

ATI pediatrics proctored exam

Chapter 1: Family centered nursing care

1. Parenting styles

-Dictatorial or authoritarian:

-Parents try to control the child's behaviors and attitudes through unquestioned rules and expectations

-Ex: The child is never allowed to watch television on school nights

-Permissive:

-Parents exert little or no control over the child's behaviors, and consult the child when making decisions

-Ex: The child assists with deciding whether he will watch television

-Democratic or authoritative:

-Parents direct the child's behavior by setting rules and explaining the reason for each rule setting

-Ex: The child can watch television for 1 hr on school nights after completing all of his homework and chores

-Parents negatively reinforce deviations from the rules

-Ex: The privilege is taken away but later reinstated based on new guidelines

Chapter 2: Physical assessment findings

1. Vital signs

-Usually vital signs are all high except for BP

-Temperature:

-3 – 6 months	99.5
-1 year	99.9
-3 years	99.0
-5 years	98.6
-7 years	98.2
-9 – 11 years	98.1
-13 years	97.9

-Pulse:

-Newborn	80 – 180/min
-1 weeks – 3 months	80 – 220/min
-3 months – 2 years	70 – 150/min
-2 – 10 years	60 – 110/min
-10 years and older	50 – 90/min

-Respirations:

-Newborn – 1 year	30 – 35/min
-1 – 2 years	25 – 30/min
-2 – 6 years	21 – 25/min
-6 – 12 years	19 – 21/min
-12 years and older	16 – 19/min

-Blood pressure:

-Low as a baby but increases the older they get

-Infants:

-Systolic: 65-78

-Diastolic: 41-52

2. Head

-Fontanelles should be flat

-Posterior fontanel:

-Closes by 6-8 weeks

-Anterior fontanel:

-Closes by 12-18 months

3. Teeth

-Infants should have 6-8 teeth by 1 year old

-Children and adolescents should have teeth that are white and smooth, and begin replacing the 20 deciduous teeth with 32 permanent teeth

4. Infant Reflexes

Stepping	Birth to 4 weeks
Palmar Grasp	Birth to 3 months
Tonic Neck Reflex (Fencer Position)	Birth to 3 – 4 months
Sucking and Rooting Reflex	Birth to 4 months
Moro Reflex (Fall backward)	Birth to 4 months
Startle Reflex (Loud Noise)	Birth to 4 months
Plantar Reflex	Birth to 8 months
Babinski Reflex	Birth to 1 year

Chapter 3: Health promotion of infants (2 days to 1 year)

1. Physical Development

-Weight:

-Doubled by 5 months

-Tripled by 12 months

-Quartered by 30 months

-Height:

-2.5 cm (1 in) per month for the first 6 months

-Length:

-Increases by 50% by 12 months

-Dentition:

-First teeth erupt between 6-10 months

2. Motor skill development

- 1 Month

- Head lag

- Strong grasp reflex

- 2 Months

- Lifts head when prone

- Holds hand in open position | Grasp reflex fades
- 3 Months
 - Raises head and shoulders when prone | Slight head lag
 - No grasp reflex | Keeps hands loosely open
- 4 Months
 - Rolls from back to side
 - Grasp objects with both hands
- 5 Months
 - Rolls from front to back
 - Palmar grasp dominantly
- 6 Months
 - Rolls from back to front
 - Holds bottle
- 7 Months
 - Bears full weight on feet | Sits, leaning forward on both hands
 - Moves objects from hand to hand
- 8 Months
 - Sits unsupported
 - Pincer grasp
- 9 Months
 - Pulls to a standing position | Creeps on hands and knees instead of crawling
 - Crude pincer grasp | Dominant hand is evident
- 10 Months
 - Prone to sitting position
 - Grasps rattle by its handle
- 11 Months
 - Walks while holding onto something | Walks with one hand held
 - Places objects into a container | Neat pincer grasp
- 12 Months
 - Stands without support briefly | Sits from standing position without assistance
 - Tries to build a two-block tower w/o success | Can turn pages in a book

3. Cognitive development

-Piaget: sensorimotor (birth to 24 months)

-Object Permanence: objects still exists when it is out of view

-Occurs at 9-10 months

4. Language development

-3-5 words by the age of 1 year

5. Psychosocial development

-Erikson: Trust vs. Mistrust:

- Learn delayed gratification

-Trust is developed by meeting comfort, feeding, simulation, and caring needs

-Mistrust develops if needs are inadequately or inconsistently met or if needs are continuously met before being vocalized by the infant

6. Social development

- Separation Anxiety:** protest when separated from parents
 - Begins around 4-8 months
- Stranger Fear:** ability to discriminate between familiar and unfamiliar people
 - Begins 6-8 months

7. Age appropriate activities

- Rattles
- Playing pat-a cake
- Brightly colored toys
- Playing with blocks

8. Nutrition

- Breastfeeding provides a complete diet for infants during the first 6 months
- Solids are introduced around 4-6 months
 - Iron-fortified cereal is the first to be introduced
 - New foods should be introduced one at a time, over a 5-7 day period to observe for allergy reactions
- Juice and water usually not needed for 1st year
- Appropriate finger foods:
 - Ripe bananas
 - Toast strips
 - Graham crackers
 - Cheese cubes
 - Noodles
 - Firmly cooked vegetables
 - Raw pieces of fruit (except grapes)

9. Injury prevention

- Avoid small objects (grapes, coins, and candy)
- Handles of pots and pans should be kept turned to the back of the stove
- Sunscreen should be used when infants are exposed to the sun
- Infants and toddlers remain in a rear-facing car seat until age 2
- Crib slats should be no farther apart than 6 months
- Pillows should be kept out of the crib
- Infants should be placed on their backs for sleep

Chapter 4: Health Promotion of Toddlers (1 to 3 years)

1. Physical development

- Weight:**
 - 30 months: 4 times the birth weight
- Height:**
 - Toddlers grow 7.5 cm (3 in) per year
- Head circumference and chest circumference:**
 - Usually equal by 1 to 2 years of age

2. Cognitive development

- Piaget:** sensorimotor stage transitions to preoperational stage 19 – 24 months
- Object Permanence:** fully developed

3. Language development

- 1 year: using one-word sentences
- 2 years: 300 words, multiword sentences by combining 2-3 words

4. Psychosocial Development

-Autonomy vs. Shame and Doubt

- Independence is paramount for toddlers who are attempting to do everything for themselves
- Use negativism or negative responses to express their independence
- Ritualism, or maintaining routines and reliability, provides a sense of comfort for toddlers as they begin to explore the environment beyond those most familiar to them

5. Age appropriate activities

-**Parallel play:** Toddlers observe other children and then might engage in activities nearby

-Appropriate activities:

- Playing with blocks
- Push-pull toys
- Large-piece puzzles
- Thick crayons

-Toilet training can begin when toddlers have the sensation of needing to urinate or defecate

6. Motor skill development

- **15 Months**
 - Walks without help | Creeps up stairs
 - Uses a cup well | Builds 2 tower blocks
- **18 Months**
 - Runs clumsily | Throws overhand | Jumps in place w/ both feet | Pulls/Pushes toys
 - Manages a spoon w/o rotation | Turns pages 2-3 pages /time | Builds 3-4 blocks | Uses crayon to scribble spontaneously | Feeds self
- **24 Months (2 years)**
 - Walks backwards | Walks up/down stairs w/ 2 feet on each step
 - Builds 6-7 blocks | Turns pages 1 @ a time
- **30 Months (2.5 years)**
 - Balances on 1 leg | Jumps across floor / off chair w/ both feet | Walks tiptoe
 - Draws circles | has good hand-finger coordination

7. Nutrition

-Whole milk at 1 year old

-Can start drinking low-fat milk after 2 years of age

-Juice consumption should be limited to 4-6 oz. per day

-Foods that are potential choking hazards:

- Nuts
- Grapes
- Hot dogs
- Peanut butter

- Raw carrots
- Tough meats
- Popcorn

Chapter 5: Health Promotion of Preschoolers (3-6 years)

1. Physical development

-Weight:

- Gain 2-3 kg (4.5-6.5 lb) per year

-Height:

- Should grow 6.9-9 cm per year

2. Fine and gross motor skills

- **3 Years**

- Toe and heel walks
- **Tricycle**
- Jumps off bottom step
- Stands on one foot for a few seconds

- **4 Years**

- Hops on one foot | Skips
- Throws ball overhead
- Catches ball reliably

- **5 Years**

- Jumps rope
- Walks backward
- Throws and catches a ball

3. Cognitive development

-Piaget: preoperational stage

- Moves from totally egocentric thoughts to social awareness and the ability to consider the viewpoint of others

-Magical thinking:

- Thoughts are all-powerful and can cause events to occur

-Animism:

- Ascribing life-like qualities to inanimate objects

4. Psychosocial development

-Erikson: Initiative vs. guilt:

