

Project: Ghana Emergency Medicine Collaborative

Document Title: Skin Infections

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Lice

- Lice are parasitic insects that can be found on people's heads, and bodies
- Human lice survive by feeding on human blood
- Lice found on each area of the body are different from each other. The three types of lice that live on humans are:
 - *Pediculus humanus capitis* (head louse)
 - *Pediculus humanus corporis* (body louse, clothes louse) and
 - *Pthirus pubis* ("crab" louse, pubic louse)

Lice

- Lice infestations (pediculosis and pthiriasis) are spread most commonly by close person-to-person contact
- Found mainly in children who go to school, especially just after the holidays
- Are found in both clean and dirty hair
- Feed on human blood
- Do not always cause itching
- Cannot be killed by regular shampoos but can be eliminated by using special head lice medication
- Do not transmit diseases
- Do not live on pets

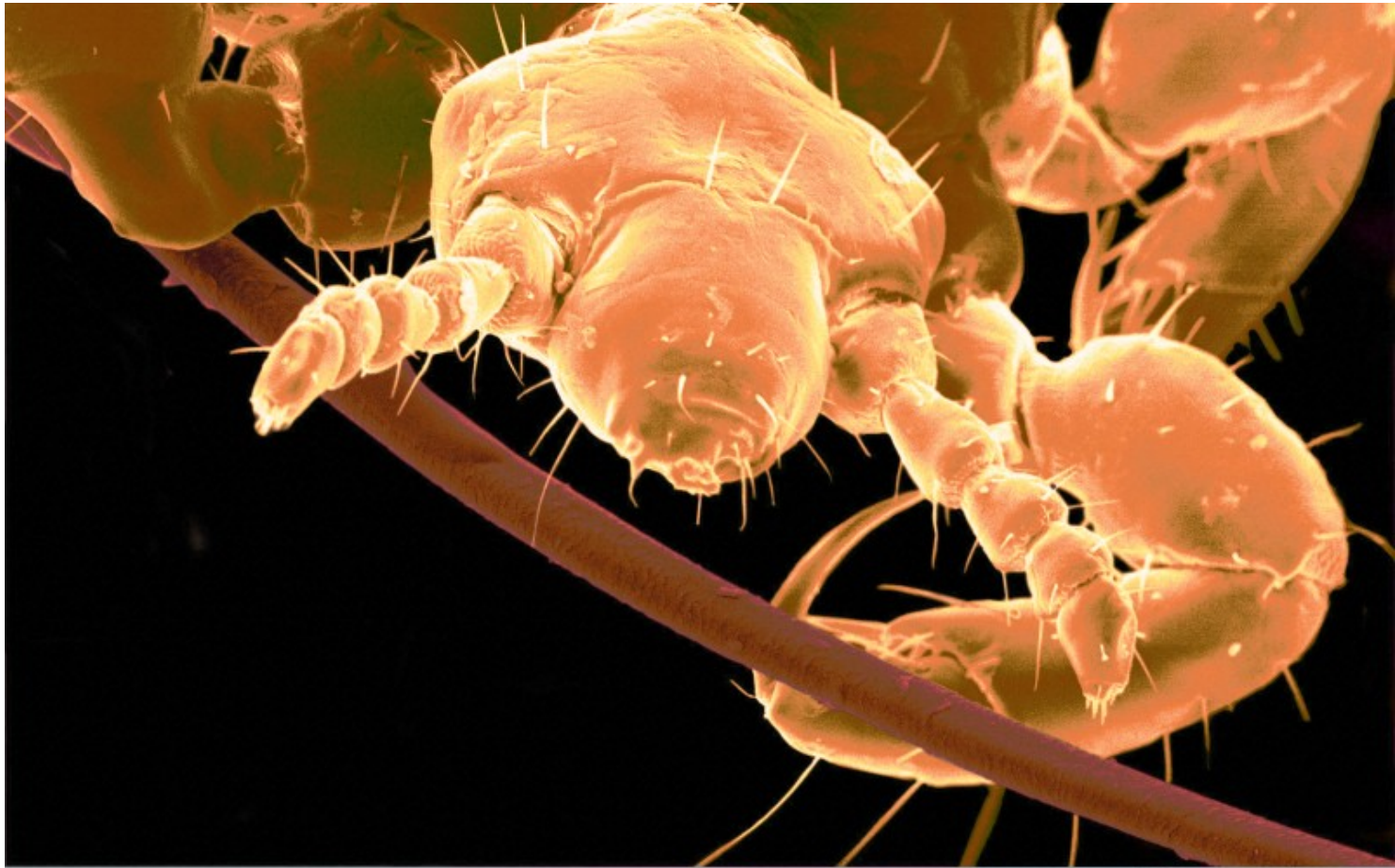
Symptoms

- Itching is hallmark symptom caused by allergic reaction
- Lice bite the skin and feed on person's skin which leads to allergic reaction and itching

Head Lice

- Head lice and their eggs (nits) can be seen on hair, nape of the neck and behind ears
- They can vary in color from white to brown to dark grey
- Eggs are tiny round or oval that are tightly attached to the hair near scalp

