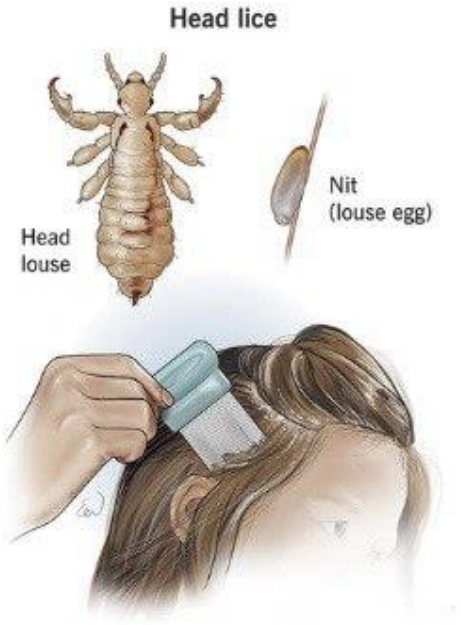
Head lice infestation (or infection) is most commonly found in children, especially around the age of **4-11** years old with girls showing higher incidence than boys (this may be because girls often huddle together when playing). While the older children and adults are less prone to infestation.

Infection is spread by **direct head -to-head contact**, and possibly by transfer through contact with infected hairbrushes, hats, pillows, etc., although lice cannot survive for long away from the scalp (Lice are unlikely to be transmitted through short, incidental contact between individuals) because head lice can't fly, jump or swim. Moreover, they cannot survive away from the host for more than **12 hours.**

The main risk factors for infestation with head lice (pediculosis) are being of primary school age or having a young child in the family. **Having unwashed hair or long hair is not a risk factor and neither is low social class**.

Head lice infestation rarely causes physical problems and head lice are **not known to be vectors for infectious diseases**. The adult louse lives for approximately **1 month** during which the female louse lays several eggs at the base of hair shaft each night.





Patient Assessment with Head Lice

A-Have live lice been seen?

1-The presence of live lice is diagnostic. Treatment should be reserved for infected heads. Many parents are worry that their children may catch lice and wish the pharmacist to give their prophylactic treatment. Insecticides should never be used prophylactically, since this may accelerate resistance. However, a lice repellent is now available.

2- Pharmacists can advise patients on how best to check the infection. Wet combing of the hair is a more reliable detection method than scalp inspection. Parents can easily check for infection by combing the child's hair over a piece of white paper, using a fine -toothed comb. The hair should be damp or wet to make the combing process easier and less painful. If live lice are present, some will be combed out of the hair and onto the paper.

3-The hair at the **nape of the neck and behind the ear** should be thoroughly checked. These spots are preferred by the lice because they are warm and relatively sheltered.

B-Presence of empty egg shells (nits):

The presence of nits is not necessary evidence of current infection (**common misconception**) unless live lice are also present. Nits are not removed by insecticides. (Because they are firmly glued to the hair). **So, the presence of nits does not mean treatment failure**. A fine-toothed comb can be used to remove the nits after treatment.

C-Itching:

Contrary to the popular belief, **itching is not experienced by everyone with head lice** (i.e. absence of itching does not mean that infection does not occur). [Itching is an allergic response to saliva of the lice which injected into the scalp during feeding; therefore, sensitization does not occur immediately but may take weeks to develop (thousands of bites from the lice are required)]. But in case of re -infection, itching may be quickly begun.

D-Previous medications:

While it is possible that treatment failure may occur, this is unlikely if a recommended insecticide has been used correctly.

Pharmacist advice as a preventive measure

1-Avoid direct contact with infected patients.
2-Do not share articles such as combs, brushes, hats and towels
3-Use hot water to wash hairbrushes and combs of patient for 10 minutes.
4-Use hot water to wash clothes, bedding, and towels of patient.

Note: Shaving the head is not an effective treatment because lice can cling to as little as 1 mm of hair.

Treatment:

There are three treatment options:
A-Insecticides: permethrin, lindane and malathion.
B-Dimeticone and isopropyl myristate (physical insecticides).
C-Wet-combing.
Recent trials report cure rates of 70 -80 %, 70 %, and 50 -60 %, for insecticides, dimeticone and wet combing respectively.

Note: Itching can persist after infestation has been cleared. For troublesome itching a sedating antihistamine may be recommended

Practical points

1-It is generally recommended to **treat all family members at the same time** to prevent reinfection from other family member. Another approach is to treat only those with confirmed infection and to check the hair of other family member on regular basis (but it required a high level of motivation).

2-Some eggs may survive after the first application; therefore, **a second application 7 days later is now recommended** to kill any lice that emerged from eggs. (The incubation period for head lice is 7 -10 days.