- Preschoolers become energetic learners, despite not having all of the physical abilities necessary to be successful at everything
- Guilt can occur when preschoolers believe they have misbehaved or when they are unable to accomplish a task

-During stress, insecurity, or illness, preschoolers can regress to previous immature behaviors or develop habits (nose picking, bed-wetting, thumb sucking)

5. Age appropriate activities

-Preschooler's transition to associative play

-Play is not highly organized, but cooperation does exist between children

-Appropriate activities:

- Playing ball
- Putting puzzles together
- Riding tricycles
- Playing pretend dress up activities
- Role-playing

6. Sleep and rest

- On average, preschoolers need about 12 hours of sleep
- Keep a consistent bedtime routine
- Avoid allowing preschoolers to sleep with their parents

Chapter 6: Health promotion of School-Age children (6-12 years)

1. Physical development

-Weight:

- Gain 2-3 kg (4.4-6.6 lb.) per year

-Height:

- Grows 5 cm (2 in.) per year

2. Cognitive development

-Piaget: Concrete operations

- Able to see the perspective of others

3. Psychosocial development

-Erikson: Industry vs. Inferiority

- A sense of industry is achieved through the development of skills and knowledge that allows the child to provide meaningful contributions to society

- A sense of accomplishment is gained through the ability to cooperate and compete with others

- Peer groups play an important part in social development

4. Age appropriate activities

- Competitive and cooperative play is predominant

- Play simple board and number games

- Play hopscotch

- Jump rope

- Ride bicycles

- Join organized sports (for skill building)

5. Sleep and rest

- Need 9 hrs of sleep at age 11

6. Dental health

- The first permanent teeth erupt around 6 years of age

Chapter 7: Health promotion of Adolescents (12 to 20 years)

1. Physical development

- Girls stop growing at about 2-2.5 years after the onset of menarche

-In girls, sexual maturation occurs in the following order:

- Breast development

- Pubic hair growth
- Axillary hair growth
- Menstruation

-In boys, sexual maturation occurs in the following order:

- Testicular enlargement
- Pubic hair growth
- Penile enlargement
- Growth of axillary hair
- Facial hair growth
- Vocal changes

2. Cognitive development

-Piaget: Formal operations

-Increasingly capable of using formal logic to make decisions

3. Psychosocial development

-Erikson: Identity vs. role confusion

- Adolescents develop a sense of personal identity and to come to view themselves as unique individuals

4. Age-appropriate activities

- Nonviolent videogames
- Nonviolent music
- Sports
- Caring for a pet
- Reading

Chapter 8: Safe Medication Administration

1. Oral

- This route of medication administration is preferred for children
- Avoid mixing medication with formula or putting it in a bottle of formula because the infant might not take the entire feeding, and the medication can alter the taste of the formula
- Use the smallest measuring liquid medication for doses of liquid medication
- Avoid measuring liquid medication in a tsp. or tbsp.
- Administer the medication in the side of the mouth in small amounts
- Stroke the infant under the chin to promote swallowing while holding the cheeks together

2. Otic

- Children younger than years:
 - Pull the pinna downward and straight back
- Children older than 3 years:
 - Pull the pinna upward and back

3. Intramuscular

- Use a 22-25 gauge, 1/2-1 inch needle
- Vastus lateralis is the recommended site in infants and small children
- Other sites:
 - Ventrogluteal and deltoid

4. Intravenous

- Avoid terminology such as “bee sting” or “stick”
- Apply EMLA to the site for 60 minutes prior to attempt (helps numb)
- Keep equipment out of site until procedure begins
- Perform procedure in a treatment room (don’t do it in their room)
- Allow parents to stay if they prefer
- Swaddle infants
- Offer nutritive sucking to infants before, during, and after the procedure

Chapter 9: Pain management

1. Atraumatic measures

- Use play therapy to explain procedures, allowing the child to perform the procedure on a doll or toy

2. Pharmacological measures

- Give medications routinely, vs. PRN, to manage pain that is expected to last for an extended period of time

3. Pain assessment tool

- Flacc: 2 months- 7 years
- Faces: 3 years and older
- Oucher: 3-13 years
- Numeric scale: 5 years and older

Chapter 10: Hospitalization, illness, and play

1. Infant

- Experiences stranger anxiety between 6-18 months
- Displays physical behaviors as expressions of discomfort due to inability to verbalize

2. Toddler

- Limited ability to describe illness
- Limited ability to follow directions
- Experiences separation anxiety
- Can exhibit an intense reaction to any type of procedure
- Behavior can regress

3. Preschooler

- Fears related to magical thinking
- Can experience separation anxiety
- Might believe illness and hospitalization are a punishment
- Explain procedures using simple, clear language
 - Avoid medical jargon

- Give choices when possible, such as, “Do you want your medicine in a cup or spoon?”

4. School-age child

- Ability to describe pain
- Increasing ability to understand cause and effect

- Provide factual information
- Encourage contact with peer group

5. Adolescent

- Perceptions of illness severity are based on the degree of body images
- Develops body image disturbance
- Experiences feelings of isolation from peers
- Provide factual information
- Encourage contact with peer group

Chapter 11: Death and Dying

1. Grief and mourning

-Anticipatory grief:

- When death is expected or a possible outcome

-Complicated grief:

- Extends for more than 1 year following the loss

2. Current stages of development

-Infants/toddlers (birth-3 years):

- Have little to no concept of death

- Mirror parental emotions

- Can regress to an earlier stage of behavior

-Preschool (3-6):

- Magical thinking allows for the belief that thoughts can cause an event such as death resulting in feeling guilt and shame

- Interpret separation from parents as punishment for bad behavior

- View dying as temporary

-School-age (6-12):

- Begin to have adult concept of death

- Fear often displayed through uncooperative behavior

-Adolescent (12-20):

- Can have adult-like concept of death

- Can have difficulty accepting death

- Rely more on peers than the influence of parents

- Can become increasingly stressed by changes in physical appearance

3. Physical manifestations of death

- Sensation of heat when the body feels cool
- Decreased sensation and movement in lower extremities
- Swallowing difficulties
- Bradycardia/hypotension
- Cheyne-strokes respirations

4. After death

- Allow family to stay with the body as long as they desire
- Allow family to rock the infant/toddler
- Remove tubes and equipment
- Offer to allow family to assist with preparation of the body

Chapter 12: Acute Neurological disorders

1. Meningitis

-Viral (aseptic) Meningitis: supportive care for recovery

-Bacterial (septic) Meningitis: contagious infection

-Hib and PCV vaccines decrease the incidence

-Newborns:

- Poor Muscle Tone
- Weak Cry
- Poor Suck | Refuses Feedings
- Vomiting/Diarrhea
- Bulging Fontanel (late sign)

-3 Months – 2 Years:

- Seizures with a High-Pitched Cry
- Bulging Fontanel
- Poor Feedings | Vomiting
- Possible nuchal rigidity
- Brudzinski's sign and Kernig's sign not reliable for diagnosis

-2 Years – Adolescence:

- Seizures (often initial sign)
- Nuchal rigidity
- Fever/chills
- Headache/vomiting
- Irritability/restlessness that can progress to drowsiness/stupor
- Petechiae or purpuric type rash (with meningococcal infection)
- + **Brudzinski Sign:** flexion of extremities with deliberate flexion of the neck
- + **Kernig's Sign:** resistance to extension of the leg from a flexed position

-Laboratory Tests

-Blood Cultures | CBC | CSF Analysis

-**Viral CSF**

- Clear Color | Slightly Elevated WBC & Protein | Normal Glucose | - Gram

-**Bacterial CSF**

- Cloudy Color | Elevated WBC | Elevated Protein | Decreased Glucose | +Gram

-Diagnostic Procedures

-**Lumbar Puncture** (Definitive Diagnostic Test)

- Empty Bladder
- EMLA Cream 45min – 1-hour prior
- Side-lying Position, Head Flexed, Knees Drawn up to Chest
- Remain in Flat Position to prevent Leakage and Spinal HA

-Nursing care:

-Droplet precautions

-Maintain NPO status if the client has decreased LOC

-Decrease environmental stimuli

-**Medications:**

-IV antibiotics for bacterial infections

-**Complications:**

-ICP:

Newborns and Infants

-Bulging or Tense Fontanelles

-Increased Head Circumference

-High-Pitched Cry | Irritability

-Distended Scalp Veins

-Bradycardia | Respiratory Changes

Children

-Headache

-N/V

-Diplopia

-Seizures

-Bradycardia | Respiratory Changes

2. Reye Syndrome

-Affects the liver (liver dysfunction) and brain (cerebral edema)

-Follows a viral illness (Influenza | Gastroenteritis | Varicella)

-Giving Aspirin for treating fevers

-**Laboratory tests:**

-Elevated liver enzymes (ALT and AST)

