Al-Maarif University	Clinical Pharmacy-I	4th Stage	College of Pharmacy

Women's Health

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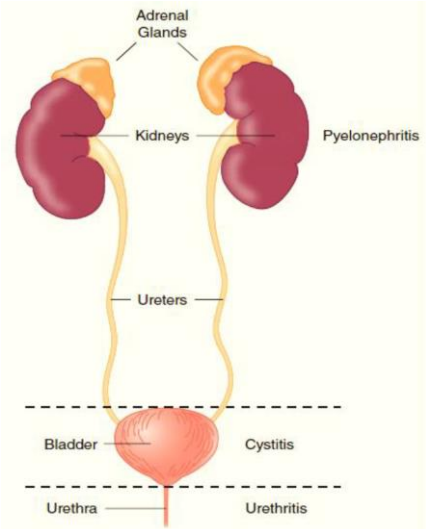
Lecture No. 5

Urinary Tract Infection (UTI)

- Urinary Tract Infection (UTI) is **inflammatory response of the urothelium** (the lining of the urinary tract) due to **bacterial invasion**.
- It is typically associated with the presence of bacteria in the urine (**bacteriuria**) and white blood cells in the urine (**pyuria**).
- UTIs are classified into two main categories based on their location:

1. Lower UTI: Cystitis, Prostatitis

2. Upper UTI: Pyelonephritis



Urinary Tract Infection (UTI)

1. Lower UTI:

- **Cystitis**: inflammation of both the bladder and urethra.
- **Prostatitis**: inflammation of the prostate gland, often considered part of lower urinary tract infections in men.

2. Upper UTI:

- **Pyelonephritis**: infection of the **kidney** and **renal pelvis**, often more severe than lower UTIs and can lead to serious complications if untreated.

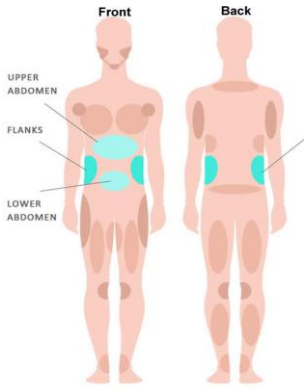
Urinary Tract Infection (UTI)

- UTIs vary in severity, and symptoms can include:

1. Frequent and painful urination,
2. A burning sensation during urination,
3. Cloudy or strong-smelling urine,

- and **In the case of upper UTIS**,

1. Fever
2. Flank pain



- Proper diagnosis and treatment are critical for managing UTIs and preventing complications.

Aetiology of Cystitis & Classification of UTI

- Infection is caused, in most cases, by the patient's own bowel flora that ascend the urethra from the perineal and perianal areas
- Bacteria are thus transferred to the bladder, where they proliferate.
- The most common bacterial organisms implicated in cystitis are:

1. **Escherichia coli** > 80% of cases),
2. **Staphylococcus** (up to 10% of cases)
3. **Proteus**

- Several studies have shown that up to **50% of women do not have positive urine cultures** **(10^5** bacteria/mL of urine), although **they do have signs and symptoms** of infection

Cystitis: Clinical Features

- Symptoms usually **start suddenly** and is characterized by:
- **Pain** when passing urine and is associated with **frequency**, **urgency**, **nocturia** and **changes** to **urine's appearance**.
- In addition, the patient might report **only passing small amounts of urine**, with **pain** worsening at the end of voiding urine.
- **Haematuria** although common should be viewed with **caution** because it might indicate **stones** or a **tumour**.

The differential diagnoses for cystitis

1. **Pyelonephritis**: Upper urinary tract infection with **loin pain** and systemic symptoms like **fever**.
2. **STDs (Chlamydia, Gonorrhea)**: Gradual onset, longer duration, with cloudy, foul-smelling urine.
3. **Parasitic Infections (e.g., Schistosomiasis)**: Associated with **travel** to the Middle East or North Africa.
4. **Estrogen Deficiency**: Common in **postmenopausal women**, leading to tissue thinning and increased irritation.
5. **Contact Dermatitis**: Due to **irritants** like bath additives or vaginal deodorants, causing similar symptoms.

When to refer patients with cystitis

1. All men, and children under 16 years of age
2. Pregnancy
3. Fever, nausea/vomiting
4. Loin pain or tenderness
5. Haematuria
6. Vaginal discharge
7. Duration of longer than 7 days
8. Recurrent cystitis
9. Failed medication

- Note : If symptoms have not subsided within **2 days of beginning the treatment**, the patient should be referred.