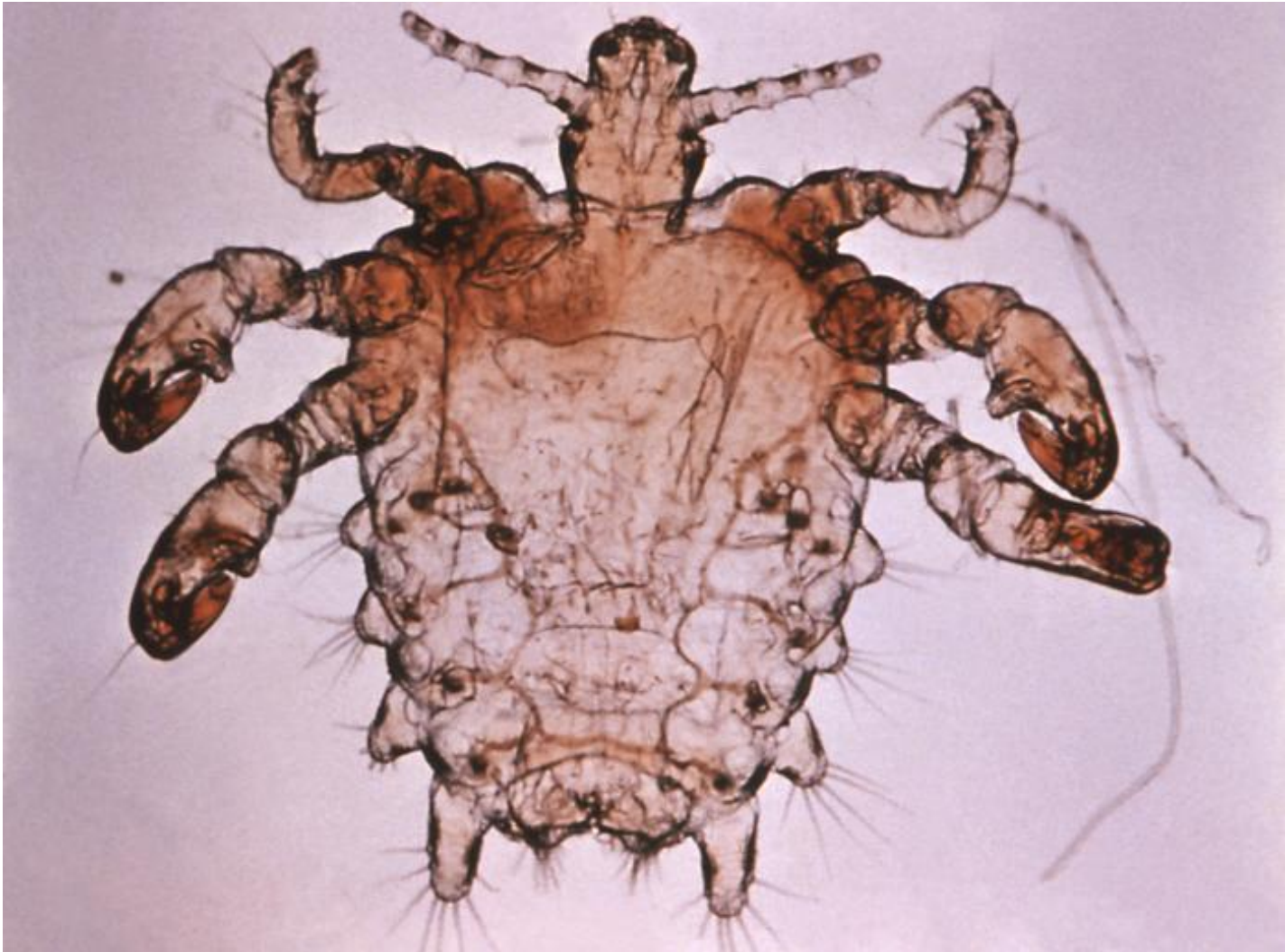
Head Lice



Wellcome Images

Pubic Lice

- Itching around the genitals as well as the anus, armpits, eyelashes, and other body areas with hair
- Pubic lice bites may cause small, flat, blue-gray marks (maculae cerulea) that look like bruises on torso, thighs or upper arm
- Pubic lice that infect eyelashes & eyelids may cause irritation and crusting in those areas
- Pubic lice tends to spread by sexual contact



Body Lice

- Itchy sores usually develop in the armpits, around the waist, and along the trunk where seams of clothes press against the skin
- The lice and eggs are generally not seen on the skin but may be found in the seams of the person's clothing.

Treatment

- Check for live lice and nits
- Work in strong light and section the hair. Use a fine-tooth comb (a pet flea comb works well) to find the insects and to comb them out if possible; or remove them using tweezers
- Adult lice are reddish-brown; nits are white or clear and adhere to the hair shaft. They do not jump or fly
- Medicated shampoo, cream rinse, or lotion to kill the lice

Treatment

- Medicated lice treatments usually kill the lice and nits, but it may take a few days for the itching to stop. For very resistant lice, an oral medication might be prescribed.
- Follow the directions exactly because these products are insecticides
- Applying too much medication — or using it too frequently — can increase the risk of causing harm. Follow the directions on the product label to ensure that the treatment works properly.

Treatment



- Treatment may be unsuccessful if the medication is not used correctly or if the lice are resistant to it
- After treatment, your doctor may suggest combing out the nits with a fine-tooth comb and also may recommend repeating treatment in 7 to 10 days to kill any newly hatched nits.

Treatment

- Check everyone in the household. Lice are very contagious
- Wash all bedding, recently used towels and recently worn clothing in hot water, and dry them in a hot dryer
- Soak all combs and brushes in hot water for at least 10 minutes
- Treat eyelashes and eyebrows with a thick layer of petroleum jelly. Apply twice a day for 8 days. Never use any chemical treatment on eyelashes or eyebrows

Scabies

- Easily spread skin disease caused by a very small species of mite



Scabies

- Eight-legged mite causes scabies in humans is microscopic
- The female mite burrows just beneath your skin and produces a tunnel in which it deposits eggs
- Eggs mature in 21 days, and the new mites work their way to the surface of your skin, where they mature and can spread to other areas of your skin or to the skin of other people
- Close physical contact and, less often, sharing clothing or bedding with an infected person can spread the mites.
- Dogs, cats and humans all are affected by their own distinct species of mite. Each species of mite prefers one specific type of host and doesn't live long away from that preferred host.

