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NURSING

Solved Question Papers for BSc Nursing

2025–2021

Semester IV

As Per Revised INC Syllabus

I Clement

JAYPEE

Contents

SECTION I: Pharmacology, Pathology and Genetics

Pharmacology, Pathology and Genetics: 2025 1
Pharmacology, Pathology and Genetics: 2024 18
Pharmacology, Pathology and Genetics: 2023 34
Pharmacology, Pathology and Genetics: 2022 46
Pharmacology, Pathology and Genetics: 2021 68

SECTION II: Adult Health Nursing-II

Adult Health Nursing-II: 2025 89
Adult Health Nursing-II: 2024 108
Adult Health Nursing-II: 2023 126
Adult Health Nursing-II: 2022 139
Adult Health Nursing-II: 2021 162

ADULT HEALTH NURSING-II

2024

LONG ESSAYS

1. Define cataract, explain pathophysiology, clinical manifestations and diagnostic measures of cataract and write peri-operative nursing care of a patient with cataract.
2. Define benign prostate hypertrophy, list the clinical features and surgical management for BPH, write the postoperative nursing management with three nursing diagnosis.
3. Define nephrotic syndrome, list the causes for nephrotic syndrome, explain the dietary management and write the nursing process for nephrotic syndrome.

SHORT ESSAYS

4. Nursing management of critically ill patients.
5. Explain the clinical manifestation of HIV and AIDS.
6. Write and two occupational health disorders.
7. Care of patient on ventilator.
8. Glaucoma.
9. Concept and theories of aging.
10. Principles of critical care nursing.

SHORT ANSWERS

11. Types of immunity.
12. Prostatectomy.
13. Bell's palsy.
14. Cholelithiasis.
15. Ménière's disease.
16. Define burns.

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LONG ESSAYS

1. Define cataract, explain pathophysiology, clinical manifestations and diagnostic measures of cataract and write peri-operative nursing care of a patient with cataract.

A A cataract is a clouding of the lens of the eye, which is typically clear **(Fig. 1)**. For people who have cataracts, seeing through cloudy lenses is like looking through a frosty or fogged-up window. Clouded vision caused by cataracts can make it more difficult to read, drive a car at night or see the expression on a friend's face.

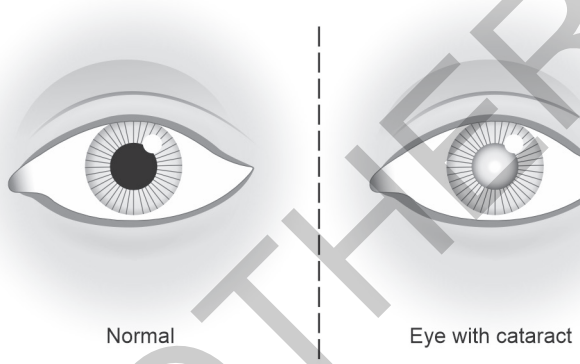

Fig. 1: Normal eye and eye with cataract.

Classification

The three most common types of senile cataracts are defined by their location in the lens.

1. **Nuclear cataract:** A nuclear cataract is caused by central opacity in the lens and has a substantial genetic component.
2. **Cortical cataract:** A cortical cataract involves the anterior, posterior, or equatorial cortex of the lens.
3. **Posterior subcapsular cataracts:** Posterior subcapsular cataracts occur in front of the posterior capsule.

Pathophysiology

The lens is a transparent structure made up of fibers (modified epithelial cells) enclosed in a membranous structure called the lens capsule. Lens matter consists of two main parts:

1. Cortex (superficial part)—containing younger fibers
2. Nucleus (deeper part)—containing older fibers

Many degenerative processes denature and coagulate lens proteins present in lens fibers by different mechanisms, which result in loss of transparency and, ultimately, cataract formation. The various mechanisms involved are as follows:

1. Disturbances occurring at any level of lens growth (Congenital cataract).
2. Fibrous metaplasia of lens epithelium (Subcapsular cataract).
3. Cortical hydration between lens fibers (Cortical cataract).
4. Deposition of certain pigments, i.e., urochrome (Nuclear cataract).

All these processes ultimately lead to an opaque lens behind the pupil, making it extremely difficult for the patient to carry on with routine activities.

Clinical Manifestations

Symptoms may be a bit different for each person **(Fig. 2)**. They may include:

1. Cloudy or blurry vision
2. Lights causing a glare or a halo
3. Poor night vision
4. Double vision
5. Colors seeming faded
6. Increased near-sightedness, and the need to change eye-glass prescriptions.

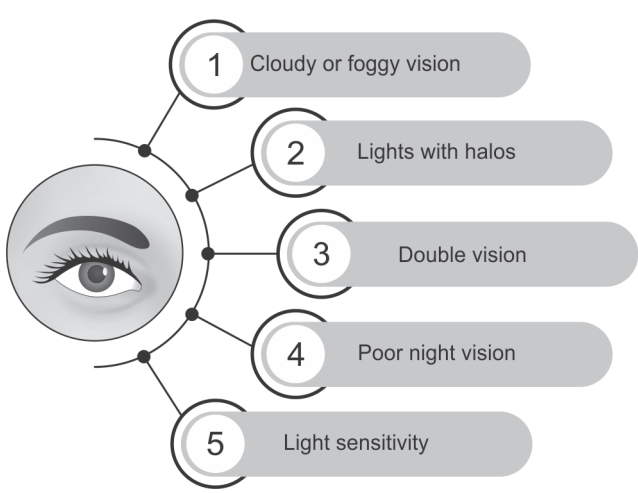

Fig. 2: Symptoms of cataract.

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Pharmacologic Therapy

Medications administered pre and postoperatively are:

- **Dilating drops:** Dilating drops are administered every 10 minutes for four doses at least 1 hour before surgery.
- **Antibiotic drugs:** Antibiotic drugs may be administered prophylactically to prevent postoperative infection and inflammation.
- **Intravenous sedation:** Sedation may be used to minimize anxiety and discomfort before surgery.

Surgical Management

- **Lens replacement:** There are three lens replacement options:
  - **Phacoemulsification:** A portion of the anterior capsule is removed, allowing extraction of the lens nucleus and cortex while the posterior capsule and zonular support are left intact.
  - **Aphakic glasses:** In aphakic glasses, objects are magnified by 25%, making them appear closer than they actually are.
  - **Contact lenses:** Contact lenses provide patients with almost normal vision, but because contact lenses need to be removed occasionally, the patient also needs a pair pf aphakic glasses.
- **IOL implants:** The most common IOL is the single focus lens or monofocal IOL that cannot alter the visual shape; multifocal IOLs reduce the need for eyeglasses; accommodative IOLS mimic the accommodative response of the youthful, phakic eye.
- **Extracapsular cataract extraction (ECCE):** ECCE removes the anterior lens and cortex, leaving the posterior capsule intact.
- **Intracapsular cataract extraction:** This procedure removes the entire lens within the intact capsule.

Peri-operative Nursing Care of a Patient with Cataract

Preoperative

- Preoperative antibiotic drops for 24 hours.
- Bath for patients/Head wash/Face wash.
- Special note of eyebrow/medial canthus area/nasal area.
- Eye to be washed with BSS and Betadine 5%.
- Sharps—Keratomes/blades/needle not to be reused unless sterilization procedure undertaken.
- Intraocular instruments and cannulas are not reused if possible unless properly sterilized disposables wherever possible.
- All doctors and staff (medical and paramedical) should receive formal training in biomedical waste management.
- OT to be washed/scrubbed before use and surfaces carbolized.
- A drop of Betadine before starting the surgery.