3-Parents are often are **embarrassed that their child has head lice**, but pharmacist should reassure them that this is not a sign of poor hygiene (Head lice are not only associated with dirty hair).

4-Children should not be kept off school.

5-Alcoholic and Aqueous lotions:

If available, aqueous lotion is preferred for small children and for asthmatics.

Alcoholic lotions can cause some problems:

A-Alcohol can cause stinging when applied to broken skin (e.g. eczema).

B-Evaporation of alcohol may irritate the lung and can precipitate an asthmatic's attack (the risk is rare but the caution is still advised). In addition, when an alcoholic lotion is used the hair should be kept away from naked flame.

6-Application of solution: The most effective method of application is to sequentially part sections of the hair and then apply a few drops of the treatment, spreading it along the parting into the surrounding scalp and along the hair.

Approximately 50 –55 mL of lotion should be sufficient for one application, although people with very thick or long hair may need more.

7-Wet-Combing method: Wet combing, or bug busting, can break the life cycle of head lice
(physically remove the lice and nymphs).

Effectiveness of this method is very dependent on repeated use (every 3 days) over a period of 2 weeks.

8-All products, except isopropyl myristate, can be used on children older than 6 months.

9-Pregnant women:

Pregnant women with head lice should be advised to use dimeticone or to wet comb.

Wet-Combing method

1-Wash the hair as normal.

2-Apply conditioner liberally. (This causes the lice to lose their grip on the hair.)

3-Comb the hair through with a normal comb first.

4-With a fine -toothed nit comb, comb from the roots along the complete length of the hair and after each stroke checks the comb for lice and wipe it clean. Work over the whole head for at least 30 min.

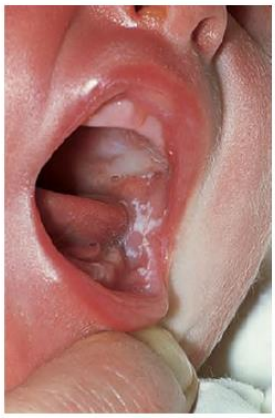
5-Rinse the hair as normal.

6-Repeat every 3 days for at least 2 weeks.

Guideline of drugs for head lice		
	Drug	Method of use
1	Permethrin 1% cream rinse	The 1% cream rinse is applied in sufficient quantities to cover or saturate washed hair and scalp. It is left on the hair for 10 minutes before rinsing; the hair is then combed with a lice comb.
2	Malathion (0.5% liquid)	Rub preparation into dry hair and scalp, allow to dry naturally, remove by washing after 12 hours (or overnight).
3	Isopropyl myristate lotion and spry (only recommended for adults and children over the age of 4 years)	The lotion and spry are applied to dry hair ensuring that they are evenly distributed over dry hair. Rinsed after 10 minutes.
4	Lindane (gama benzene hexachloride) 1% Shampoo	Rub into the affected area, leave in place for 4 minutes then wash.
5	Dimeticone 4% Lotion & Spray	The lotion is applied to dry hair ensuring that it is spread evenly from the hair root to the tips. The spray should be applied approximately 10 cm from the hair making sure it is evenly distributed over dry hair. Both need to be left on for a minimum of 8 hours (overnight is preferable) before being washed out with shampoo

Note: After washing the product, the hair should be combed with a fine -toothed comb while it is still wet, to remove dead and dying lice from the scalp and empty egg cases attached to the hair shafts.

Oral thrush



Thrush (Candidiasis) is a fungal infection caused by **Candida albicans** which occurs commonly in the mouth (**oral thrush**). It is common in new born babies because they can pick up the organism during passage through an infected birth canal. It may also occur in the vagina and in the in the baby's nappy area.

Patient Assessment with Oral Thrush:

A-Age:

Oral thrush is most common in babies. In older children and adults it is rare and it may be a sign of immunosuppressant and referral to the Dr. is advisable.

B-Affected area:

Oral thrush can occur anywhere in oral cavity (**mainly on the surface of the tongue** and insides of the cheeks).

C-Appearance:

Oral thrush occurs as a creamy **white soft elevated patches which resemble milk curds** (but oral thrush differ from milk curds in that it is **not so easily removed** and when it is scraped , a sore and reddened area will be seen which may sometimes bleed).

D-Previous history:

Patients who experience recurrent infections should be referred for further investigations.

E-Medications:

1-Broad spectrum antibiotics can predispose to oral thrush.

2-Immunosuppressive agents: like cytotoxic and steroids (oral or inhaled) can predispose oral thrush (Rinsing the mouth with water after the use of inhaled steroid may be helpful.

Treatment timescale

If symptoms are not cleared within 1 week, then patient should see a doctor.