Management

- For **pain** relief, offer ***paracetamol* or *ibuprofen*** for up to 2 days.
- **Fever** will also be treated, bearing in mind that a **temperature above 38.5°C** is more characteristic of higher UTI, such as pyelonephritis, and all of these cases should be referred.
- The pharmacist can also recommend a product that will **alkalinise the urine** and provide symptomatic relief, although there is no good evidence of effectiveness.
- In addition to treatment, it is important for the pharmacist to offer advice about **increase fluid intake**.

Urine Alkalinization: Potassium and sodium citrate

- ***Potassium* and *sodium citrate*** work by making the **urine alkaline**.
- **Alkalinisation** of the urine may help to **relieve discomfort of dysuria**, although there is no strong evidence of its benefit.
- Alkalinising the urine does not have an antibacterial effect.
- **Drug interactions**: Patients taking potassium-sparing diuretics, aldosterone antagonists or angiotensin-converting enzyme inhibitors **should not** use **potassium citrate** because it may cause **hyperkalaemia**.
- **Sodium citrate** should not be recommended for **hypertensive** patients, anyone with **heart disease** or **pregnant** women.

Complementary therapies

- **Cranberry juice** has been recommended as a **folk remedy** for years as a preventive measure to reduce UTI.
- Cranberry juice or capsules are also unlikely to be effective in the treatment of acute cystitis.
- Patients taking **warfarin** should not take **cranberry products**.

Practical points for managing cystitis in women:

1. **Hydration**: Drinking the recommended daily amount of fluids may help by promoting frequent urination, which can flush out bacteria from the bladder.
2. **Bladder Emptying**: Encourage complete bladder emptying by waiting a few seconds after urination and gently straining.
3. **Hygiene**: Wipe from front to back after a bowel movement to reduce the risk of transferring bacteria to the urethra.
4. **Post-coital Urination**: Urinating after intercourse may help remove bacteria from the urethra, though evidence is limited.
5. **Avoid Bladder Irritants**: Reducing coffee and alcohol intake may alleviate irritation in some individuals.
6. **Chlamydia Screening**.

Dysmenorrhea

Background:

- The **menstrual cycle** typically lasts around **28 days**, but it can vary, lasting anywhere between **21 and 45 days**.
- **Menstruation** itself usually occurs over **3 to 7 days**.

❑ Dysmenorrhea:

- "**Dys-**" (painful or difficult)
- "**menorrhea**" (menstrual flow),
- The meaning of dysmenorrhea is **painful menstruation**.

❑ Prevalence:

- Approximately **10 % to 15 %** of all women experience pain so severe that it impairs daily functioning.
- **90%** of women report discomfort during at least one menstrual cycle.

Background:

- **Dysmenorrhea is generally classified into two types:**

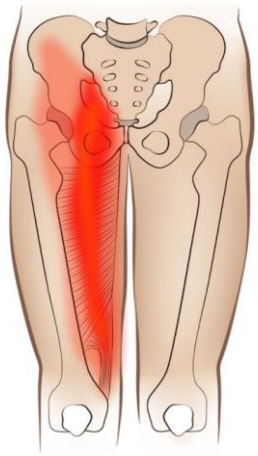
1. **Primary dysmenorrhea (PD)**: Defined as menstrual pain that occurs **without an identifiable organic pathology**.
2. **Secondary dysmenorrhea**: Associated with an identifiable pathological condition, such as **endometriosis**.
   - **Endometriosis** refers to the presence of **endometrial tissue outside of the uterus**.

Primary Dysmenorrhea

- **Primary dysmenorrhea** typically occurs during **ovulatory cycles** and often begins within **6 to 12 months after menarche** (the onset of menstruation).
- During **endometrial sloughing** (the shedding of the uterine lining), **endometrial cells release prostaglandins**—specifically **$PGF_2\alpha$** and **PGE_2**—as menstruation begins. These prostaglandins play a key role in stimulating **myometrial contractions** and **uterine ischemia** (restricted blood flow), which contribute to **the pain** associated with dysmenorrhea.
- Research indicates that women experiencing **severe dysmenorrhea** have **higher levels of prostaglandins** in their menstrual fluid, with **levels peaking** during the **first two days of menstruation**. This correlates with the increased pain intensity during this time.