Premedication	*Medications*	*Rationale*
Anxiolytics	Diazepam (Valium)	Reduces anxiety and promotes a state of relaxation and calmness before surgery
Sedatives/hypnotics	Midazolam (Versed)	Induces relaxation, alleviates preoperative stress, and creates a more comfortable environment for the client
Anticholinergics	Atropine	Reduces nasal and oral secretions, maintaining a clear airway during surgery
Anticholinergics	Glycopyrrolate	Prevents laryngospasm by blocking the effects of the parasympathetic nervous system, ensuring a patent airway
Vagal blockers	Atropine	Decrease vagal-induced bradycardia, which can cause a slowing of the heart rate due to stimulation of the vagus nerve
Antiemetics	Ondansetron	Prevents postoperative nausea and vomiting
Induction agents	Propofol	Decreases the amount of anesthetic required for the induction and maintenance of anesthesia, ensuring more stable anesthesia and outcomes
Antibiotics	Cefazolin (Ancef)	Prevents surgical site infections by administering prophylactic antibiotics approximately 60 minutes before the incision is made

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Postcataract Surgery Care

Majority of the people resume their day-to-day activities after 24 hours of the surgery:

- Avoid doing any strenuous activities for the first few days' postsurgery.
- Do not do any rigorous exercise and/or heavy lifting.
- Avoid driving until your eye doctor examines and say it is safe to resume driving.
- Follow your ophthalmologist's orders related to administration of any antibiotic or anti-inflammatory eye drops or medications.
- Try to stay away from dirt and dusty areas.
- Avoid rubbing of your eye.
- Use your protective eye shield, glasses or sunglasses outdoors.
- Do not go for a swim or hot tubs for a couple of weeks after the surgery.
- Do not use eye make-up.
- Remember to visit your doctor as per schedule on Day 1, Week 1 and Week 3.

2. Define benign prostate hypertrophy, list the clinical features and surgical management for BPH, write the postoperative nursing management with three nursing diagnosis.

A Benign prostatic hyperplasia (BPH) is a condition that occurs when the prostate gland enlarges, potentially slowing or blocking the urine stream **(Fig. 3)**. Other names for benign prostatic hyperplasia include benign prostatic hypertrophy, an enlarged prostate, and BPH. BPH occurs only in men; approximately 8 percent of men aged 31 to 40 have BPH. In men over age 80, more than 80 percent have BPH.

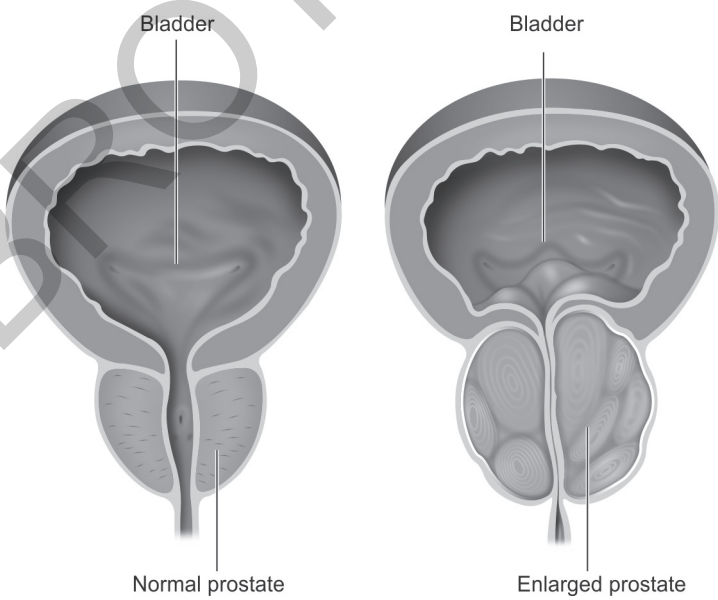

Fig. 3: Normal and enlarged prostate.

Pathophysiology

The pathophysiology of BPH is as follows:

- **Resistance:** BPH is a result of complex interactions involving resistance in the prostatic urethra to mechanical and spastic effects.
- **Obstruction:** The hypertrophied lobes of the prostate may obstruct the bladder neck or urethra, causing incomplete emptying of the bladder and urinary retention.
- **Dilation:** Gradual dilation of the ureters and kidneys can occur.

Clinical Manifestations

BPH may or may not lead to lower urinary tract symptoms; if symptoms occur, they may range from mild to severe.

- **Urinary frequency:** Frequent trips to the bathroom to urinate may be an early sign of a developing BPH.
- **Urinary urgency:** This is the sudden and immediate urge to urinate.
- **Nocturia:** Urinating frequently at night is called nocturia.
- **Weak urinary stream:** Decreased and intermittent force of stream is a sign of BPH.
- **Dribbling urine:** Urine dribbles out after urination.
- **Straining:** There is presence of abdominal straining upon urination.

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Surgical Management

Other treatment options include minimally invasive procedures and resection of the prostate gland.

1. **Transurethral microwave heat treatment:** This therapy involves the application of heat to prostatic tissue.
2. **Transurethral needle ablation (TUNA):** TUNA uses low-level radio frequencies delivered by thin needles placed in the prostate gland to produce localized heat that destroys prostate tissue while sparing other tissues.
3. **Transurethral resection of the prostate (TURP):** TURP involves the surgical removal of the inner portion of the prostate through an endoscope inserted through the urethra.
4. **Open prostatectomy:** Open prostatectomy involves the surgical removal of the inner portion of the prostate via a suprapubic, retropubic, or perineal approach for large prostate glands.

Write the Postoperative Nursing Management with three Nursing Diagnosis

Postoperative nursing diagnoses: Having completed the postoperative nursing assessment, you're likely to come across some of the following diagnoses:

- Ineffective respirations
- Acute pain
- Uncontrolled nausea and vomiting
- Nutrition and fluid deficiency
- Constipation
- Impaired urinary system
- Unregulated body temperature
- Impaired skin integrity
- Risk of injury
- Activity intolerance
- Knowledge deficiency
- Anxiety

Postoperative nursing goals: The main focus of postoperative nursing is to improve all physiological aspects of the patient, regain independence and provide them with the necessary knowledge to continue their rehabilitation once discharged.

Acute Pain Relief and Pain Management

Acute pain in patients with benign prostatic hyperplasia (BPH) can be caused by a variety of factors, including mucosal irritation from the catheterization procedure used to relieve urinary obstruction, bladder distention due to incomplete emptying of the bladder, renal colic from the presence of kidney stones, urinary tract infections, and radiation therapy used to treat the condition. These factors can all contribute to pain and discomfort in the pelvic region.