-Elevated serum ammonia

-**Diagnostic procedures:**

-Liver biopsy/CSF analysis

Chapter 13: Seizures

1. Risk factors

-Febrile Episode

-Cerebral Edema

-Intracranial Infection / Hemorrhage

-Brain Tumors / Cyst

-Toxins or Drugs

-Lead Poisoning

-Hypoglycemia

-Electrolyte imbalances

2. Generalized seizures

-Tonic-clonic seizures: -Also known as Grand mal

Tonic Phase (10-30 seconds)

-Loss of Consciousness | Loss of Swallowing Reflex | Apnea leading to Cyanosis

-Tonic Contraction of entire body: arms and legs flexed, head and neck extended

Clonic Phase (30-50 seconds)

- Violent jerking movements of the body

- Postictal State (30 minutes)**

- Remains semiconscious but arouses with difficulty and confused

- No recollection of the seizure

- Absence seizure: petit mal or lapses**

- Onset between ages 5 – 8 years and ceases by the teenage years**

- Loss of Consciousness lasting 5 – 10 seconds

- Minimal or no change in behavior

- Resembles daydreaming or Inattentiveness

- Can drop items being held, but the child seldom falls

- Lip Smacking | Twitching of Eyelids or Face | Slight Hand Movements

- Myoclonic seizure:**

- Brief contraction of muscle or groups of muscle

- No postictal state

- Atonic or akinetic seizure:**

- Muscle tone is lost for a few seconds

3. Diagnostic procedures

- EEG:**

- Abstain from caffeine for several hours prior to the procedure

- Wash hair (no oils or sprays) before and after the procedure to remove electrode gel

4. Nursing care

- Initiate Seizure Precautions:**

- Pad side rails of Bed | Crib | Wheelchair

- Keep bed free of objects that could cause Injury

- Have Suction and Oxygen Equipment available

- During a Seizure:**

- Protect from Injury (move furniture away, hold head in lap)

- Maintain a position to provide a patent airway

- Suction Oral Secretions

- Side-lying Position (decreases risk of aspiration)

- Loosen restrictive clothing

- Do NOT restrain the child

- Do NOT put anything in the child's mouth

- Do NOT open the jaw or insert an airway during seizure

- This can damage teeth, lips, or tongue

- Remain with the child

- Note onset, time, and characteristics of seizure

- Allow seizure to end spontaneously

- Post-Seizure:**

- Side-lying position to prevent aspiration and facilitate drainage of secretions

- Check for breathing, V/S and position of head

- NPO until swallowing reflex has returned

5. Medications

- Antiepileptic Drugs (AEDs):**

-Diazepam (Valium) | Phenytoin | Carbamazepine | Valporic Acid |

6. Therapeutic procedures

-Focal Resection: of an area of the brain to remove epileptogenic zone

-Corpus Calostomy: separation of two hemispheres in the brain

-Vagal Nerve Stimulator

7. Complications

-Status Epilepticus:

-Prolonged Seizure Activity that Lasts >30 minutes or Continuous seizure activity in which the client does not enter a Postictal Phase

-Maintain Airway, Administer oxygen, IV access

Chapter 14: Head injury

1. Physical assessment findings

-Minor injury:

-Vomiting

-Pallor

-Irritability

-Lethargy/drowsiness

-Severe injury: Increased ICP

-Infants:

-Bulging fontanel

-Irritability (usually 1st sign)

-High-pitched cry

-Poor feeding

-Children:

-Nausea/headache

-Forceful vomiting

-Blurred vision

-Seizures

-Late signs:

-Alterations in pupillary response

-Posturing (flexion and extension)

-Decreased motor response

-Decreased response to painful stimuli

-Cheyne-stokes respirations

-Seizures

-Flexion: severe dysfunction of the cerebral cortex

-Extension: Severe dysfunction at the level of the midbrain

2. Nursing care

-Ensure the spine is stabilized until a spinal cord injury is ruled out

-Implement actions to decrease ICP:

-Keep the head midline with the bed elevated 30 degrees, which will also promote venous draining

-Avoid extreme flexion, extension, or rotation of the head and maintain in midline neutral position

- Keep the client's body in alignment, avoiding hip flexion/extension
- Minimize oral suctioning
- Nasal suctioning is contraindicated
- Instruct the client to avoid coughing and blowing the nose
- Insert and maintain indwelling catheter
- Administer stool softeners to avoid straining

3. Medications

- Mannitol:
 - Osmotic diuretic used to treat cerebral edema

- Antiepileptic:

- Used to prevent or treat seizures

- Corticosteroid: dexamethasone

- To help decrease edema

4. Therapeutic procedures

- Craniotomy: to help relieve pressure

5. Complications

- Epidural hematoma:

- Bleeding between the dura and the skull

- Subdural hemorrhage:

- Bleeding between the dura and the arachnoid membrane

- Brain herniation:

- Downward shift of brain tissue

Chapter 15: Cognitive and sensory impairments

1. Visual impairments

- Myopia: Nearsightedness

- Sees close objects clearly, but not objects in the distance

- Hyperopia: Farsightedness

- Sees distant objects clearly, but not objects that are close

- Strabismus:

- Esotropia: inward deviation of the eye

- Exotropia: outward deviation of the eye

- Occlusion therapy:

- Patch stronger eye to make weaker eye stronger

2. Visual screening

- Snellen letter, tumbling E, or picture chart

- Place the client 10 feet from the chart with heels on the 10-foot mark

Chapter 16: Oxygen and Inhalation therapy

1. Metered-dose Inhaler

- Shake the inhaler 5-6 times

- Attach the spacer

- Helps facilitate proper inhalation

- Take a deep breath and then exhale

- Tilt the head back slightly, and press the inhaler
- While pressing the inhaler, begin a slow, deep breath that lasts for 3-5 seconds
- Hold the breath for 5-10 seconds

2. Dry powder inhaler

- DO NOT shake

3. Chest physiotherapy

- Is a set of techniques that includes manual or mechanical percussion, vibration, cough, forceful expiration (or huffing), and breathing exercises
- Helps loosen respiratory secretions
- Schedule treatments before meals or at least 1 hr after meals and at bedtime
- Administer bronchodilator medication or nebulizer treatment prior

4. Hypoxemia

-Early signs:

- Tachypnea
- Tachycardia
- Restlessness
- Use of accessory muscles
- Nasal flaring

5. Oxygen toxicity

- Can result from high concentrations of oxygen, long duration of oxygen therapy, and the child's degree of lung disease
- Hypoventilation and increased PaCO₂ levels allow for rapid progression into unconscious state

Chapter 17: Acute and infectious respiratory illnesses

1. Tonsillitis

-Physical assessment findings:

- Report of sore throat with difficulty swallowing
- Mouth odor/mouth breathing
- Fever
- Tonsil inflammation with redness and edema

-Laboratory tests:

-Throat culture:

- For GABHS

-Medications:

-Antipyretics/analgesics: acetaminophen

-Antibiotics: for Tx of GABHS

-Tonsillectomy: for recurring tonsillitis

- Side-lying position after then elevate HOB when child is awake

-Assess for evidence of bleeding:

- Frequent swallowing/clearing the throat

- Avoid red-colored liquids, citrus juice, and milk-based foods

- Discourage coughing, throat clearing, and nose blowing in order to protect the surgical site

- Avoid straws: can damage surgical site

- Alert parents that there can be clots or blood-tinged mucus in vomitus
- Limit activity to decrease the potential for bleeding
- Fully recovery usually occurs in 14 days

2. Croup syndromes

-Bacterial epiglottitis (acute supraglottitis):

- Expected findings:

- Drooling
- Dysphonias: thick, muffled voice and froglike croaking sound
- Dysphagia
- High fever

- Nursing care:

- Avoid throat culture/putting tongue blade in the mouth
- Prepare for intubation
- Administer ABX therapy starting with IV, then transition to oral to complete a 10-day course
- Droplet isolation precautions for first 24 hr after IV ABX initiated

3. Influenza A and B

-Expected findings:

- Sudden onset of chills and fever
- Body aches

-Antivirals can be given but must be within 48 hrs of onset

- Amantadine, Zanamivir, Oseltamivir

Chapter 18: Asthma

1. Triggers to asthma

- Allergens
- Smoke
- Exercise
- Cold air or changes in the weather or temperature

2. Expected findings

- Dyspnea
- Cough
- Audible wheezing
- Use of accessory muscles

3. Medications

- Bronchodilators: albuterol
 - SE: tremors/tachycardia
- Anticholinergics: atropine/ipratropium
 - Dries you up
- Corticosteroids: prednisone
 - Rinse mouth afterwards

4. How to use a peak flow meter

- Ensure the marker is zeroed
- Close lips tightly around the mouthpiece
- Blow out as hard and as quickly as possible

- Repeat 3 more times
- Record highest number

5. Complications

-Status asthmaticus:

- Airway obstruction that is often unresponsive to treatment
- Prepare for emergency intubation