Primary Dysmenorrhea

- **Duration and Type of Pain**: the pain starts a **few hours before** or **after** the onset of menstruation and **lasts for 48–72 hours**.
- The pain is **cramp-like**, strongest in the **lower abdomen**, and may **radiate** to the **back** or **inner thighs.**
- **Associated Symptoms**: Common symptoms include



1. Nausea, vomiting,
2. Fatigue, diarrhea,
3. Lower backache, and headache.

Referral Indications for Dysmenorrhea and Related Symptoms:

- Patients should be **referred** to a healthcare provider if they experience any of the following:

1. **Heavy or unexplained bleeding.**
2. **Pain occurring several days before menstruation.**
3. **Pain that intensifies at the onset of menstruation.**
4. **New or worsening symptoms in women over the age of 30.**
5. **Systemic symptoms** (e.g., fever, malaise) accompanying dysmenorrhea.
6. **Vaginal bleeding** in postmenopausal women.
7. **Abnormal vaginal discharge.**

Non-Pharmacologic Treatments for Dysmenorrhea

- **Exercise**:
  - Engaging in regular physical activity may help alleviate symptoms by improving **blood flow to the pelvic area**. Exercise can also release **endorphins**, which act as **natural pain relievers**.
- **Dietary Supplements**:
  - **Oral Vitamin E**: Some studies suggest that vitamin E may help reduce menstrual pain.
  - **Fish Oil**: Omega-3 fatty acids in fish oil may have anti-inflammatory effects that can benefit women with dysmenorrhea.
  - **Low-Fat Diet**: Following a low-fat diet may help some women improve their symptoms.
- **Non-Pharmacologic Pain Management**:
  - **Acupuncture**: This traditional Chinese medicine technique may help reduce pain.
  - **Transcutaneous Electrical Nerve Stimulation (TENS)**: This method involves using a device that delivers small electrical impulses to relieve pain.
  - **Psychotherapy and Hypnotherapy**: These approaches can help manage the psychological aspects of pain and stress, potentially improving the experience of dysmenorrhea.
  - **Heat Therapy**: Applying **heat patches** or hot water bottles to the **lower abdomen** can **relax muscles** and alleviate **cramping**.

Primary Dysmenorrhea: Treatment Options

- **Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)**
- NSAIDs, which act as **COX inhibitors**, are highly effective for many women with primary dysmenorrhea. They reduce the production of prostaglandins, thereby alleviating pain.
  - **Examples**:
    - Ibuprofen: 400 mg every 6 hours
    - Naproxen 250 mg every 6 hours
    - Mefenamic acid: 500 mg every 8 hours
- Paracetamol might be used but it is less effective because it does not inhibit PG synthesis
- **Hyoscine butyl bromide (Buscopan® 10 mg tablet) : QID**

Primary Dysmenorrhea: Treatment Options

- **Hormonal Contraceptives**
- Hormonal contraceptives, such as **oral contraceptive pills (OCPs), patches, or transvaginal rings**, can: **reduce menstrual flow**, **inhibit ovulation,** and are effective for managing primary dysmenorrhea.
- **Extended-Cycle Hormonal Contraceptives**: Using extended-cycle OCPs, long-acting injectable, implantable hormonal contraceptives, or progestin-containing intrauterine devices (IUDs) can **minimize the frequency of withdrawal bleeding episodes** and help **reduce dysmenorrhea symptoms** further.

Primary Dysmenorrhea: Treatment Options

- The dosing regimen of a **combined oral contraceptive** pill containing
- **Ethinylestradiol**: 30 micrograms
- **Drospirenone**: 3 milligrams
- **Take 1 tablet once daily for 21 days**.
- **Followed by a 7-day interval** (during which no active pills are taken) to allow for withdrawal bleeding.

Premenstrual Syndrome (PMS)

- **Definition**:
- **PMS** is characterized by cyclical somatic (**physical**), **psychological**, and **emotional** symptoms that occur during the **luteal phase** (the premenstrual phase) of the menstrual cycle.
- These symptoms typically **resolve** by the time menstruation begins.
- PMS is recognized as a **stress-related disorder**.
- **Prevalence**:
  - It is estimated that up to **80% of regularly ovulating women** experience some degree of PMS.