1. **Assess pain, noting location, intensity (scale of 0–10), and duration:** Provides information to aid in determining the choice or effectiveness of interventions.
2. **Tape the drainage tube to the thigh and the catheter to the abdomen (if traction is not required):** Prevents pull on the bladder and erosion of the penile-scrotal junction.
3. **Recommend bedrest as indicated:** Bedrest may be needed initially during the acute retention phase; however, early ambulation can help restore normal voiding patterns and relieve colicky pain.
4. **Provide comfort measures such as back rub, helping the patient assume a position of comfort. Suggest the use of relaxation and deep-breathing exercises and diversional activities:** Promotes relaxation, refocuses attention, and may enhance coping abilities.
5. **Encourage the use of sitz baths, and warm soaks to perineum:** Promotes muscle relaxation.
6. **Insert a catheter and attach it to straight drainage as indicated:** Draining the bladder reduces bladder tension and irritability.
7. **Instruct in prostatic massage:** Aids in the evacuation of ducts of the gland to relieve congestion and inflammation. Contraindicated if infection is present.
8. **Administer pain medications as indicated.**

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Reducing Anxiety and Providing Emotional Support

Patients with benign prostatic hyperplasia (BPH) may experience fear and anxiety related to the surgical procedure used to treat the condition, which can be a major intervention involving general aesthesia and potential complications.

1. **Always remain with the patient. Establish a trusting relationship with the patient and SO:** Demonstrates concern and willingness to help. Encourages discussion of sensitive subjects.
2. **Provide information about specific procedures and tests and what to expect afterward (catheter, bloody urine, bladder irritation). Be aware of how much information the patient wants:** Helps patients understand the purpose of what is being done, and reduces concerns associated with the unknown, including fear of cancer. However, an overload of information is not helpful and may increase anxiety.
3. **Maintain a matter-of-fact attitude in doing procedures and dealing with patients. Protect patient privacy:** Communicates acceptance and eases the patient's embarrassment.
4. **Encourage the patient and SO to verbalize concerns and feelings:** Defines the problem, providing an opportunity to answer questions, clarify misconceptions, and problem-solve solutions.
5. **Reinforce previous information the patient has been given:** Allows the patient to deal with reality and strengthens trust in caregivers and the information presented.

Promoting Optimal Fluid Balance

Patients with benign prostatic hyperplasia (BPH) are at risk for deficient volume due to several factors, including postobstructive diuresis, which is an increase in urine output that can occur following the relief of urinary obstruction:

- **Monitor output carefully. Note outputs of 100–200 mL per hour:** Rapid and sustained diuresis could cause a patient's total fluid volume to become depleted and limit sodium reabsorption in renal tubules.
- **Monitor BP and pulse. Evaluate capillary refill and oral mucous membranes:** Enables early detection of and intervention for systemic hypovolemia.
- **Monitor electrolyte levels, especially sodium:** As fluid is pulled from extracellular spaces, sodium may follow the shift, causing hyponatremia.
- **Encourage increased oral intake based on individual needs:** The patient may have restricted oral intake in an attempt to control urinary symptoms, reducing homeostatic reserves and increasing the risk of dehydration and hypovolemia.
- **Promote bedrest with the head elevated:** Decreases cardiac workload, facilitating circulatory homeostasis.
- **Administer IV fluids (hypertonic saline) as needed:** Replaces fluid and sodium losses to prevent or correct hypovolemia following outpatient procedures.

3. Define nephrotic syndrome, list the causes for nephrotic syndrome, explain the dietary management and write the nursing process for nephrotic syndrome.

A Nephrotic syndrome is a group of symptoms characterized by a combination of clinical features, including increased protein excretion in the urine (proteinuria), low levels of albumin in the blood (hypoalbuminemia), high levels of cholesterol and triglycerides, and edema (swelling) in various parts of the body **(Fig. 4)**. It is not a specific disease but rather a set of symptoms that can arise from different underlying kidney conditions, such as minimal change disease, focal segmental glomerulosclerosis, and membranous nephropathy, among others.

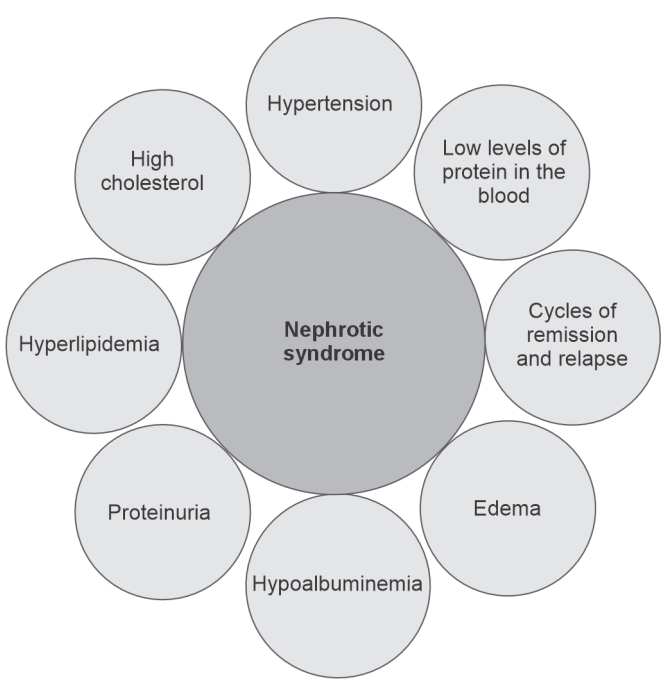

Fig. 4: Nephrotic syndrome.

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Causes

There are two causes of nephrotic syndrome: Primary and secondary.

1. **Primary:** Common primary causes of nephrotic syndrome include kidney diseases such as minimal-change nephropathy, membranous nephropathy, and focal glomerulosclerosis.
2. **Secondary:** Secondary causes include systemic diseases such as diabetes mellitus, lupus erythematosus, and amyloidosis.

Clinical Manifestations

The first sign of nephrotic syndrome in children is usually swelling of the face; this is followed by swelling of the entire body.

- **Edema:** Edema is the salient feature of nephrotic syndrome and initially develops around the eyes and legs; with time, the edema becomes generalized and may be associated with an increase in weight, the development of ascites, or pleural effusions.
- **Malnutrition:** Malnutrition may become severe; however, the generalized edema masks the loss of body tissue, causing the child to present a chubby appearance and to double his or her weight.
- **Irritability and loss of appetite:** Anorexia, irritability, and loss of appetite develop.
- **Immunosuppression:** These children are generally susceptible to infection, and repeated acute respiratory conditions are the usual pattern.
- **Proteinuria:** Albumin leaks out due to structural damage, leading to proteinuria.
- **Respiratory tract infection:** A history of a respiratory tract infection immediately preceding the onset of nephrotic syndrome is frequent.
- **Allergy:** Approximately 30% of children with nephrotic syndrome have a history of allergy.

Dietary Strategies to Manage Nephrotic Syndrome

Maintaining a healthy diet can be a challenge, but it can also be a crucial step in managing nephrotic syndrome symptoms and improving overall health. To make dietary changes more feasible, here are some useful tips to keep in mind.

- Take note of the protein intake. For nephrotic syndrome, the recommended protein is as per the age and body weight and current condition on the disease.
- Limit sodium intake as per the prescription of your healthcare team.
- Check food labels for sodium content before purchasing food items and avoid processed foods.
- Avoid using seasonings with "salt" in the name and substitute with herbs and spices instead.
- Prepare meals at home to control sodium intake.
- Choose healthy oils like olive oil, oils rich in PUFA when cooking.
- Remove salt from the dinner table to avoid overconsumption.
- Opt for fresh vegetables. and avoid salted and canned vegetables.

Nursing Problem Priorities

The following are the nursing priorities for patients with nephrotic syndrome:

- Management of edema and fluid balance
- Monitoring and maintenance of nutritional status
- Prevention and management of infection
- Administration and monitoring of prescribed medications
- Assessment and management of complications (e.g., thrombosis, hyperlipidemia)
- Regular monitoring of renal function and laboratory values
- Promotion of patient and family education and understanding of the condition.