Chapter 19: Cystic Fibrosis

1. Cystic fibrosis

- Both biological parents carry the recessive trait for CF
- Characterized by mucus glands that secrete an increase in the quantity of thick, tenacious mucus, which leads to mechanical obstruction of organs

2. Expected findings

-Early manifestations:

- Wheezing, rhonchi
- Dry, nonproductive cough

-Increased involvement:

- Dyspnea
- Paroxysmal cough
- Obstructive emphysema and atelectasis on chest x-ray

-Advanced involvement:

- Cyanosis
- Barrel-shaped chest
- Clubbing of fingers and toes

-GI findings:

- Large, frothy, bulky, foul-smelling stools (steatorrhea)
- Failure to gain weight or weight loss
- Delayed growth patterns
- Distended abdomen
- Thin arms and legs
- Deficiency of fat-soluble vitamins (Vitamin A,D,E,K)

-Integumentary findings:

- Sweat, tears, and saliva having high content of sodium and chloride

3. Diagnostic procedures

- Sweat chloride test (most definitive)

4. Nursing care

-Chest physiotherapy

-High protein/calorie

- Give pancreatic enzymes within 30 min of eating a meal or snack

-Multivitamin A,D,E, and K

5. Medications

-Bronchodilators: albuterol

-Anticholinergics: ipratropium bromide

- Dornase alfa (pulmozyme): decreases viscosity of mucus and improves lung function

Chapter 20: Cardiovascular disorders

1. Defects that INCREASE pulmonary blood flow

-Ventricular septal defect (VSD):

- A hole in the septum between the **right and left ventricle** that results in increased pulmonary blood flow (left-to-right shunt)
- Expected finding:
 - Loud, harsh murmur at the left sternal border

-Atrial septal defect (ASD):

- A hole in the septum between the **right and left atria** that results in increased pulmonary blood flow (left-to-right shunt)
- Expected findings:
 - Loud, harsh murmur with a fixed split second heart sound

-Patent ductus arteriosus (PDA):

- Connection between **pulmonary artery and aorta** stays open after birth causing mixing of blood
- Expected findings:
 - Murmur (machine hum)
 - Bounding pulses

2. Defects that DECREASE pulmonary blood flow

-Tricuspid atresia:

- A complete closure of the tricuspid valve that results in mixed blood flow

-Tetralogy of Fallot:

- Pulmonary stenosis, right ventricular hypertrophy, overriding aorta, and ventricular septal defect (PROV)

3. Obstructive defects

-Pulmonary stenosis:

- A narrowing of the pulmonary valve or pulmonary artery that results in obstruction of blood flow from the ventricles

-Expected findings:

- Systolic ejection murmur

-Aortic stenosis:

- A narrowing of the aortic valve

-Coarctation of the aorta:

- A narrowing of the lumen of the aorta

-Expected findings: (BP/pulse elevated on top, but not on the bottom)

- Elevated blood pressure in the arms
- Bounding pulses in the upper extremities
- Decreased blood pressure in the lower extremities
- Cool skin of lower extremities
- Weak or absent femoral pulses

4. Mixed defects

-Transposition of the great arteries:

-A condition in which the aorta is connected to the right ventricle instead of the left, and the pulmonary artery is connected to the left ventricle instead of the right

-Expected findings:

-Severe to less cyanosis depending on the size of the associated defect

-Truncus arteriosus:

-Failure of septum formation, resulting in a single vessel that comes off of the ventricles

-Hypoplastic left heart syndrome:

-Left side of the heart is underdeveloped

-Expected findings:

-Lethargy/cyanosis

5. Cardiac catheterization

-Check for allergies to iodine or shellfish

-Provide for NPO status 4-6 hr prior

-Locate and mark the Dorsalis pedis and posterior tibial pulses on both extremities

-Prevent bleeding by maintaining the affected extremity in a straight position for 4-8 hr

6. Heart medications

-Digoxin: Improves myocardial contractility

-Infant: hold if pulse < 90

-Children: hold if pulse < 70

-Monitor for toxicity:

-Bradycardia

-Dysrhythmias

-Nausea/vomiting

-Anorexia

-ACE inhibitors: captopril

-Beta-blockers: metoprolol

-Potassium-wasting diuretics: furosemide

-Watch for hypokalemia (nausea/vomiting/dizziness)

-Foods high in potassium:

-Bran cereal, potatoes, tomatoes, dark green leafy veggies, bananas, orange juice, oranges, and melons

7. Hypoxemia

-Immediately place the child in the knee-chest position, attempt to calm the child, and call for help

8. Infective (bacterial) endocarditis

-Counsel the family of high-risk children about the need for prophylactic antibiotics prior to dental and surgical procedures

9. Rheumatic fever

-Usually occurs within 2-6 weeks following an untreated or partially treated upper respiratory infection (strep throat) with GABHS

-Laboratory tests:

-Throat culture for GABHS

-Serum antistreptolysin-O titer:

-Elevated or rising titer, most reliable diagnostic test

-Jones Criteria:

- The diagnosis of rheumatic fever is made on the basis of modified jones criteria
- The child should demonstrate the presence of 2 major criteria or the presence of 1 major and 2 minor criterion following an acute infection with GABHS infection

-Major criteria:

- Carditis
- Subcutaneous nodules
- Polyarthritis
- Rash (erythema marginatum)
- Chorea: involuntary muscle movements

-Minor criteria:

- Fever
- Arthralgia

10. Kawasaki disease

-Acute systemic vasculitis (inflammation of the blood vessels in the body)

-Expected findings:

-Acute phase:

- Fever greater than 102 F lasting 5 days to 2 weeks and unresponsive to antipyretics
- Irritability
- Red eyes without drainage
- Bright red, chapped lips
- Strawberry tongue with white coating or red bumps on the posterior aspect
- Red oral mucous membranes with inflammation including the pharynx
- Swelling of hand and feet with red palms and soles

-Sub acute phase:

- Peeling skin around the nails, on the palms/soles

-Medication:

- Gamma globulin: IVGG
- Aspirin

-Client education:

- Avoid live immunizations for 11 months

Chapter 21: Hematologic disorders

1. Epistaxis

- Have the child sit up with the head tilted slightly forward to prevent aspiration of blood
- Apply pressure to the lower nose with the thumb and forefinger for at least 10 min
- If needed, pack cotton or tissue into the side of the nose that is bleeding
- Apply ice across the bridge of the nose if bleeding continues

2. Iron deficiency anemia

-Adolescents are at risk due to poor diet, rapid growth, menses, strenuous activities, and obesity

-**Risk factors:**

- Excessive intake of cow's milk in toddlers
 - Milk is not a good source of iron
 - Milk takes the place of iron-rich solid foods

-**Nursing care:**

- Modify the infants diet to include high iron and vitamin C
- Iron supplements:
 - Give 1 hr before or 2 hr after milk or antacid to prevent decreased absorption
 - Give with Vitamin c to increase absorption
 - Use a straw to prevent staining of the teeth
 - Use a z-track method for injection
 - Do not massage the injection site
 - Tarry green stools are expected
- Instruct the child to brush teeth after oral dose to minimize or prevent staining

-**Dietary sources of iron:**

- Infants:** Iron-fortified cereals and formula
- Older children:** Dried beans, lentils, peanut butter, green leafy veggies, iron-fortified breads and flour, and red meat

3. Sickle cell anemia

-SCD is an autosomal recessive genetic disorder

-Primarily affects African Americans

-Causes cell to be sickled shape causing increased blood viscosity, obstruction of blood flow, and tissue hypoxia

-**Expected findings:**

- Reports of pain: due to tissue ischemia
- Shortness of breath/fatigue
- Pallor
- Jaundice

-**Vaso-occlusive crisis (painful episode):**

- Severe pain, usually in bones, joints, and abdomen

-**Nursing care:**

- Keep patient hydrated
- Schedule administration of analgesics to prevent pain

-**Complications:**

- CVA

4. Hemophilia

-Bleeding time is extended due to lack of a factor required for blood to clot

-**Hemophilia A:** deficient of factor VIII

-**Hemophilia B:** deficient of factor IX

-**Expected findings:**

- Excessive bleeding

- Reports of joint pain and stiffness
- Easy bruising
- Activity intolerance

-Laboratory tests:

- Prolonged PTT
- PLT and PT within expected ranges

-Nursing care:

- Avoid unnecessary skin punctures
- Elevate and apply ice to the affected joints
- Set activity restrictions to avoid injury
 - Low-contact sports: bowling, fishing, swimming, and golf
- Use soft-bristled toothbrushes
- Control bleeding episodes using RICE (rest, ice, compress, and elevate)

-Complications:

- Joint deformity

Chapter 22: Acute infectious GI disorders

1. Rotavirus

-Most common cause of diarrhea in children younger than 5 years

-Manifestations:

- Fever
- Diarrhea for 5-7 days
- Vomiting for 2 days

2. Enterobius vermicularis (pinworm)

-Manifestations:

- Perineal itching

-Perform a tape test over anus at night

3. Diarrhea

-Avoid:

- Fruit juices, carbonated sodas, and gelatin
- Caffeine
- Chicken or beef broth
- BRAT diet

-Cleanse toys and childcare areas thoroughly to prevent further spread or reinfestation

-Avoid undercooked or under-refrigerated food

-Do not share dishes and utensils

4. Dehydration

-Mild:

- Capillary refill greater than 2 seconds
- Possible slight thirst

-Moderate:

- Capillary refill between 2-4 seconds
- Possible thirst and irritability

-Severe:

- Capillary refill >4
- Tachycardia
- Extreme thirst
- Very dry mucous membranes and tented skin
- No tearing with sunken eyeballs
- Sunken anterior fontanel
- Oliguria and anuria

Chapter 23: Gastrointestinal structural and inflammatory disorders

1. Cleft lip and cleft palate

-Cleft lip:

- Results from incomplete fusion of the oral cavity during intrauterine life
- Apply elbow restraints

-Cleft palate:

- Results from the incomplete fusion of the palates during intrauterine life
- Infant may be placed on the abdomen (prone)

-For isolated cleft lip:

- Use a wide-based nipple for bottle-feeding

-For CP or CL and CP:

- Use a specialized bottle with a one-way valve and a specially cut nipple

-Avoid having the infant suck on a nipple or pacifier

-Complications:

- Ear infections and hearing loss
- Speech and language impairment
- Dental problems

2. GERD

-Expected findings:

-Infants:

- Sitting up or forceful vomiting
- Irritability
- Arching of back

-Children:

- Difficulty swallowing
- Chronic cough
- Non-cardiac chest pain

-Nursing care:

- Small, Frequent Meals
- Thicken infant's formula with 1 tsp. to 1 tbsp. rice cereal per 1oz formula
- Avoid: Caffeine | Citrus | Peppermint | Spicy or Fried Foods
- Assist with weight control
- HOB elevated during and after meals (at least 30 degrees)

-Therapeutic procedures:

- Nissen fundoplication:** wraps the fundus of the stomach around the distal esophagus to decrease reflux

3. Hypertrophic pyloric stenosis

-Thickening of the pyloric sphincter, which creates an obstruction

-**Expected findings:**

- Projectile vomiting

- Constant hunger/dehydration

- Olive-shaped mass in the right upper quadrant of the abdomen

-**Therapeutic procedures:**

- Pylorotomy

4. Hirschprung's disease

-Lack of ganglionic cells in segments of the colon resulting in decreased motility and mechanical obstruction

-**Expected findings:**

- Newborn:

- Failure to pass meconium within 24-48 after birth

- Episodes of vomiting bile

- Refusal to eat

- Abdominal distention

- Child:

- Foul-smelling, ribbon-like stool

-**Nursing care:**

- High-protein/calorie and low-fiber diet

-**Therapeutic Procedures:**

- Surgical removal of the aganglionic section of the bowel

- Temporary colostomy can be required

5. Intussusception

-Proximal segment of the bowel telescopes into a more distal segment

-Abdominal mass (sausage-shaped)

-Stools mixed with blood and mucus that resembles the consistency of red currant jelly

-**Therapeutic procedures:**

- Air enema

6. Appendicitis

-Inflammation of the vermiform appendix

-Average client age is 10 years

-**Expected findings:**

- Abdominal pain in the right lower quadrant

- Decrease or absent bowel sounds

- Fever

-**Laboratory tests:**

- CBC

-**Diagnostic procedures:**

- CT scans

-**Nursing care:**

- Avoid applying heat to the abdomen

- Watch for pain: if patient no longer feels pain, appendix ruptured

-**Removal of nonruptured appendix:**

-Pre-op:

- Give IV fluid replacement/IV antibiotic

-Post-op:

- Place NG tube for decompression

Chapter 24: Enuresis and Urinary tract infections

1. Enuresis

-Must be at least 5 years of age before there's consideration about diagnosing enuresis

-Primary enuresis:

- A child has never been free of bed-wetting for any extended periods of time

-Secondary enuresis:

- A child who started bed-wetting after development of urinary control

-Nursing care:

- Have the child empty their bladder before bedtime

- Encourage fluids during the day and restrict fluids in the evening

- Avoid fruit and fruit drink, caffeinated or carbonated drinks after 1600

- Use positive reinforcement

- Avoid punishing, scolding, or teaching the child following an incident

2. UTI

-Physical assessment findings:

-Infants:

- Poor feeding, vomiting, or failure to gain weight

- Increase in thirst

- Frequent urination

- Foul-smelling urine

- Fever

- Seizure

- Pallor

-Laboratory tests:

-Urinalysis and urine culture and sensitivity:

- Nitrates and leukocytes will be increased

-Client education:

- Teach females to wipe the perineal area from front to back

- Suggest the use of cotton underwear

- Instruct avoidance of bubble baths

- Encourage frequent voiding

- Empty complete bladder

Chapter 25: Structural Disorders of the genitourinary tract and Reproductive system

1. Defects of the genitourinary tract

-Bladder exstrophy:

- Eversion of the posterior bladder through the anterior bladder wall and lower abdominal wall
- Cover the exposed bladder with sterile, nonadherent dressing
- Prepare the child for immediate surgery

-Hypospadias:

- Urethral opening located just below the glans penis, behind the glans penis, or on the ventral surface of the penile shaft
- Meatus opening below the glans penis

-Epispadias:

- Urethra opened on dorsal surface of the penis

-Phimosis:

- Inability to retract foreskin of penis

-Testicular torsion:

- Pain is either acute or insidious in onset and radiates to the groin area

Chapter 26: Renal disorders

1. Acute glomerulonephritis

-Associated with GABHS

-Physical assessment findings:

- Cloudy, tea-colored urine
- Decreased urine output
- Periorbital edema
- Facial edema that is worse in the morning but then spreads to extremities and abdomen with progression of the day
- Mild to severe HTN

-Laboratory:

-Urinalysis:

- Proteinuria, smoke or tea-colored urine, hematuria, increased specific gravity

-Renal function:

- Elevated BUN and creatinine

-Antistreptolysin O (ASO) titer:

- Positive indicator for the presence of streptococcal antibodies

-Nursing care:

- Possible restriction of sodium and fluid

- Monitor for skin break down (at risk due to edema)

- Encourage frequent turning and repositioning

-Medications:

- Diuretics and antipyretics

2. Nephrotic syndrome

-Alterations in the glomerular membrane allow proteins (especially albumin) to pass into the urine, resulting in decreased serum osmotic pressure

-Expected findings:

- Facial and periorbital edema: decreased throughout the day

- Decreased frothy urine

-BP within expected range

Laboratory tests:

-Urinalysis/24-hour urine:

-Proteinuria: protein greater than 2+ on dipsticks

-Serum chemistry:

-Hypoalbuminemia: reduced serum protein and albumin

-Hyperlipidemia: elevated serum lipid levels

-Hemoconcentration: elevated Hgb, Hct, and platelets

Nursing care:

-Monitor daily weights

-Monitor edema and measure abdominal girth daily

-Salt can be restricted during the edematous phase

-Assess skin for breakdown

Medications:

-Corticosteroids: prednisone

-Diuretic: furosemide

-25% albumin: increases volume and decrease edema

Chapter 27: Fractures

1. Fractures

Closed or simple:

-The fracture occurs without a break in the skin

Open or compound:

-The fracture occurs with an open wound and bone protruding

Complicated fracture:

-The fracture results in injury to other organs and tissues

2. Nursing care

Maintain ABC's

-Stabilize the injured area, avoiding unnecessary movement

-Elevate the affected limb and apply ice packs (not to exceed 20 min)

Neurovascular assessment:

-**Sensation:** Assess for numbness or tingling sensation of the extremity

-Loss of sensation can indicate nerve damage

-**Skin Temperature:** Assess the extremity for temperature.