Common symptoms of premenstrual syndrome		
Physical	**Behavioural**	**Psychological**
Swelling	Sleep disturbances	Irritability
Breast tenderness	Appetite changes	Mood swings
Aches	Poor concentration	Anxiety, tension
Headache	Decreased interest	Depression
Bloating/weight	Social withdrawal	Feeling out of control

Premenstrual Syndrome (PMS)

- The **diagnosis** of PMS is confirmed by the **predominant occurrence of symptoms** in the luteal phase as documented on a menstrual calendar of **two consecutive cycles**.

Pathophysiology of PMS

- The precise **pathophysiology** of PMS is still **unclear.** A number of theories have been advanced for example, **excess oestrogen** and a **lack of progesterone** or **ovarian function.**
- Most researchers now believe that PMS **is a complex interaction between ovarian steroids and the neurotransmitters serotonin and GABA.**

Premenstrual Syndrome (PMS) Management

- **Dietary Modifications**:
  - Foods and beverages high in **sugar** and **caffeine** may aggravate premenstrual symptoms in some women.
- **Calcium Supplementation**:
  - Taking **calcium** (600 mg orally twice daily) has shown benefits, likely by decreasing symptoms such as **muscle cramps**.
- **Vitamins**:
  - **Pyridoxine (Vitamin B6)**: may offer relief by acting as a cofactor for serotonin synthesis. The recommended dose is **50 to 100 mg/day**, but it is advised to avoid doses exceeding **100 mg/day** to prevent toxicity.
  - **Vitamin E**: may provide some symptom relief.
- **Magnesium**:
  - Magnesium, particularly when combined with vitamin B6, appears **to help reduce anxiety-related symptoms** associated with PMS.
- **Non-Pharmacologic Alternatives**:
  - **Acupuncture**: May help alleviate symptoms.
  - **Bright Light Therapy**: Can positively affect mood and symptoms.
  - **Exercise**: Engaging in moderate exercise for **20 to 45 minutes** three times weekly can help improve overall well-being and reduce symptoms.
  - **Smoking Cessation**: Quitting smoking may alleviate premenstrual symptoms.
  - **Omega-3 Fatty Acids**: These may have anti-inflammatory effects and help reduce PMS symptoms.

Pharmacologic Treatments for Premenstrual Syndrome (PMS)

- **Selective Serotonin Reuptake Inhibitors (SSRIs)**:
  - **Fluoxetine**: Administered at dosages of **20 to 60 mg per day** during the luteal phase (14 days prior to expected menses) can provide significant symptom improvement.
  - **Sertraline**: Taken at **50 to 150 mg per day**, is equally effective in managing PMS symptoms.
- **Combined Oral Contraceptive Pills (COCPs)**:
  - The most effective preparation appears to be **Yasmin™**, which contains **drospirenone**, that acts as an **anti-mineralocorticoid** and **anti-androgen**.
  - The most effective regimen involves taking **two or three packets in a row without a scheduled break** to **minimize hormonal fluctuations** that can **exacerbate PMS symptoms**.

Pharmacologic Treatments for Premenstrual Syndrome (PMS)

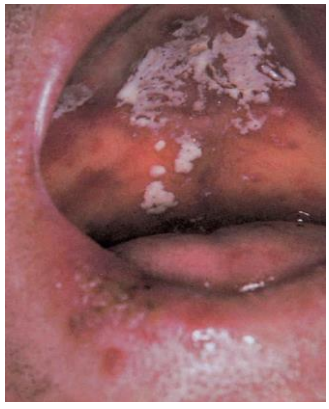
- **POM medications**
- **Anxiolytics**:
  - **Alprazolam**: Dosed at **0.25 mg** 3-4 times daily can help **reduce anxiety** and **mood-related symptoms**.
  - **Buspirone**: Administered at **5 mg TID** may also be effective for **anxiety** relief.
- **Diuretics for Fluid Retention**:
  - **Hydrochlorothiazide**: 25 to 50 mg daily may be used to alleviate fluid retention.
  - **Spironolactone**: At a dosage of **100 mg per day**, can help manage fluid retention and has additional benefits due to its anti-androgenic properties.

Oral Thrush: Background

- Oral thrush, or **candidosis**, is a fungal infection caused by ***Candida albicans***.
- It commonly affects **Newborns**.
- Oral thrush is prevalent in newborns, as they can acquire the **infection during birth** if passing through an infected birth canal.
- **Affected Areas**: It primarily affects the **mouth** but can also occur in the **diaper area** in infants due to moist environments that favor fungal growth.