Nursing Assessment

Assess for the following subjective and objective data:

- Edema in the face, hands, feet, or legs
- Proteinuria (excess protein in the urine) results in a frothy or foamy urine

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- Hypoalbuminemia
- Hyperlipidemia
- Weight gain due to fluid retention
- Fatigue and generalized weakness
- Loss of appetite
- Increased susceptibility to infections
- Abdominal pain or discomfort
- Blood clot formation (thrombosis) in severe cases
- Assess for factors related to the cause of nephrotic syndrome:
  - Decreased kidney function
  - Fluid accumulation
  - Inability to ingest and digest foods and absorb nutrients
  - Inadequate secondary defenses

Nursing Diagnoses

Based on the assessment data, the major nursing diagnoses are:

- Excess fluid volume related to fluid accumulation in tissues and third spaces.
- Risk for imbalanced nutrition: Less than body requirements related to anorexia.
- Risk for impaired skin integrity related to edema.
- Fatigue related to edema and disease process.
- Risk for infection related to immunosuppression.
- Deficient knowledge of the caregiver related to disease process, treatment, and home care.
- Compromised family coping related to care of a child with chronic illness.

Nursing Goals

Goals and expected outcomes may include:

- The child's edema will be decreased.
- The child will achieve an ideal body weight without excess fluids.
- The client will consume a nutritionally balanced diet.
- The child will alternate activities with rest periods.
- The parents will verbalize understanding of the cause and treatment for illness.
- The child's temperature will remain <99° F.
- The child's breath sounds will be clear bilaterally.
- The child's urine will be clear without a foul odor.

Nursing Interventions

Nursing interventions for a child with nephrotic syndrome are:

- **Monitoring fluid intake and output:** Accurately monitor and document intake and output; weigh the child at the same time every day, on the same scale in the same clothing; measure the child's abdomen daily at the level of the umbilicus.
- **Improving nutritional intake:** Offer a visually appealing and nutritious diet; consult the child and the family to learn which foods are appealing to the child; serving six small meals my help increase the child's total intake better.
- **Promoting skin integrity:** Inspect all skin surfaces regularly for breakdown; turn and position the child every 2 hours; protect skin surfaces from pressure by means of pillows and padding; protect overlapping skin surfaces from rubbing by careful placement of cotton gauze; bathe the child regularly; a sheer dusting of cornstarch may be soothing to the skin.
- **Promoting energy conservation:** Bed rest is common during the edema stage of the condition; balance the activity with rest periods and encourage the child to rest when fatigued; plan quiet, age-appropriate activities that interest the child.
- **Preventing infection:** Protect the child from anyone with an infection: staff, family, visitors, and other children; handwashing and strict medical asepsis are essential; and observe for any early signs of infection.

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SHORT ESSAYS

4. Nursing management of critically ill patients.

A Providing nursing care for the critically ill patient can be a challenging endeavor **(Fig. 5)**. Each case the technician encounters is different and has its own nuances. To provide high quality care, the veterinary technician is challenged to draw from their knowledge and experiences, remain flexible and be creative.



Fig. 5: Nursing management of critically ill patient.

- **Monitoring ins and out:** The nursing goal of monitoring "ins and outs" is to ensure maintenance of fluid balance and nutritional intake. "Ins and outs" provide valuable information about fluid balance and nutritional intake. The patient's entire intake and output is monitored and documented. "Ins and outs" are monitored at regular intervals throughout the day. Intake includes all fluids (water, IV fluids including blood products, and liquid diets).
- **Nutritional support:** The nursing goal is to ensure that the patient is meeting its energy requirements. There are serious negative consequences of acute malnutrition including: decreased immune response, loss of function of tissues and organs and delayed wound healing.
- **Patient comfort needs:** The nursing goal for meeting the patient's comfort needs depends on what comfort need the technician is addressing. Comfort needs include keeping the patient clean and dry, seeing to the patient's mental well-being, assessing the patient for pain
- **Nosocomial infections:** Nosocomial infections are hospital-acquired infections: the patient did not enter the hospital with the infection.
  - Diligent hand washing before and after handling patients and IV lines.
  - Swabbing injection ports with alcohol before administering IV medication.
  - Use of disposable thermometer sheaths.
  - Disinfection of patient care equipment, i.e., clipper blades, ECG leads and clips, endotracheal tubes and breathing circuits.
  - Disinfection of environmental surfaces.
  - Aseptic technique in catheter placement (IV, Urinary, and Chest)
  - Treat patients with nosocomial infection last when doing treatment rounds.
- **Bandage/incision or wound care:** Bandages are placed to protect lacerations and surgical incisions and provide minimal support. They should remain dry and clean. The veterinary technician should look for signs that an appendage bandage is too tight or is irritating to the patient.
- **Recumbent patient care:** Patients suffering neurological, orthopedic, or traumatic problems can be recumbent for prolonged periods of time. Care of the recumbent patient can be very challenging.
- **Catheters:** The veterinary technician is charged with the care of a variety of types of catheters. In general, the nursing goals for catheters include minimizing the risk of infection, insuring functionality, and prevention of complications, which are specific to the type of catheter in use.

5. Explain the clinical manifestation of HIV and AIDS.

A HIV stands for human immunodeficiency virus. HIV infects and destroys cells of your immune system, making it hard to fight off other diseases. When HIV has severely weakened your immune system, it can lead to acquired immunodeficiency syndrome (AIDS).

Symptoms of HIV

There are several symptoms of HIV. Not everyone will have the same symptoms. It depends on the person and what stage of the disease they are in. Below are the three stages of HIV and some of the symptoms people may experience.

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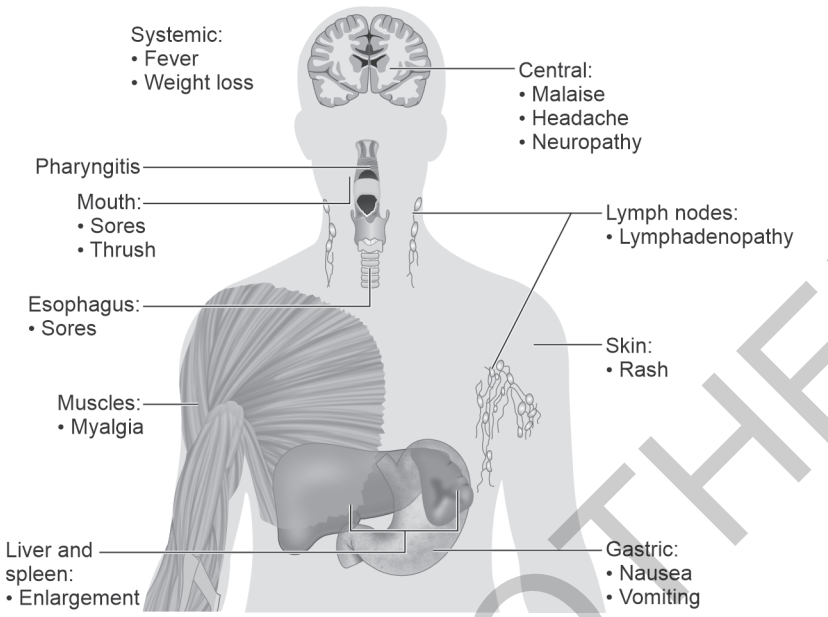

Fig. 6: Main symptoms of acute HIV infection.