-It should be warm, not cool, to touch

-**Skin Color:** Assess the color of the affected extremity

-Check distal to the injury and look for changes of pigmentation

-**Capillary Refill:** Press the nail beds of the affected extremity until blanching

occurs

-Blood return should be within 3 seconds

-**Pulses:** Should be palpable and strong

-Pulses should be equal to the pulses of the unaffected extremity

-**Movement:** The client should be able to move the joints distal to the injury

-Move Fingers or Toes

3. Casting

- Elevate the cast above the level of the heart during the first 24
- Apply ice for the first 24 hours to prevent swelling
- Turn and position every 2 hours (cast dries faster | prevents cast from changing shape)
- Assess for increased warmth or hot spots on the cast surface (infection)
- Plaster Casts: Use Palms of Hands to avoid Denting | Expose the Cast to Air
- Instruct the client not to place any foreign objects inside the cast to avoid trauma to the skin

4. Traction care

- Maintain body alignment
- Pharmacological and Nonpharmacologic Interventions for Pain and Muscle Spasms
- Assess and monitor neurovascular status
- Assess pin sites for pain, redness, swelling, drainage, or odor
- Weights should hang freely
- Halo device:
 - Ensure that the wrench to release the rod is readily available when using halo traction in the event that CPR is necessary

5. Complications

-Compartment syndrome:

- Compression of nerves, blood vessels, and muscle inside a confined place, resulting in neuromuscular ischemia
- Findings: 5 P's:
 - Pain:** unrelieved with elevation or analgesics, increases with passive movement
 - Paresthesia:** numbness (early finding)
 - Pulselessness:** distal to fracture
 - Paralysis:** inability to move digits (nerve damage)
 - Pale:** cold skin and cyanosis to nail beds

-Osteomyelitis:

- Expected findings:**
 - Fever
 - Tachycardia
 - Edema
 - Pain is constant but increases with movement

-Nursing actions:

- Administer IV and oral ABX therapy

Chapter 28: Musculoskeletal congenital disorders

1. Clubfoot

- A complex deformity of the foot and ankle
- Therapeutic procedures:
 - Series of castings

2. Legg-calve-Perthes disease

- Aseptic necrosis of the femoral head can be unilateral or bilateral

-Expected findings:

- Intermittent painless limp
 - Hip stiffness
 - Limited ROM
 - Shortening of the affected leg
- Maintain rest and limited weight bearing:**

- Abduction brace
- Casts
- Physical therapy
- Traction

-Surgical intervention:

- Osteotomy of the hip or femur

3. Developmental dysplasia of the hip (DDH)

-Expected findings:

-Infant:

- Asymmetry of gluteal and thigh folds
- Limited hip abduction
- Widened perineum

-Positive Ortolani test:

- Hip is reduced by abduction

-Positive Barlow Test:

- Hip is dislocated by adduction

-Child:

- One leg shorter than the other

-Positive Trendelenburg sign:

- While bearing weight on the affected side, the pelvis tilts downward

- Walk with a limp

-Pavlik harness:

- For newborn to 6 months

- Maintain harness placement for ? to 12 weeks

- Check straps every 1 to 2 weeks for adjustment

- Perform neurovascular and skin integrity checks (2-3 times/day)

- Teach the family not to adjust the straps

-Teach the family skin care:

- Use an undershirt

- Wear knee socks

- Gently massage skin under straps

- Avoid lotions/powders

- Place diaper under the straps

-Hip Spica cast/Bryant traction:

- > 6 months

- Hips flexed at 90-degree angle with buttock raised off of the bed

- Evaluate hydration status frequently

- Assess elimination status daily

4. Osteogenesis imperfecta

-“Brittle bone disease”

-An inherited condition that results in bone fractures and deformity along with restricted growth

-**Expected findings:**

- Multiple bone fractures
- Blue sclera
- Early hearing loss
- Small, discolored teeth

-**Medications:**

- Pamidronate: Increase bone density
- SE: decreases electrolytes

-**Nursing care:**

- Teach the family and client low-impact exercises

5. Scoliosis

-Characterized by a lateral curvature of the spine and spinal rotation that causes rib asymmetry

-Have the child bend over at the waist with arms hanging down and observe for asymmetry of ribs and flank

-**Bracing:**

- Customized braces slow the progression of the curve

-**Spinal fusion with rod placement:**

- Used for curvatures >45 degrees

Chapter 29: Chronic Neuromusculoskeletal disorders

1. Cerebral palsy

-Is a non-progressive impairment of motor function, especially that of muscle control, coordination, and posture

-Abnormal perception and sensation; visual, hearing, and speech impairment; seizures; and cognitive disabilities

-**Risk factors:**

- Exact cause is unknown
- Prenatal, perinatal, and postnatal risk factors

-**Expected findings:**

-**Spastic CP (pyramidal):**

- Hypertonicity, increased deep tendon reflex; clonus; and poor control of motion, balance and posture

-**Dyskinetic CP (nonspastic, extrapyramidal):**

- Involuntary jerking movements that appear slow, writhing, and wormlike

-**Ataxic CP (nonspastic, extrapyramidal):**

- Poor ability to do repetitive movements
- Lack of coordination with purposeful movements (ex: reaching for an object)

-**Medications:**

- Baclofen/Diazepam

-**Complications:**

-Aspiration

2. Spina Bifida

-Is failure of the osseous spine to close

-**Meningocele:**

-The sac contains spinal fluid and meninges

-**Myelomeningocele:**

-The sac contains spinal fluid, meninges, and nerves

-**Risk factors:**

-Medications/substances taken during pregnancy

-Insufficient folic acid intake during pregnancy

-**Physical assessment findings:**

-Protruding sac midline of the osseous spine (cystica)

-Dimpling in the lumbosacral area (occulta)

-**Therapeutic procedures:**

-Closure of myelomeningocele sac is done as soon as possible to prevent complications of injury and infection

-Apply a sterile, moist, nonadherent dressing with 0.9% sodium chloride on the sac, changing it every 2 hr

-Place in the infant in prone position with hips flexed, legs abducted

-**Complications:**

-Skin ulceration

-**Latex allergy:**

-Also bananas, avocados, kiwi, and chestnuts

-**Increased intracranial pressure:**

-Infants:

-High-pitched cry, lethargy, vomiting, bulging fontanelles, and increased head circumference

-**Bladder issues**

-**Orthopedic issues**

3. Juvenile idiopathic arthritis

-Chronic autoimmune inflammatory disease affecting joints and other tissues

-**Expected findings:**

-Joint swelling/stiffness/redness/warmth that tends to be worse in the morning or after inactivity

-**Nursing care:**

-Apply heat or warm moist packs to the child's affected joints prior to exercise

-Encourage warm baths

-**Medications:**

-**NSAIDs:** control pain and inflammation

-Ibuprofen, naproxen, diclofenac, indomethacin, and tolmetin

-**DMARD:** slows joint degeneration and progression of rheumatoid arthritis when NSAIDs do not work alone

-Methotrexate

-**Corticosteroid:**

-Prednisone

4. Muscular dystrophy

-Is a group of inherited disorders with progressive degeneration of symmetric skeletal muscle groups causing progressive muscle weakness and wasting

-**Duchenne (psuedohypertrophic) muscular dystrophy (DMD):**

-Is the most common form of MD

-Onset between 3 and 5 years

-**Expected findings:**

-Muscle weakness beginning in the lower extremities

-Unsteady gait, with a waddle

-Lordosis

-Delayed motor skill development

-Frequent falling

-Learning difficulties

-Progressive muscle atrophy

-Respiratory and cardiac difficulties as the disease progresses

-**Medications:**

-Corticosteroids

-**Complications:**

-Respiratory complications

Chapter 30: Skin infections and infestations

1. Bacterial skin infections

-**Impetigo contagiosa:**

-**Manifestations:**

-Reddish macule becomes vesicular

-Erupts easily leaving moist erosion on the skin, secretions dry forming crusts

-Spreads by direct

-Pruritus common

-**Management:**

-Topical bactericidal or triple antibiotic ointment

-Burrow's solution

-**Cellulitis:**

-**Manifestations:**

-Firm, swollen, red area of the skin and subcutaneous tissue

-Fever/malaise

-**Management:**

-Oral or parenteral ABX

-Warm/moist compress

2. Fungal skin infections

-**Tinea capitis (ringworm of the scalp):**

-Use selenium sulfide shampoos

-Treat infected pets

-**Tinea corporis (Ringworm of the body):**

-Round erythematous scaling patch

- Use topical antifungal (tolnaftate, Clotrimazole)

- Tinea pedis (athletes foot):**

- Between toes or on the plantar surface of the feet

3. Skin infestations

- Scabies mite (Sarcoptes scabiei):**

- Manifestations:**

- Itchy, especially at night

- Rash, especially between the fingers

- Thin, pencil-like marks on the skin

- Infants:

- Pimples on the trunk

- Blisters on the palms of the hands and soles of the feet

- Interventions:**

- Scabicide such as 5% permethrin all over body

- Treat entire family and persons that have been in contact with infected person during and 60 days after infection

- Wash underwear, towels, clothing, and sleepwear in hot water

- Pediculosis capitis (Head lice):**

- Intense itching

- Nits (white specs) on the hair shaft

- 1% permethrin shampoo

- Remove nits with a nit comb; repeat in 7 days after shampoo TX

- Washing clothing, bedding in hot water with detergent

- Client education:**

- Teach the parent to bag items that cannot be laundered into tightly sealed bag for 14 days

- Teach the parents to boil combs, brushes and hair accessories for 10 min or soak in lice-killing products for 1 hr

- Discourage sharing of personal items

Chapter 31: Dermatitis and Acne

1. Dermatitis

- Diaper dermatitis**

- Nursing interventions:**

- Clean urine in the perineal area with a nonirritating cleanser

- Expose the affected area to air

- Use superabsorbent disposable diapers to reduce skin exposure (no cloth)

- Apply a skin barrier (zinc oxide)