Management

Miconazole Oral Gel:

1-The only specially formulated product currently available for sale OTC to treat oral thrush is miconazole gel

2-Preparations containing **nystatin oral suspension** are also effective but are restricted to prescription only status.

Dose for infants and children under 2 years is:

A-Neonate: 1 mL 2 –4 times a day treatment should be continued for at least 7 days after lesions have healed or symptoms have cleared, to be smeared around the inside of the mouth after feeds.

B-Child 1 month –1 year: 1.25 mL 4 times a day, treatment should be continued for at least 7 days after lesions have healed or symptoms have cleared, to be smeared around the inside of the mouth after feeds.

Practical points

1-Patients should be advised to **hold the gel in the mouth for as long as possible**.

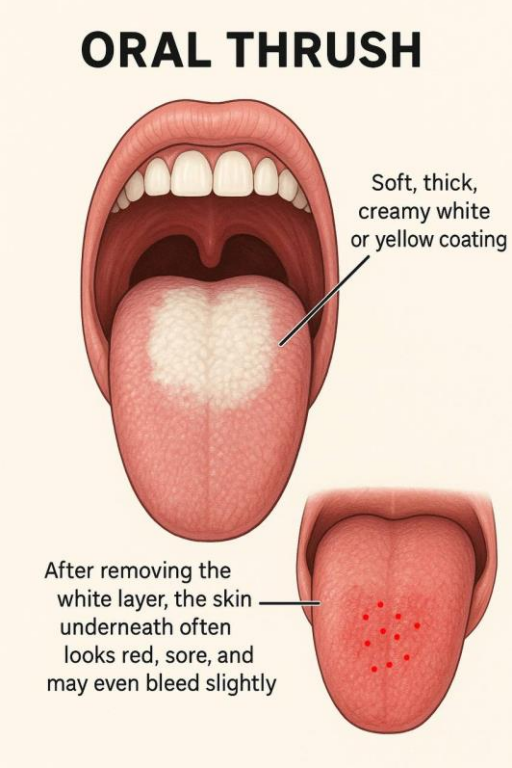
2-For young babies, the gel can be applied directly to lesion using a cotton bud or the handle of a teaspoon.

3-Treatment may be enhanced by cleaning the white plug off with a cotton bud prior to the application of the gel.

4-The pharmacist should check **whether nappy rash is also presents** [in the napkin area, candidal infection present as red papules on the outer edge of the area of napkin rash (satellite papules), another feature is that the skin in the skin folds is nearly always affected.

In this case an antifungal cream containing miconazole or clotrimazole can be used for the nappy area.

5-Where the mother is breast feeding; a small amount of miconazole gel applied to the nipple will eradicated any fungus present.



Threadworms (Pinworms)

Infection with threadworm (**Enterobius vermicularis**) is common in young children. Eggs are transmitted to the human most primarily by the fecal oral route (e.g. eggs lodging under fingernails) which are ingested by finger sucking after anal contact. Eggs can survive for up to a week outside the human host.

Patient assessment with pinworms

A-Clinical feature

1-Perianal itching is the classic presentation. Any child with **night -time** perianal itching is almost certain to have threadworm (females worms emerge from the anus at night to lay their eggs on the surrounding skin. The eggs are secreted together with a sticky irritant fluid onto the perianal skin.

2- The intense itching is caused by the sticky secretion. Itching can lead to sleep disturbances resulting in irritability and tiredness the next day.

3-In girls, migration to the vagina can cause intense irritation, which may be confused with thrush.

4-Diagnosis can be confirmed by observing threadworm on the stool (white - or cream -colored thread -like objects, about 10 mm in length and less than 0.5 mm in width. The worms can survive outside the body for a short time and hence may be seen to be moving.

5-Itching without sighting the threadworm may be due to other causes such as allergic dermatitis caused for e.g. by soaps.

6-Complicating factors such as secondary bacterial infection of the perianal skin can occur due to persistent scratching. The parent should be asked if the perianal skin is broken or weeping.

B-Other family members

The pharmacist should enquire whether any other member of the family is experiencing the same symptoms. However, the absence of perianal itching and threadworms in the faeces does not mean that the person is not infected **(during the early stages, these symptoms may not occur)**

C-Recent travel abroad

If any infection other than threadworm is suspected, patients should be referred to their doctor for further investigation. If the person has recently travelled abroad, this information should be passed on to the doctor so that other types of worms can be considered.

When to refer
-Infection other than the threadworm suspected. **-Recent travel abroad.** **-Medication failure.** **-Pregnancy and breastfeeding.** **-Children under 2 years.** **-Secondary infection of perianal skin due to scratching.**

D-Medication:

The pharmacist should know about the identity of any recent treatment tried and how the treatment was used. Any treatment failure (correct use without benefit) required referral.