Oral Thrush: Clinical Features

- **Location**: Oral thrush can appear anywhere in the oral cavity, primarily on the **surface of the tongue** and **insides of the cheeks**.
- **Appearance**: It presents as **creamy white, soft, elevated patches** that resemble milk curds. However, unlike milk curds:
  - Thrush patches are not easily removed.
  - Scraping may reveal a **red, sore area that may sometimes bleed**.
- Patients complain of **malaise** and **loss of appetite**.
- **Medications**: can predispose to oral thrush such as **Broad spectrum antibiotics** and **Immunosuppressive agents**



Management of Oral Thrush

- In neonates, spontaneous resolution can occur but can take **a few weeks**
- **Miconazole Oral Gel:**
  - The only over-the-counter (OTC) product specifically formulated for **oral thrush**.
- **Nystatin Preparations**:
  - Also effective but require a **prescription only**.
- **Dosage for Infants and Children Under 2 Years:**

A. Neonate:

- **Dosage: 1 mL, 2–4 times** a day for at least **7 days** after lesions have healed or symptoms have cleared.
- **Administration:** To be smeared around the inside of the mouth after feeds.

B. Child (1 month to 1 year):

- **Dosage: 1.25 mL BID** for at least **7 days** after lesions have healed or symptoms have cleared. **Administration:** To be smeared around the inside of the mouth after feeds.

Management of Oral Thrush

- **Practical Points for Treatment**

1. Patients should be advised to **hold the gel in the mouth for as long as possible** to enhance its effectiveness.
2. For young babies, the gel can be **applied directly to the lesion** using a cotton bud, spoon, or the handle of a tea spoon.
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 for the presence of nappy rash in the napkin area**. A candidal infection may present as red papules on the outer edge of the nappy rash (satellite papules), and the skin in the folds is nearly always affected. In such cases, an **antifungal cream containing miconazole or clotrimazole** can be used for the nappy area.
5. For breastfeeding mothers, **a small amount of miconazole gel applied to the nipple** will eradicate any fungus present.

Nappy Rash (Diaper Dermatitis)

- Nappy rash refers to the **erythematous rash that appears on the buttock area during infancy**.
- **Contributing factors include:**

1. Contact of urine and feces with the skin.
2. Infrequent nappy changes and inadequate skin care.
3. Wetness of the skin due to prolonged exposure to moisture.

Patient Assessment with Napkin Rash

- Napkin rash affects the diaper area, including the **buttocks**, **lower abdomen**, and **inner thighs**.
- **Rash spreading outside this area may require medical referral**.

❑ **The Severity of napkin rash :**

- **Mild Cases**: If skin is unbroken and there are no signs of infection, treatment may be considered without referral.
- **Infected Cases**: If there is weeping, yellow crusting, oozing blood or pus, **referral** is necessary.
- **Fungal Infection**: Common, marked by "**satellite papules**" (small red lesions near the perimeter of the rash). OTC antifungal treatments may be recommended.

Patient Assessment with Napkin Rash

- **Duration:**

Any rash **lasting longer than two weeks** may require **referral**.

- **Treatment Timescale:**

If no improvement is seen after **one week of OTC treatment and skincare**, a doctor's consultation is recommended.

Management of Napkin Rash

❑**Skin Care:**

1. **Frequent Diaper Changes**: Change nappies often to reduce skin exposure to irritants.
2. **Air Drying**: Allow the area to air dry by leaving nappies off when possible.
3. **Gentle Cleansing**: Use warm water for cleansing and ensure the area is thoroughly dried.
4. **Powder Use**: Talc powder can be used sparingly, applied to hands first, and kept away from the child's face to prevent inhalation.

Management of Napkin Rash

❑Skin Protectants (Barrier Preparations, Emollients)

- **Examples: Zinc oxide, castor oil, talc powder**, w**hite petrolatum, calamine, cetrimide** (Celavex®) cream, which also has antibacterial properties, etc.
- **Function:**

1. They absorb moisture or prevent moisture from coming into contact with the skin, acting as a barrier between the skin and the external environment.
2. They also serve as a lubricant to reduce friction, which could aggravate diaper rash.

- **Application:** After cleansing the skin at each nappy change, these products should be applied to the affected area.