- Poisonous plant exposure:**

- Cleanse exposed area as soon as possible with cold running water, then soap and water shower

- Apply calamine lotion; burrow solution compresses, or natural colloidal oatmeal baths

- Use topical corticosteroid gel

-Seborrheic dermatitis: (thick flakes on scalp)

- Treat by gently scrubbing the scalp to remove scales and crusted areas
- Petrolatum, vegetable oil, or mineral oil can be helpful
- Use a fine-tooth comb to remove the loosened crusts from the hair
- Shampoo daily with antiseborrheic shampoo

-Client education:

- Encourage frequent diaper
- Advise parents that their child should avoid bubble baths and harsh soaps
- No talcum powder but cornstarch is okay to prevent friction
- Keep fingernails trimmed short

2. Atopic dermatitis

- Is a type of eczema
- Dress in Cotton Clothing (avoid wool and synthetic fabrics)
- Avoid excessive heat and perspiration (increase itching)
- Avoid irritants (Bubble Baths | Soaps | Perfumes | Fabric Softeners)
- Place gloves or cotton socks over hands for sleeping

-Medications:

- Antihistamines/topical corticosteroids

3. Acne

-Nursing care:

- Teach the child to gently wash the face and other affected areas, avoiding scrubbing and abrasive cleaners

-Medications:

-**Trentinoin:**

- Avoid Sun Exposure | Use Sunscreen Daily (SPF 15 or greater)

-**Benzoyl peroxide:**

- Can bleach clothing but not skin

-**Isotretinoin:**

-SE:

- Elevated cholesterol/triglycerides

- Depression/suicidal ideation/violent behaviors

- Contraindicated in women who are not taking oral contraceptives

Chapter 32: Burns

1. Stages of burns

-First degree:

-**Superficial:**

- Damage to the epidermis (sunburn)
- Pink to red in color with no blisters
- Blanches with pressure
- Painful

-Second degree:

-**Superficial partial thickness:**

- Damage to the entire epidermis
- Dermal elements are intact
- Painful, moist, red in color with blisters
- Blanches with pressure
- Sensitive to temperature changes, exposure to air, and light touch

-Deep partial thickness:

- Damage to the entire epidermis and some parts of the dermis
- Sweat glands and hair follicles remain intact
- Red to white in color, with blisters
- Blanches with pressure
- Painful
- Sensitive to temperature changes and light touch

-Third degree:

-Full thickness:

- Damage to the entire epidermis and dermis and possible damage to the subcutaneous tissue
- Red to tan, black, brown, or waxy white in color
- Dry, leathery appearance

-Fourth-degree:

-Deep full thickness:

- Damage to all layers of the skin that extends to muscle, bone, and fascia
- No pain is present

2. Nursing care

-Check immunization status, and determine the need for immunization

- Administer tetanus vaccine if it has been more than 5 years

-Educate the family to avoid using greasy lotions or butter on burns

-Maintain airway and ventilation

-Initiate IV access with large-bore catheter

- Multiple access points may be necessary

-Fluid replacement is important during the first 24 hours

- Isotonic crystalloid solutions, such as 0.9% sodium chloride or lactated ringer's are used during the early stage of burn recovery

-Maintain urine output of 0.5 to 1 ml/kg/hr is <30 kg

-Maintain urine output of 30 ml/hr for >30 kg

-Manage pain:

- Use IV opioid

-Provide nutritional support:

- Increase caloric intake/protein

- Vitamin A, C, and zinc for wound healing

-Maintain active and passive range of motion

3. Medications

-Topical agents:

-Silver sulfadiazine/ Mafenide acetate

- Use with 2nd and 3rd degree burns

- Apply to cleansed, debrided area

- Wear sterile gloves for applications

- Bacitracin:**

- Use for prevention of secondary infection

4. Skin coverings

- Biologic skin coverings:**

- Allograft (homograft):**

- Skin from human cadavers that is used for partial and full thickness burn wounds

- Xenograft:**

- Obtained from animals: pigs (partial thickness burns)

- Permanent skin coverings:**

- Autografts:**

- Client's skin

Chapter 33: Diabetes Mellitus

1. Risk factors

- Genetics

- Toxins/viruses: can destroy the beta cells ->type 1 DM

- Obesity/physical inactivity/HTN -> type 2 DM

2. Expected findings

- Hypoglycemia: blood glucose <60**

- Hunger, lightheadedness, and shakiness

- Pale, cool skin/diaphoresis

- Decreasing LOC

- Slurred speech

- Headache and blurred vision

- Seizures leading to coma

- Hyperglycemia: blood glucose >250**

- Thirst

- Polyuria (early sign)/oliguria (late sign)

- Nausea, vomiting, and abdominal pain

- Skin that is warm, dry, and flushed with poor turgor

- Dry mucous membranes

- Confusion

- Weakness

- Lethargy

- Weak pulse

- Diminished reflexes

- Rapid, deep respirations with acetone/fruit odor due to ketones (Kussmaul respirations)

3. Laboratory tests

- Diagnostic criteria for diabetes:**

- An 8-hr fasting blood glucose level of 126 or more

- Random blood glucose of 200 or more with classic sign of diabetes

- An oral glucose tolerance test of 200 or more in the 2 hr sample

-Glycosylated hemoglobin (HbA1c):

- Expected reference range is 4%-5.9%
- Acceptable target for children who have diabetes: 6.5%-8%
- If >7%: not regulating sugar well

4. Nursing care

- Trimming toenails straight across with clippers and filing edges with a nail file
- Caution the child against wearing sandals, walking barefoot, or wearing socks without socks
- Dry feet completely
- Can use mild foot powder: cornstarch
- Never use commercial remedies for removing callus/corn
- Sock: cotton or wool
- No heating pads for feet

-Teach the child illness management:

- Monitor blood glucose and urinary ketone levels every 3 hr
- Continue to take insulin or oral Antidiabetic agents
- Encourage sugar-free, noncaffeinated liquids to prevent dehydration

-Call the provider for the following:

- Blood glucose >240
- Fever 102F
- Positive ketones in the urine
- Disorientation or confusion occurs
- Rapid breathing is experienced

-Treat with 10-15 g simple carbohydrates (1tbsp sugar)
-Ex: 4 OZ orange juice/8OZ milk

-If the child is unconscious or unable to swallow:

- Administer glucagon SC or IM
- Administer simple carbohydrates as soon as tolerated

5. Medications

Clear before cloudy

33.1 Rate of onset, peak, and duration of action by insulin type

	TYPE	ONSET	PEAK	DURATION
Rapid-acting	Insulin lispro	15 to 30 min	30 min to 2.5 hr	3 to 6 hr
Short-acting	Regular insulin	30 min to 1 hr	1 to 5 hr	6 to 10 hr
Intermediate-acting	NPH insulin	1 to 2 hr	6 to 14 hr	16 to 24 hr
Long-acting	Insulin glargine	70 min	None	24 hr

↑ Never mix anything with

6. Complications

-DKA:

->330 mg/dL

-Expected findings:

- Ketone levels in the blood and urine

- Fruity scent to the breath
- Mental confusion
- Dyspnea
- Nausea and vomiting
- Electrolyte imbalances: Metabolic acidosis/hyperkalemia

-Nursing actions:

- Monitor serum potassium levels
- Administer sodium bicarbonate by slow IV infusion for severe acidosis (pH <7)
- Have a cardiac monitor

-Kidney disease

-Eye disease

-Neurologic complications

Chapter 34: Growth Hormone deficiency

1. Expected findings

- Short stature but proportional height and weight
- Delayed epiphyseal closure
- Delayed sexual development

2. Medications

-Somatropin:

- Given until epiphyseal plate closes
- Administer SC

Chapter 35: Immunizations

1. Contraindications

-DTaP:

- Occurrence of encephalopathy within 7 days following prior doses of the vaccine

-IPV:

- Anaphylactic reaction to neomycin, streptomycin or polymyxin B

-MMR:

- Anaphylactic reaction to eggs, gelatin, and neomycin

-Influenza vaccine:

- Hypersensitivity to eggs

-Varicella:

- If taking corticosteroids

-The common cold and other minor illnesses are not contraindications to immunizations

-Severe febrile illness is a contraindication to all immunizations

-Do not administer live virus vaccines, such as varicella or MMR, to a child who is severely Immunocompromised

2. Nursing administration

- Give IM immunizations in the Vastus lateralis or ventrogluteal muscle in infants and young children
 - Give IM immunization in the deltoid muscle for older children/adolescents
 - Give infants a concentrated oral sucrose solution 2 min prior to, during, and 3 min after immunization administration
 - Document date, route, site of immunization, lot number, manufacturer and exp.
- Date

Chapter 36: Communicable Diseases

1. Conjunctivitis

- Spread: Direct contact (viral/bacterial)
- Expected findings:
 - Pink or red color in the sclera of the eyes
 - Crusting of the eyelids in the morning