- **Stage 1: Acute HIV infection:** Within 2 to 4 weeks after infection with HIV, about two-thirds of people will have a flu-like illness. This is the body's natural response to HIV infection **(Fig. 6)**.
  - Flu-like symptoms can include:
    - Fever
    - Chills
    - Rash
    - Night sweats
    - Muscle aches
    - Sore throat
    - Fatigue
    - Swollen lymph nodes
    - Mouth ulcers

  These symptoms can last anywhere from a few days to several weeks. But some people do not have any symptoms at all during this early stage of HIV.
- **Stage 2: Clinical latency**
  1. In this stage, the virus still multiplies, but at very low levels. People in this stage may not feel sick or have any symptoms. This stage is also called chronic HIV infection.
  2. Without HIV treatment, people can stay in this stage for 10 or 15 years, but some move through this stage faster.
  3. If you take HIV medicine exactly as prescribed and get and keep an undetectable viral load, you can live and long and healthy life and will not transmit HIV to your HIV-negative partners through sex.
- **Stage 3: AIDS:** Symptoms of AIDS can include:
  - Rapid weight loss.
  - Recurring fever or profuse night sweats.
  - Extreme and unexplained tiredness.
  - Prolonged swelling of the lymph glands in the armpits, groin, or neck.
  - Diarrhea that lasts for more than a week.
  - Sores of the mouth, anus, or genitals.

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- Pneumonia.
- Red, brown, pink, or purplish blotches on or under the skin or inside the mouth, nose, or eyelids.
- Memory loss, depression, and other neurologic disorders.

6. Write and two occupational health disorders.

A An 'occupational disease' is any disease caused primarily by exposure at work to a physical, organizational, chemical or biological risk factor or to a combination of these factors **(Fig. 7)**. Occupational diseases are mostly those listed in national legislation as resulting from exposure to risk factors at work.

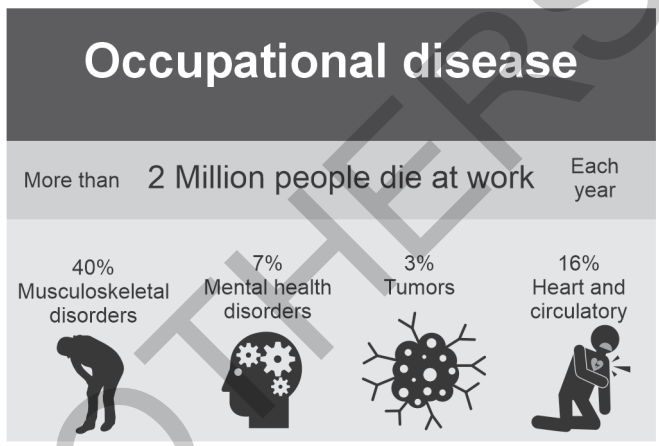

Fig. 7: Occupational disease.

Respiratory Diseases

- Respiratory illness is one of, if not the most common, type of occupational disease.
- Workers in industries such as mining, construction, and manufacturing are at a higher risk of developing respiratory diseases because of their exposure to harmful substances like asbestos, silica, and coal dust.
- These substances can damage the lungs and lead to chronic conditions like asbestosis, silicosis, and chronic obstructive pulmonary disease.
- These chronic conditions can cause difficulty breathing, coughing, chest pain, and fatigue.

Skin Diseases

- Workers in industries such as healthcare, cleaning, and construction are at a higher risk of developing skin diseases because of their exposure to harmful chemicals, irritants, and allergens.
- This regular exposure can cause contact dermatitis, occupational acne, and skin cancer.
- Contact dermatitis is a skin rash caused by exposure to irritants or allergens, while occupational acne is a skin condition caused by exposure to oils, greases, and other chemicals.
- Sunlight, chemicals, and radiation exposure can cause skin cancer. All these diseases can cause skin damage and internal damage.

Chemical Poisoning

- Occupational chemical poisoning is a serious health concern for many workers, including agricultural workers, ranchers, healthcare professionals, lab workers, factory workers, and construction workers.
- Because these laborers work with harmful chemicals like lead, mercury, asbestos, benzene, and pesticides, they often suffer from numerous health problems.
- Chemical-caused diseases include heart disease, diabetes, multiple sclerosis, fertility and pregnancy abnormalities, thyroid disease, and chronic fatigue, to name just a few.

7. Care of patient on ventilator.

A Mechanical ventilation is utilized in intensive care and long-term care settings to assist patients who require additional respiratory support **(Fig. 8)**. This handy reference guide provides critical patient care essentials, tips for trouble-shooting ventilator alarms, and potential complications.

- **Maintain a patent airway:** Per policy, note endotracheal (ET) tube position (centimeters) and confirm that it is secure. If the patient has a tracheostomy, check that the ties or Velcro straps are secure, and that the stoma appears healthy.
- Assess oxygen saturation, bilateral breath sounds for adequate air movement, and respiratory rate per policy.
- Check vital signs per policy, particularly blood pressure after a ventilator setting is changed. Mechanical ventilation increases intrathoracic pressure, which could affect blood pressure and cardiac output.

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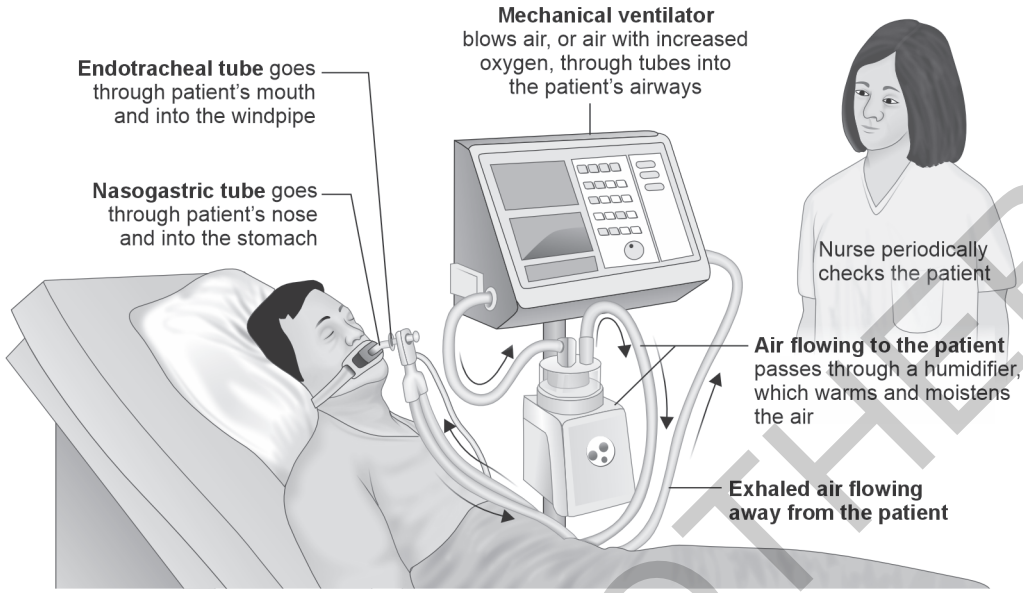

Fig. 8: Patient on ventilator.