Scabies Symptoms

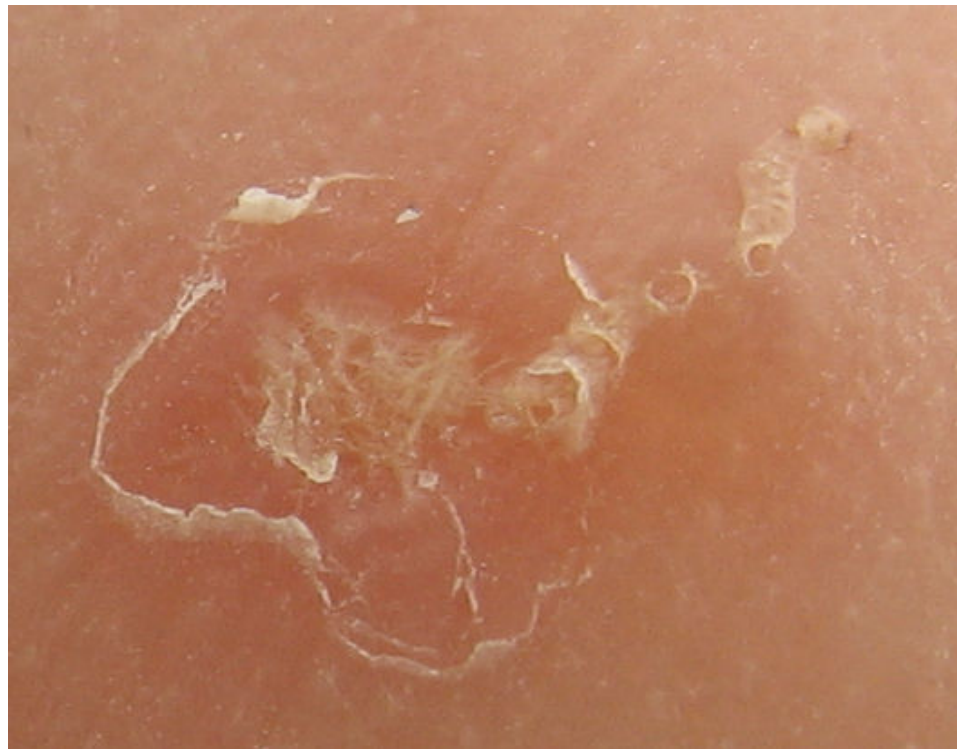
- Mites that cause scabies burrow into the skin and deposit their eggs, forming a burrow that looks like a pencil mark
- Eggs mature in 21 days
- Itching, Rashes, Sores (abrasions) on the skin from scratching and digging
- Thin, pencil-mark lines on the skin
- Mites may be more widespread on a baby's skin, causing pimples over the trunk, or small blisters over palms or soles
- In young children, the head, neck, shoulders, palms, and soles are involved.
- In older children and adults, the hands, wrists, genitals, and abdomen are involved.

Complications of Scabies

- A more severe form of scabies, called crusted scabies, may affect certain high-risk groups, including:
 - People with chronic health conditions that weaken the immune system, such as HIV or chronic leukemia
 - People who are very ill, such as people in hospitals or nursing facilities
 - Crusted scabies tends to be crusty and scaly, and covers large areas of the body. It's very contagious and can be hard to treat

Scabies Diagnosis

- The microscopic examination can determine the presence of mites or their eggs



Treatment

- **Permethrin 5 percent (Elimite)** - twice, with a week or so between each application. Permethrin is generally considered safe for children and adults of all ages, including women who are pregnant or nursing.
- **Lindane** - usually applied in two treatments, spaced about a week apart. This medication isn't safe for children younger than age 2 years, women who are pregnant or nursing, or people with weakened immune systems.
- **Crotamiton (Eurax)** - nonchemical medication is applied once a day for two to five days
- Although these medications kill the mites promptly, you may find that the itching doesn't stop entirely for several weeks

Isolation Precautions

- Contact precautions with protective garments (e.g. gowns, disposable gloves, etc.) when providing care to any patient with crusted scabies until successfully treated
- Wash hands thoroughly after providing care to any patient
- Isolate patients with crusted scabies from other patients who do not have crusted scabies; consider assigning a cohort of caretakers to care only for patients with crusted scabies
- Maintain contact precautions until skin scrapings from a patient with crusted scabies are negative
- Patients with crusted scabies generally must be treated at least twice, a week apart; oral Ivermectin may be necessary for successful treatment.
- Limit visitors for patients with crusted scabies; visitors should use the same contact precautions and protective clothing as staff.

Home Treatment

- **Cool and soak your skin.** Soaking in cool water or applying a cool, wet washcloth to irritated areas of your skin may minimize itching.
- **Apply soothing lotion.** Calamine lotion, available without a prescription, can effectively relieve the pain and itching of minor skin irritations.
- **Take antihistamines.** At your doctor's suggestion, you may find that over-the-counter antihistamines relieve the allergic symptoms caused by scabies.

