

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 year	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 – 1year	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

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

o Walks without help | Creeps up stairs

o Uses a cup well | Builds 2 tower blocks

▪ 18 Months

o Runs clumsily | Throws overhand | Jumps in place w/ both feet | Pulls/Pushes toys

o 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)

o Walks backwards | Walks up/down stairs w/ 2 feet on each step

o Builds 6-7 blocks | Turns pages 1 @ a time

▪ 30 Months (2.5 years)

o Balances on 1 leg | Jumps across floor / off chair w/ both feet | Walks tiptoe

o 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

- Brudzinkski'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 Fontanel
 - 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 Callostomy:** 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

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
- Dysphonia: 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

-Transportation 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 criteria following an acute infection with GABHS infection

-Major criteria:

- Carditis
- Subcutaneous nodules
- Polyarthrititis
- 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:
 - Nitrites 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 fontanel, 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:
 - 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