- Assess patient's pain, anxiety and sedation needs and medicate as ordered.
- **Complete bedside check:** Ensure suction equipment, bag-valve mask and artificial airway are functional and present at bedside. Verify ventilator settings with the prescribed orders.
- Suction patient only as needed, per facility policy; hyperoxygenate the patient before and after suctioning and do not instill normal saline in the ET or tracheostomy tube; explain procedure to patient; suction for the shortest time possible and use the lowest pressure required to remove secretions. Monitor for upper airway trauma as evidenced by new blood in secretions.
- Monitor pulse oximetry and arterial blood gas (ABG) after adjustments are made to ventilator settings and during weaning to ensure adequate oxygenation and acid-base balance.
- To minimize the risk for ventilator-associated pneumonia (VAP), implement best practices such as strict handwashing; aseptic technique with suctioning; elevating head of bed 30–45 degrees (unless contraindicated); providing sedation vacations and assessing patient's readiness to extubate; providing peptic ulcer disease prophylaxis; providing deep vein thrombosis prophylaxis; and performing oral care with chlorhexidine, per your facility policy.
- For awake patients, provide writing tools or a communication board to facilitate communication. Ask yes or no questions so that the patient can respond by nodding their head.
- The use of an evidence-based bundled approach to managing pain and agitation, and promoting early mobility has been shown to decrease ventilator days and the incidence of delirium.

Essential Care Principles of Ventilation

Caring for a patient receiving ventilatory support may involve:

- Communicating effectively with the patient and other members of the care team
- Checking the ventilator settings and identifying any changes in the patient's condition
- Responding appropriately to ventilator alarms and determining what they mean
- Checking the bag valve
- Conducting appropriate emergency equipment and regular equipment checks
- Suctioning the patient
- Checking the position of the endotracheal tube (in intubated patients)
- Assessing the patient for pain or anxiety and providing appropriate sedation
- Ensuring the patient is hemodynamically stable

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- Ensuring there is a backup plan in the event of ventilator failure.
- Airway management.
  Maintaining all necessary documentation
  Providing education to the patient's family and allowing them to passively contribute to care (e.g., holding the patient's hand, speaking to the patient).

8. Glaucoma.

Glaucoma is a group of eye disorders that lead to progressive damage to the optic nerve. It is characterized by loss of nerve tissue that results in vision loss **(Fig. 9)**. People with glaucoma can lose nerve tissue, resulting in vision loss.

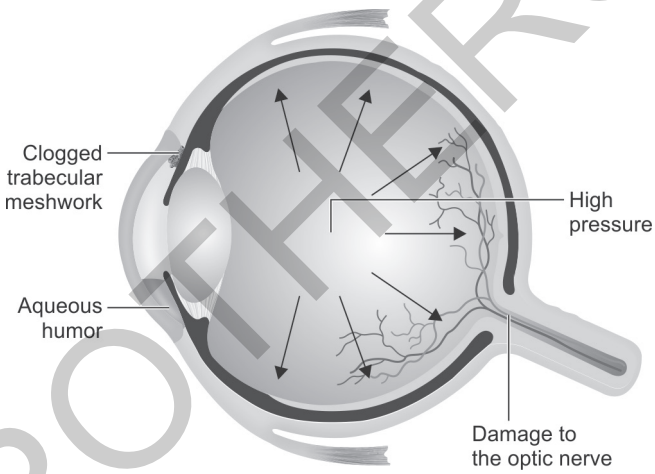

Fig. 9: Glaucoma.

Definition

It is a condition marked by high intraocular pressure (IOP) that damages the optic nerve.

Types

There are several types of glaucoma, including:

1. Open-angle glaucoma
2. Closed-angle glaucoma
3. Low-tension glaucoma
4. Pigmentary glaucoma

Medical Management

Objective of treatment is to prevent optic nerve damage by lowering the IOP to a level consistent with retaining vision. Treatment is almost always lifelong. Treatment also focuses on achieving the greatest benefit at the least risk, cost and inconvenience to the patient.

Pharmacologic therapy is the initial and principal treatment for glaucoma. Acute angle-closure glaucoma is treated with medication (including miotics) to reduce IOP before laser or incisional iridectomy. Commonly used agents include:

- Beta-adrenergic blockers/antagonists are the most widely used hypotensive agents. They are effective in many types of glaucoma.
- Cholinergic agents (topical) are miotics (cause papillary constriction) and are used in short-term management of glaucoma with papillary block.
- Alpha-2-adrenergic agonists (topical) reduce IOP by increasing aqueous humor outflow.
- Carbonic anhydrase inhibitors (systemic) and prostaglandins lower IOP by reducing aqueous humor formation.
- Osmotic diuretics reduce IOP by increasing the osmolality of the plasma to draw water from the eye into the vascular circulation.

Surgical Management

- Ophthalmic laser surgery is indicated as the primary treatment for glaucoma or is required when medication therapy is poorly tolerated or ineffective in lowering IOP.
- Conventional surgery procedures are performed when laser techniques are unsuccessful or when patient is not a good candidate for laser surgery (e.g., Patient cannot sit still or follow instructions).
- **Filtering procedures:** An opening or a fistula in the trabecular meshwork (trabeculectomy) is made to allow drainage implant or shunt surgery may be performed.

Nursing Diagnosis

- Anxiety related to possible vision loss.
- Disturbed sensory perception related to visual impairment.

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- Ineffective health maintenance related to knowledge deficit
- Risk for injury related to impaired vision
- Self-care deficit related to impaired vision

Nursing Management

- Provide information regarding management of glaucoma.
- Discuss preoperative and postoperative teaching for immediate surgical opening of the eye chamber.
- Prepare to administer carbonic anhydrase inhibitors IV or IM, to restrict production of aqueous humor.
- Prepare to administer osmotic agents.
- Discuss and prepare the client for surgical or laser peripheral iridectomy after the acute episode is relieved.
- Provide information about laser trabeculoplasty, if medication therapy proves ineffective.
- Teach the client about specific safety precautions.
- Instruct the client to avoid mydriatics such as atropine, which may precipitate acute glaucoma in a client with closed-angle glaucoma.
- Instruct the client to carry prescribed medications at all times.
- Instruct the client to carry a medical identification card or wear a bracelet stating his type of glaucoma and need for medication.
- Instruct the client to take extra precautions at night (e.g., use of handrails, provide extra lighting to compensate for impaired pupil dilation from miotic use).

9. Concept and theories of aging.

Ⓐ Ageing is a ubiquitous, intrinsic and ongoing process. Theories of ageing have been debated since the time of the ancient Greeks, and researchers now feel that no one theory exists that explains all aspects of ageing. Ageing may be seen as a sequence of events that occur from conception to death.

Categories of Aging Theories

Categories of aging theories all seek to explain and explore the many dimensions of ageing **(Fig. 10)**.

- **Biologic:** Interested with answering fundamental questions with respect to the physiologic processes that occur in all living organisms over time.
- **Sociologic:** Looking at the roles and relationships within which individuals engage in later life.
- **Psychologic:** Controlled by biology and sociology; address how a person responds to the engagements of their age.
- **Moral/spiritual:** Study how individuals seek to validate his or her existence.