Management of Napkin Rash

❑Antifungal Treatments

- Secondary infection with Candida is common in nappy dermatitis, and azole antifungals are effective.
- **Recommended Treatments: Miconazole** or **clotrimazole** can be applied **twice daily**. Referral to a doctor if the rash has not **improved within 5 days**.
- **Treatment Duration:** If an antifungal cream is advised, treatment should continue for 4 or 5 days after symptoms have apparently cleared.
- **Emollient Use:** An emollient cream or ointment can still be applied over the antifungal product.

Threadworm (Pinworm)

- In Western countries, the most prevalent helminth infection is caused by **threadworm (*Enterobius vermicularis*)**, also known as **pinworm** in some regions.
- The adult worm remains attached to the large intestine (cecum, appendix and adjacent portion of colon) by their mouth end.

Threadworm: Life Cycle

- Eggs are **transmitted** to the human host primarily by the **faecal-oral route** (autoinfection) but also by infection and inhalation.
- **Faecal-oral transmission** involves eggs lodging under fingernails.
- After the ova are **swallowed**, development takes place in the small intestine, but the adult worms are found chiefly in the colon.

Threadworm (Enterobius vermicularis): Clinical Features

- **Asymptomatic Infections**:
  - Approximately **one-third** of infections may be **asymptomatic**.
- **Classic Symptoms**:
  - **Nighttime Perianal Itching**: This is the hallmark symptom, caused by the **mucous** produced by threadworms when laying eggs. The **itching** often leads to **sleep disturbances**.
- **Genital Involvement**:
  - In females, the **genitalia** may also be affected due to the migration of worms, leading to irritation or inflammation.
- **Visibility of Adult Worms**:
  - Adult worms may sometimes be seen **moving on the buttocks** or in the stool, especially after the worms lay eggs.

Threadworm (Enterobius vermicularis): Management

- **Pharmacological Treatment:**
  1. **Mebendazole**: A single dose of **100 mg**.
  2. **Albendazole**: A single dose of **400 mg**.
  3. **Pyrantel Pamoate**: **11 mg/kg**, with a maximum dose of **1 g**.
  4. **Piperazine**: A single dose of **4 g**.
- **Follow-Up Treatment:**
- The same treatment should be **repeated after 2 weeks** to eliminate any worms that may have hatched from eggs during the intervening period.
- **Treatment of Household Members:**
- It is recommended to treat **all household members**, including **asymptomatic** individuals, to reduce the risk of reinfection and eliminate reservoirs of the infection.

Threadworm (Enterobius vermicularis): Prevention and Control Measures

- **Hand Hygiene**:
  - Emphasize the importance of **hand washing**, particularly after using the toilet and before meals.
  - Keeping **fingernails short** can help prevent egg accumulation and transmission.
- **Washing of Bed Linen**:
  - Regular washing of **bed linens**, **clothing, and towels** in hot water can help eliminate eggs and prevent reinfection.
- **Treatment Compliance**:
  - Ensure that **infected persons and household members** adhere to treatment regimens to effectively control and eliminate the infection.

Head Lice (Pediculosis)

- **Infestation Prevalence:** Head lice infestation is most commonly found in children, especially 4 and 11 years old.
- Girls show a higher incidence than boys.
- Older children and adults are less prone to infestation.
- **Transmission:** Infection is spread by **direct head-to-head contact**. It may also occur through **contact with infected hairbrushes**, **hats**, **pillows**, etc.
- However, lice **cannot** survive long away from the scalp (> 12 hours) and **cannot fly, jump, or swim**.

Head Lice (Pediculosis)

- **Risk Factors:** The main risk factors for infestation with head lice (pediculosis) include

1. Being of primary school age or
2. Having a young child in the family.

- However, Having unwashed hair or long hair is not a risk factor.
- **Health Impact:** Head lice infestation rarely causes **physical problems**, and head lice are **not known to be vectors for infectious diseases**.
- The adult **lice lives for approximately one month**, during which the female **lays several eggs** at the base of the hair shaft each night.

Patient Assessment with Head Lice

- The presence of live lice is **diagnostic**.
- Treatment should be **reserved** for infected individuals.
- Many parents worry that their children may catch lice and request prophylactic treatment from the pharmacist. However, **insecticides should never be used prophylactically**, as this may accelerate **resistance**.
- A lice repellent is now available.