2. Epstein-Barr virus (EBV)/mononucleosis

- Spread: saliva
- Expected findings for infectious mononucleosis:
 - Fever
 - Swollen lymph glands
 - Splenomegaly
 - Hepatic involvement

-Complications: ruptured spleen (no contact sports)

3. Erythema infectiosum (fifth disease)/parvovirus B19

- Spread: droplet/blood
- Expected findings:
 - Rash (7 days to several weeks):
 - Red rash on face (slapped cheek), which appears from day 1 to 4

4. Mumps/paramyxovirus

- Spread: droplet
- Expected findings:
 - Painful, swollen parotid glands

5. Pertussis (whooping cough)/Bordetella pertussis

- Spread: direct contact/droplet/indirect contact with freshly contaminated articles
- Expected findings:
 - Common cold manifestations:
 - Runny nose/congestion, sneezing, mild fever, and mild cough
 - Severe coughing starts in 1-2 weeks:
 - Coughing fits
 - Violent and rapid coughing
 - Loud "whooping" sound upon inspiration

6. Rubella (German measles)/rubella virus

- Spread: droplet
- Expected findings:
 - Red rash that starts on the face and spreads to the rest of the body, lasting 2-3 days

-Complications:

- Birth defects (deafness; heart defects; mental, liver, and spleen damage) in fetus of women infected during pregnancy

7. Rubeola (measles)/rubeola virus

-Spread: droplet

-Expected findings:

- Cough, runny nose, red eyes, and sore throat

-Rash:

- Koplik spots (tiny white spots) appear in mouth 2 days before rash

8. Varicella (chicken pox)/varicella-zoster virus

-Spread: droplet (airborne)

-Expected findings:

-Manifestations 1-2 days prior to rash:

- Fever/fatigue

-Rash:

- Macules start in center of trunk, spreading to the face and proximal extremities

- Progresses from macules, to papules, to vesicles, and crust formations follow

9. Nursing care

-Do not administer aspirin, due to the risk of Reye Syndrome

-Provide calamine lotion for topical relief

-Keep the child's fingernails clean and short

10. Medications

-Antihistamine

-Antiviral therapy:

- Acyclovir for high-risk clients who have varicella

Chapter 37: Otitis Media

1. Risk factors

-Most common in the first 24 months of life and again when children enter school ages (5-6)

2. Medications

-Acetaminophen/ibuprofen:

- For analgesia and reduce fever

-Antibiotics

3. Therapeutic procedures

-Myringotomy and placement of tympanoplasty tubes

- A small incision is made in the tympanic membrane

- The tubes come out spontaneously (usually in 6-12 months)

- Instruct parents to notify the provider when tubes come out

- This is usually does not require replacement of tubes

Chapter 38: HIV/AIDS

1. HIV/AIDS

- HIV infection is a viral infection in which the virus primarily infects a specific subset of T-lymphocytes, the CD4 T cell causing immune dysfunction
- This leads to organ dysfunction and a variety of opportunistic illnesses in a weakened host

2. Expected findings

-Mild:

- Lymphadenopathy
- Hepatomegaly
- Splenomegaly
- Dermatitis
- Parotitis

-Severe:

- Multiple serious bacterial infections
- Kaposi's sarcoma: skin infection
- Pneumocystis carinii pneumonia
- Wasting syndrome

3. Laboratory findings

-Ages >6:

- CD4 T-lymphocyte count= lower than 500=some immunosuppression
- CD4 T-lymphocyte count=lower than 200=severe immunosuppression

4. Nursing care

- Diet high in calories and protein
- Provide good oral care
- Prevent infection using standard precautions
 - Does not need special precautions
- Teach the child and parents to avoid individuals who have colds/infections/viruses
- Encourage immunizations:
 - Pneumococcal vaccine and yearly influenza vaccine

5. Medications

- Antiretroviral
- Antibiotics
- IV gamma globulin

Chapter 39: Organ neoplasms

1. Wilms' tumor (Nephroblastoma)

- Is a malignancy that occurs in the kidneys or abdomen
- Tumor is usually unilateral
- Most cases diagnosed between 2-3 years of age
- Metastasis is rare

-**Expected findings:**

- Painless, firm, nontender abdominal swelling or mass
- Fatigue, malaise, and weight loss
- Fever

-**Diagnostic tests:**

- Abdominal ultrasonography
- Abdominal and chest CT scan
- Bone marrow aspiration (rule out metastasis)

-Nursing care:

- IF WILM'S TUMOR IS SUSPECTED DO NOT PALPATE THE ABDOMEN (can cause spread)

2. Neuroblastoma

- Is a malignancy that occurs in the adrenal gland
- Usually manifested during toddler years
- Half of all cases have metastasized before diagnosis

-Expected findings:

- Half of children who have a Neuroblastoma have few findings
- Manifestations of metastasis:
 - Ill appearance
 - Periorbital ecchymosis
 - Bone pain
 - Irritability

-Diagnostic procedures:

- Skull, neck, chest, abdominal and bone CT scans
- Bone marrow aspiration (rule out metastasis)

3. Chemotherapy

- Provide an antiemetic prior to administration
- Observe the mouth for mucosal ulcerations
- Educate about the SE of chemotherapy:
 - Mouth sores
 - Loss of appetite
 - Nausea/vomiting
 - Hair loss
 - Diarrhea/constipation
 - Increased risk of infection
 - Easy bruising or bleeding
 - Fatigue

4. Radiation

- Nurse: wear lead aprons
- Instruct the child and family not to wash off marks on the skin that outline the targeted areas
- Avoid use of soaps, creams, lotions, and powders unless prescribed
- Keep the areas protected from the sun by wearing a hat and long-sleeved shirts

5. Complications

- Encourage the child to avoid crowds while undergoing chemotherapy
- Avoid fresh fruits and vegetables
- Avoid invasive procedures
- Administer filgrastim:**
 - Is a granulocyte colony-stimulating factor that stimulates WBC production
 - Given SC daily
- Administer epoetin alfa:**

- Given SC 2-3 times per week
- Stimulate RBC production
- Administer Oprelvekin
 - Given SC daily
 - For PLT formation
- Encourage the use of soft toothbrush
- Mucositis and dry mouth:
 - Lubricate the child's lips
 - Avoid hydrogen peroxide and lemon glycerin swabs

Chapter 40: Blood Neoplasms

1. Leukemia

-Is the term of a group of malignancies that affect the bone marrow and lymphatic system

-Diagnostic procedures:

- Bone marrow aspiration or biopsy analysis:
 - Topical anesthetic such as EMLA cream 45 min-1 hr prior
- CSF analysis:
 - Have the child empty their bladder
 - EMLA cream 45 min-1 hr prior
 - Side-lying position with the head flexed and knees drawn up toward the chest, and assist in maintaining the position (during procedure)
 - Remain in bed 4-8 hr in a flat position to prevent leakage and a resulting spinal headache (after)

Chapter 43: Pediatric Emergencies

1. Obstructed airway

-Children/adolescents:

- Use abdominal thrusts

-Infants:

- Combination of back blows and chest thrusts

-Remove any visual obstruction or large debris from the mouth, but do not perform a blind finger sweep

2. Drowning

-Encourage parents of toddlers to lock toilet seats when their child is at home

-Instruct parents to not leave the child unattended in the bathtub

-Inform parents not to leave the child unattended in a swimming pool, even if the child can swim

-Encourage parents to provide life jackets when boating

3. SIDS

-Risk factors:

- Maternal smoking during pregnancy
- Co-sleeping with parent or adult

- Prone or side-lying sleeping
- Low birth weight

-Education on risk reduction:

- Place the infant on the back for sleep
- Avoid exposure to tobacco smoke
- Prevent overheating
- Use a firm, tight-fitting mattress in the infant's crib
- Remove pillows, quilts, and stuffed animals from the crib during sleep
- Offer pacifier at naps and night
- Encourage breastfeeding
- Avoid co-sleeping

4. Poisoning

-1st thing to do is call poison control center

-Acetaminophen: N-acetylcysteine given orally

-Supplemental iron:

- Emesis or lavage
- Chelation therapy using deferoxamine mesylate

Chapter 44: Psychosocial issues of infants, children and adolescents

1. ADHD

-Expected findings:

-Inattention:

- Difficulty in sustaining attention
- Easily distracted
- Forgetfulness

-Hyperactivity

-Impulsivity

-Medications:

-Methylphenidate, Dextroamphetamine:

- Increases dopamine and norepinephrine levels
- Give 30 min before meals
- Give last dose of the day prior to 1800 to prevent insomnia

-Atomoxetine

2. Autism spectrum disorder

-Expected findings:

- 7-Distress when routines are changed
- Unusual attachment to objects
- Delayed or absent language development
- Withdrawn, labile mood
- Avoiding eye contact

-Nursing care:

- Decrease environmental stimulation
- Introduce the child to new situations slowly
- Encourage support groups for parents