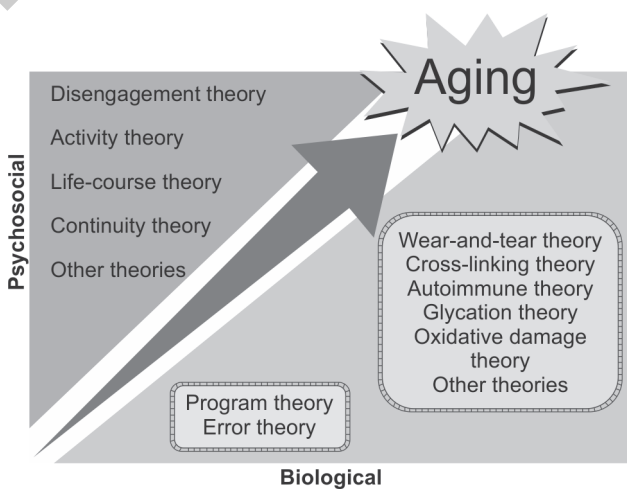

Fig. 10: Aging theories.

The Programmed Theory

- Aging by pogram, where biological clocks act through hormones to control the pace of aging.
- Gene theory, which considers aging to be the result of a sequential switching on and off of certain genes, with senescence being defined as the time when age-associated deficits are manifested.
- Autoimmune theory, which states that the immune system is programmed to decline over time, leading to an increased vulnerability to infectious disease and thus aging and death.

The damage or error theory:

- Wear-and-tear theory, where vital parts in our cells and tissues wear out resulting in aging.
- Rate of living theory, that supports the theory that the greater an organism's rate of oxygen basal, metabolism, the shorter its life span.

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- Cross-linkage theory, according to which an accumulation of cross-linked proteins damages cells and tissues, slowing down bodily processes and thus result in aging.
- Free radicals' theory, which proposes that superoxide and other free radicals cause damage to the macromolecular components of the cell, giving rise to accumulated damage causing cells, and eventually organs, to stop functioning.

10. Principles of critical care nursing.

A **Principles of critical care nursing are (Fig. 11):**

- **Efficiency:** Being efficient can help you provide effective critical care, which may reduce the length of a patient's hospitalization and the cost of treatment for the hospital and patient.
- **Appropriate medical intervention:** CCNs ensure that the care and medical interventions they provide apply to patients' needs. This includes administering systematic medication and maintaining the required life support systems.
- **Professionalism:** In nursing, professionalism refers to providing high-quality care while upholding accountability, respect and integrity. This also includes demonstrating professional behavior, communicating clearly and maintaining a positive environment.
- **Safety and nonmaleficence:** In this field, it is necessary to adhere to the protocols and standards of critical care that experts in the medical field set. This principle emphasizes the importance of increased safety standards in the physical care environment to reduce risks for patients and healthcare providers.

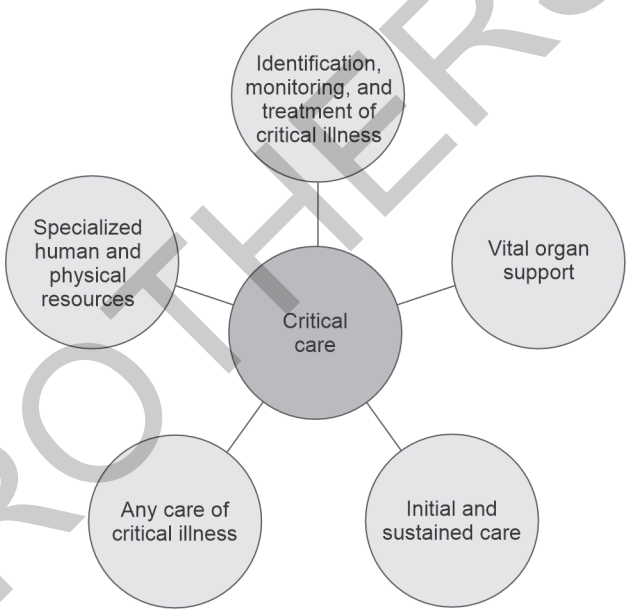

Fig. 11: Critical care nursing.

- **Respect and care:** Showing care is about listening to patients' concerns with sensitivity and respecting their opinions. Critical care nursing aims to promote quality of life rather than just survival.
- **Fair allocation:** This principal advocate treating everyone fairly when providing medical attention. As a CCN, you are responsible for treating all patients with respect regardless of age, ethnicity, race, religious beliefs, sexual orientation or economic status.

SHORT ANSWERS

11. Types of immunity.

A Types of immunity includes **(Fig. 12)**:

- **Innate immunity** is the body's first line of defense and is present from birth. It includes physical barriers such as the skin and mucous membranes, as well as specialized cells such as macrophages, natural killer cells, or neutrophils, which act rapidly to eliminate invading pathogens.
- **Adaptive immunity** develops throughout life and is highly specific for particular pathogens. It is subdivided into two main categories:
  - **Humoral immunity:** Involves the production of antibodies by B cells (B lymphocytes) that circulate in the blood and body fluids and are essential for neutralizing pathogens and toxins.
  - **Cell-mediated immunity:** Involves the action of T cells (T lymphocytes) that detect and destroy cells infected by intracellular pathogens, such as viruses and some bacteria.

  Two types of immunity exist—active and passive:
  - Active immunity occurs when our own immune system is responsible for protecting us from pathogen.
  - **Passive immunity**, on the other hand, is obtained by transferring preformed antibodies, usually from an external source, such as the mother through breast milk or through monoclonal antibody treatments.

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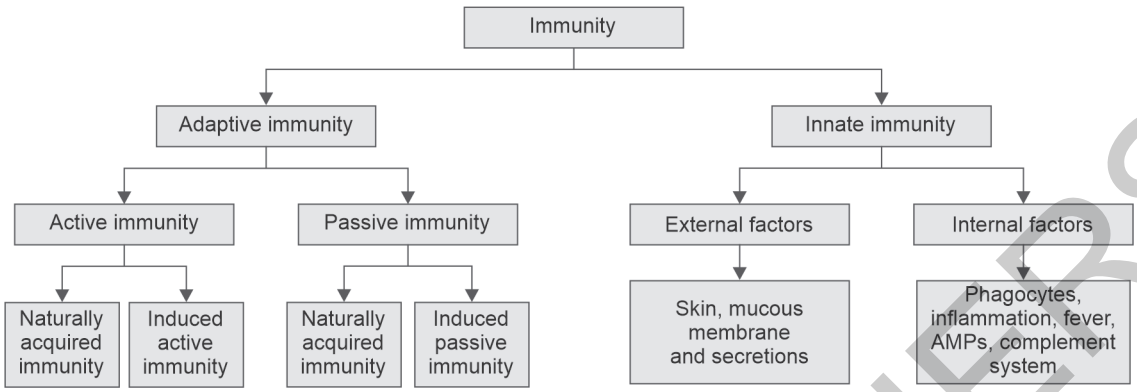

Fig. 12: Types of immunity.

12. Prostatectomy.

A prostatectomy is a surgical procedure for the partial or complete removal of the prostate. It may be performed to treat prostate cancer or benign prostatic hyperplasia. A common surgical approach to prostatectomy includes making a surgical incision and removing the prostate gland.

13. Bell's palsy.

- Bell's palsy is a condition that causes sudden weakness in the muscles on one side of the face **(Fig. 13)**.
- Inflammation and compression of the seventh cranial nerve is the main cause of Bell's palsy.

14. Cholelithiasis.

Gallstones are solid deposits of digestive fluid in the gallbladder, a small organ that sits just below the liver **(Fig. 14)**. There are different types of gallstones:

1. Pigment gallstones are the most common type of gallstone in children. They form when bile contains too much bilirubin, a byproduct of the body's natural breakdown of red blood cells.