Patient Assessment with Head Lice

- **Preferred Areas for Lice:** The hair at the **nape of the neck** and **behind the ears** should be thoroughly checked, as these spots are preferred by lice due to their warmth and relative shelter.
- The presence of **nits is not necessarily evidence of current infection**, which is a common misconception. Nits must be accompanied by live lice to confirm an active infestation.
- Nits are not removed by insecticides because they are firmly glued to the hair. Therefore, the presence of nits does not indicate treatment failure.
- A fine-toothed comb can be used to remove nits after treatment.

Patient Assessment with Head Lice

- **Presence of Itching**
- Contrary to popular belief, **itching is not experienced by everyone** with head lice.
- The absence of itching does not mean that an infection is not present.
- Itching is an **allergic response to the saliva of the lice**, which is injected into the scalp during feeding.
- Sensitization does not occur immediately and may take weeks to develop, as thousands of bites from the lice are typically required.
- In the case of **re-infection**, **itching may begin more quickly**.

Management of Head Lice

- **Preventative Measures**

1. Avoid direct contact with infected individuals.
2. Do not share personal articles such as combs, brushes, hats, and towels.
3. Use hot water to wash hairbrushes and combs of the infected person for at least 10 minutes.
4. Use hot water to wash clothes, bedding, and towels of the infected person.

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

Management of Head Lice

- **Treatment Options**

A. Insecticides: Examples include **permethrin**, **lindane** (gamma benzene hexachloride), and **malathion**.

B. Physical Insecticides: **Dimeticone** and **isopropyl myristate**.

C. Wet-Combing: This method can also be effective.

- Recent trials report cure rates of approximately:
- 70-80% for insecticides
- 70% for dimeticone
- 50-60% for wet-combing
- **Note:** Itching can persist after the infestation has been cleared. For itching, a **sedating antihistamine** may be recommended.

Management of Head Lice: General Recommendations

1. **Treatment of Family Members**
   It is generally recommended to treat all family members at the same time to prevent reinfection. Alternatively, you can treat only those with confirmed infections and regularly check the hair of other family members; however, this approach requires a high level of motivation.
2. **Second Application**
   Some eggs may survive after the first application. Therefore, a second application is now recommended 7 days later to kill any lice that emerge from the eggs. The incubation period for head lice is 7-10 days.
3. **Parental Reassurance**
   Parents may feel embarrassed that their child has head lice, but pharmacists should reassure them that **this is not a sign of poor hygiene**. Head lice are not solely associated with dirty hair.
4. **School Attendance**
   Children **should not** be kept off school due to head lice.

Management of Head Lice: Treatment Options

- **Alcoholic and Aqueous Lotions**
- If available, aqueous lotion is preferred for small children and asthmatics.
- Alcoholic lotions can cause certain issues:
  - **A. Stinging:** Alcohol can cause stinging when applied to broken skin (e.g., eczema).
  - **B. Lung Irritation:** The evaporation of alcohol may irritate the lungs and can precipitate an asthmatic.
  - The most effective method of application is to sequentially part sections of the hair, applying a few drops of the treatment and 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**, though those with very thick or long hair may need more.

Management of Head Lice: Treatment Options

- **Wet-Combing Method**
- Wet combing, also known as **bug busting**, can break the life cycle of head lice by physically removing **lice and nymphs**. The effectiveness of this method depends on repeated use (every 4 days) over a period of 2 weeks.
- The procedure are ?.

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 check 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**.

Management of Head Lice: Treatment Options

- **Age Considerations**
- All products, **except** **isopropyl myristate**, can be used on **children older than 6 months**.
- **Pregnant** **Women**
  Pregnant women with head lice should be advised to use **dimeticone** or to use the **wet-combing method**.
- 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 .

Management of Head Lice: Treatment Options

Drug	Method of Use
Permethrin 1% cream rinse	Apply in sufficient quantities to cover or saturate washed hair and scalp. Leave on for 10 minutes before rinsing; comb hair with a lice comb after rinsing.
Malathion (0.5% liquid)	Rub preparation into dry hair and scalp, allow to dry naturally, and remove by washing after 12 hours (or leave overnight).
Isopropyl myristate lotion and spray (*only for adults and children over age 2*)	Apply to dry hair, ensuring even distribution. Rinse after 10 minutes.
Lindane (gamma benzene hexachloride) 1% shampoo	Rub into the affected area, leave for 4 minutes, then wash.
Dimeticone 4% lotion & spray	Apply to dry hair, spreading evenly from root to tip. Spray from about 10 cm away, ensuring even distribution. Leave on for at least 8 hours (preferably overnight) before washing out with shampoo.