Prevention

- **Clean all clothes and linen.** Use hot, soapy water to wash all clothing, towels and bedding you used at least three days before treatment. Dry with high heat.
- **Starve the mites.** Consider placing items you can't wash in a sealed plastic bag and leaving it in an out-of-the-way place, such as in your garage, for a couple of weeks. Mites die if they don't eat for a week

Myiasis

- Invasion of tissues by fly larvae, eggs hatch, burrow into skin
- Furuncle with maggots in the center
- *Cochliomyia hominivorax* (Screw worm) MC cause wound myiasis in USA
- *Phormia regina* (Black Blowfly, USA)
- *Dermatobia hominis* (botfly, New World)
- *Cordylobia anthropophaga* (Tumbu Fly, Africa)

Myiasis

- *Hrysomya bezziana* is found in Africa, India, and Southeast Asia. The life cycle and biologic activity of *C. bezziana* is similar to that of *C. hominivorax*
- These larvae burrow deeper into host tissue, only the black tail ends are seen. *C. bezziana* infests wounds, areas of soft skin, and mucous membranes
- Only presenting features of a nasal sinus infestation may be a swollen face associated with headaches, fever, burning nasal pain, and a nasal discharge

Myiasis



Myiasis Symptoms

- Infestation sites are exposed areas such as the extremities, back, and scalp
- Within 24 hours, a papule resembling an insect bite will swell into a boil-like lesion ranging anywhere from 10-35 mm in diameter. Often, there is a small (2-3 mm diameter) pore at the center of the boil which allows the larvae to breathe
- The patient may experience pain, and some have reported feeling the larvae moving around in the tissues.

Treating Myiasis

- Surgical removal with local anesthesia is usually the preferred approach
 - The skin lesion is locally anesthetized with lidocaine and excised surgically followed by primary wound closure
 - Alternatively, Lidocaine can be injected forcibly into the base of the lesion in an attempt to create enough fluid pressure to extrude the larvae out of the puncture
- Treatments include petroleum jelly, liquid paraffin, beeswax or heavy oil, or lard or bacon strips placed over the central punctum and have been used to coax the larva to emerge spontaneously head-first over the course of several hours, at which time, tweezers (or forceps) aid in the capture.

Treating Myiasis

- Larvicides – Ivermectin is a broad spectrum antiparasitic that may kill larvae, or cause them to migrate out of the skin
- Apply topically or as an oral dose
- Mineral turpentine can be effective against *Chrysomya* larvae and may aid their removal in cases of wound myiasis.
- Ethanol spray and oil of betel leaf can be used topically to treat *C. hominivorax* myiasis

Nursing Interventions

- Notify the patient
- Calm the patient and/or staff
- Notify the nurse supervisor or nurse manager
- Locate the policy or protocol to control myiasis
- Use standard precautions, remove larvae (MD or NP)
 - Do NOT smoosh or smash
 - If entire larvae not visible apply petroleum jellyPlace larvae in specimen cup, label with patient name, date, time and send to lab immediately (within 24 hours)

Nursing Interventions

- Place larvae in specimen cup, label with patient name, date, time and send to lab immediately (within 24 hours)
- Clean infected area with sterile saline or hydrogen peroxide
- Document what was done
- Broad spectrum
Ivermectin is prescribed



Prevention

- Use window screens and mosquito netting, insect repellent and insecticides, adequate protective clothing, cover open wounds and change dressings daily
- In the case of *C. anthropophaga*, hang clothes to dry in bright sunlight and/or iron them (the heat destroys both the eggs and larvae)
- Improve hygiene and sanitation (e.g. remove rubbish from around living areas)

Risk Factors

- Poor hygiene
- Open wounds
- Immunocompromised
- Warm climate
- Food containers left uncovered
- Overflowing garbage bins

Case Study

- 65 – year old woman with hypertension and diabetes presents to the emergency room with an ulcer on her right leg. Necrotic tissue and tunneling are present in the wound bed. “Worms” were observed by the nursing assistant. What is the possible clinical presentation?

Case Study

- Answer: Wound Myiasis