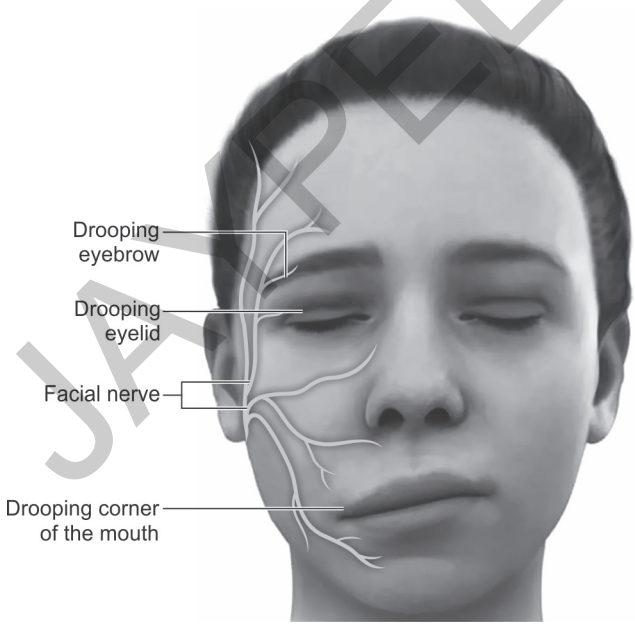

Fig. 13: Bell's palsy.

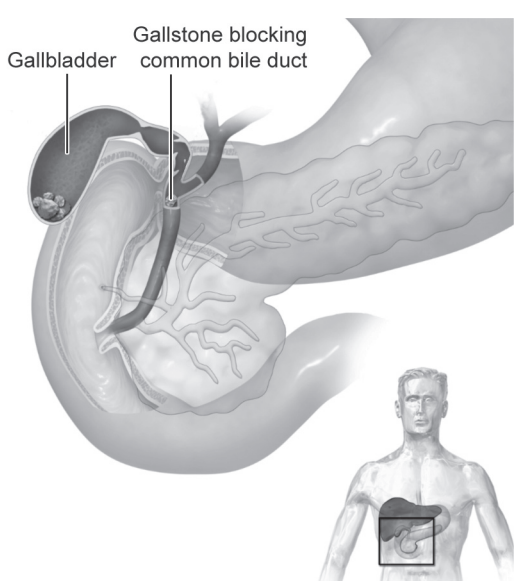

Fig. 14: Gallstones.

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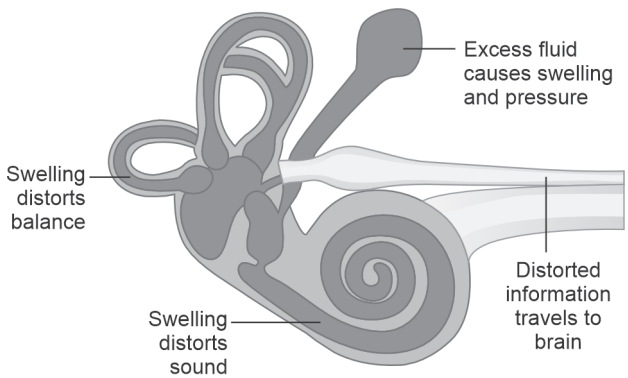

Fig. 15: Ménière's disease.

2. Cholesterol gallstones are the most common form of gallston-e in adults. They form when bile mixes with cholesterol and hardens.

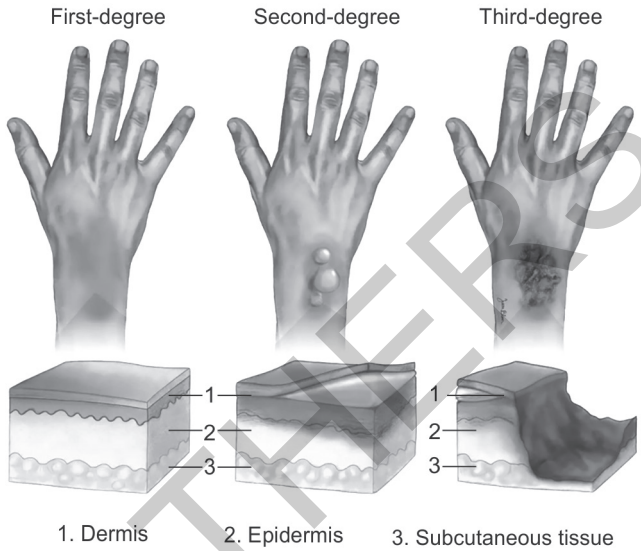

Fig. 16: Degrees of burn.

15. Ménière's disease.

A Ménière's disease is an inner ear problem that can cause dizzy spells, also called vertigo, and hearing loss. Most of the time, Ménière's disease affects only one ear.

Ménière disease is a disorder caused by fluid buildup in the chambers in the inner ear **(Fig. 15)**. It may be caused by several things, including allergies, abnormal immune system response, head injury, migraine headaches, or a viral infection.

16. Define burns.

A A burn is an injury to the skin or other organic tissue primarily caused by heat or due to radiation, radioactivity, electricity, friction or contact with chemicals. Thermal (heat) burns occur when some or all the cells in the skin or other tissues are destroyed by hot liquids (scalds).

Burns are classified by degree depending on how deeply and severely they penetrate the skin's surface: first, second, third, or fourth. There are three levels of burns **(Fig. 16)**:

1. First-degree burns affect only the outer layer of the skin. They cause pain, redness, and swelling.
2. Second-degree burns affect both the outer and underlying layer of skin. They cause pain, redness, swelling, and blistering.
3. Third-degree burns affect the deep layers of skin.

MULTIPLE CHOICE QUESTIONS

1. The Snellen chart is used to:
a. Measures intraocular pressure
b. Measure eye pain
c. Measure visual acuity
d. Assess the degree of color blindness

2. Mydriatics cause:
a. Dilation of the pupil
b. Construction of the pupil
c. Watering of the eye
d. Anesthesia

3. The retina is:
a. Located above the eye
b. Only present in cataracts
c. Located front of the eye
d. Layer located at the back of the eye

4. Mastoidectomy is used to:
a. Correct balance
b. Removal of disease mastoid air cells
c. Removable of the incus
d. Prevention of infection

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5. Blepharitis refers to:
a. Inflammation of conjunctiva
b. Inflammation of the eyelids
c. Inflammation of the retina
d. Pain in the eye

6. Phacoemulsification is:
a. A complication of cataract surgery
b. The most common cause of cataract
c. The most common type of cataract surgery
d. An infection

7. The common type of renal stones:
a. Calcium oxalate
b. Cystine
c. Mixed
d. Struvite

8. The important complication of peritoneal dialysis is:
a. DVT
b. Diarrhea
c. Peritonitis
d. Hypertension

9. Minimum and maximum score of Glasgow coma scale are:
a. 8–9
b. 3–15
c. 8–12
d. 12–13

10. What does AIDS stand for:
a. Acquired immune deficiency system
b. Acquired immune deficiency syndrome
c. After immunity deficiency system
d. Altered immune deficiency syndrome

11. Dysphasia is the impairment of:
a. Gait
b. Swallowing
c. Movement
d. Speech

12. Chemical burns are caused by:
a. Acids
b. Solids
c. Heat
d. Electrical

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ANSWERS

1. c	**2. a**	**3. d**	**4. b**
5. b	**6. c**	**7. a**	**8. c**
9. b	**10. b**	**11. d**	**12. a**

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