Management:

Mebendazole: (OTC in UK) (Vermox®: tablet and suspension).

1-Dose: for adult and children above 2 years is: 100 mg as single dose. A repeated dose 14 days later is often recommended to ensure worms maturing from ova at the time of the first dose are also eradicated.

2-Mebendazole is not licensed for use in children under 2 years of age, in pregnant or breastfeeding women when sold without prescription.

Practical points:

1-Parents are often **anxious and ashamed** that their child has a threadworm, thinking that lack of hygiene is responsible. The pharmacist can **reassure them** that it is a common condition and any child can become infected and **it does not indicate a lack of attention**.

2-All family members should be treated at the same time this is because they may in the early stages of infection and thus asymptomatic.

3-Transmission and re -infection by threadworm can be prevented by the following practice measures:

A-Cutting fingernails short. Hands should be washed after going to toilet and before preparing or eating food.

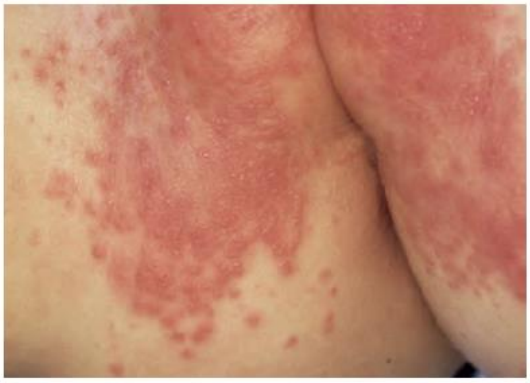
B-Affected members having a bath or shower each morning during the treatment period to wash away the eggs which were laid during the previous night.

C- Change and wash your underwear each day (for 3 weeks).

D- Discourage biting nail and scratching anal area.

4-Pregnant women should be advised to practice hygiene measures for 6 weeks to break the cycle of infection.

Napkin rash (also called diaper dermatitis, nappy rash)



Napkin rash refer to the erythematous rash that appear on the buttock area during infancy. **Contributing factors includes**:

1-Contact of urine and faeces with the skin.

2- Wetness of the skin due to infrequent nappy changes and inadequate skin care.

Patient Assessment with Napkin Rash.

A-location:

Napkin rash affect the diaper region (buttock, lower abdomen, and the inner thighs) therefore, involvement of rash away from nappy area required referral.

B-Severity

1-In general, if the skin is unbroken and there are no signs of bacterial infection, treatment may be considered.

2-If signs of bacterial infection are present (weeping, yellow crusting, oozing blood or pus), then referral is required.

3-Secondary fungal infection is common [characterized by the presence of satellite papules (small red lesions near the perimeter of the affected area)], then pharmacist can recommend one of the OTC azole antifungals.

C-Duration:

Napkin rash of **longer than 2 weeks** duration may be referred.

D-Previous history:

To identify the identity and effectiveness of any products used for the current or previous episodes.

Treatment timescale:

A baby with nappy rash that does not respond to skin care and OTC treatment within 1 week should be seen by the doctor.

Management:

A-Skin care:

1- Nappies should be changed as frequently as possible.

2-Nappies should be left off wherever possible so that air is able to circulate around the skin and helping in drying the skin.

3-At each nappy change, the skin should be cleansed thoroughly with warm water and then dried carefully. The use of talc powder may be helpful, but the clumping of the powder can lead sometimes to further irritation. Talc powder should be applied to dry skin and dusted lightly over the nappy area.

Note: powder is poured into the hands then gently rubbed onto the skin but keep away from the face of the child to prevent inhalation of the powder which may lead to breathing problems.

B-Skin protectants (barrier preparation, emollient):
1-Examples: Zinc oxide, castor oil, talc powder, white petrolatum, calamine, cetrimide (celavex® cream: which has antibacterial property also) …….

2-They absorb moisture or prevent moisture from coming in contact with the skin (act as a barrier between the skin and outside). Also, they serve as a lubricant in area of the skin in which skin-to-skin friction could aggravate diaper rash.

3-They are applied at each nappy changes after cleansing the skin.

C-Antifungal:
1-Secondary infection with candida is common in napkin dermatitis and the azole antifungals would be effective
2-Miconazole or clotrimazole applied twice daily could be recommended by the pharmacist with advice to consult the doctor if the rash has not improved within 5 days.
If an antifungal cream is advised, treatment should be continued for 4 or 5 days after the symptoms have apparently cleared

3-An emollient cream or ointment can still be applied over the antifungal product.