N433 – Focus Sheet #3 – Fall 2019

Cognitive & Sensory Impairments

Utilize your textbook Ch. 39 and your ATI chapter 37

1. Differentiate between the anatomic and physiologic differences of the eyes and ears in children compared to adults—this includes the progression of normal visual and hearing development.

Eye: Acuity develop thro birth → 6-7yr.
(newborn 8-10inch - blurry vision).
easy to injury → large eyeball.
color discrimination → binocular vision by 4month
↓retinal vascularize
to focus

Hearing: intact @ birth
Recurrent d/o → affect hearing
Eustachian tube, large adenoids → Infection.

2. List the factors associated with disorders of the eyes and ears in infants and children

Refractive errors
Astigmatism
Strabismus
Amblyopia
Nystagmus
Glaucoma
Cataract

congenital deformity → associated w other body system abnormality
Eustachian tube & enlarged adenoids → ↑risk infection

3. Define these refractory disorders:

a. Myopia nearsightedness ONLY see close object, Not w/ distance
b. Hyperopia Farsightedness. ↓ distant " , Not w/ close.
c. Astigmatism Uneven vision → only see parts of letter on page
d. Amblyopia "Lazy eye". ↓ visual acuity in 1 eye.
e. Strabismus [Eso tropia - Inward deviation of eye
f. Nystagmus [Exo tropia - outward "
Rapid irregular eye movement.

4.

	Risk factors/ Cause	Signs & Symptoms	Treatment	Complications	Preventions/Nursing implications
Conjunctivitis **Bacterial-** → Contagious. **Viral---** herpes, measles, syphilis, chlamydia, gonorrhea **Allergic-** chemical.	Retinopathy of prematurity. trauma post nasal infection Lymphadenopathy photophobia Toxoplasmosis Itching	Inflammed Purulent, mucoid. Watery mucoid Watery stringy	Antibiotic drop, ointment ↓S/S. Antiherpetic (herpes). Antihistamine Mast cell stabilizer drop.	delayed growth development.	

Ch. illness, sickle cell disease
R. Arthritis, Retinoblastoma
Albinism, Tay-Sachs disease

Redness, Eye pain
Edema, Itching
Tearing
Discharge

	Risk factor	S/S.	Treatment	Complication	Prevent/Nurs implication
Otitis Media bacteria Infection viral Allergy. enlarge adenoids -down syndrome	↓w/ breastfed ↑IgA. -Eustachian tube shorter & horizontal -↑2 month ↓ -age 5-6. ↓ after 7. -bacteria infection -water & spicy -2nd hand smoking -Cleft lip.	URI (hx) Ear pain ↑ (rubbing, pulling) Cry. lethargy. Bulging yellow. red T.M. purulent drainage. Lymphadenopathy fever 40°F (104)	NSAID, ↓fever Antibiotic. Amoxicillin. Ceftriaxone Benzocaine Lidocaine	Hearing loss. Speech delay Myringotomy Laser replacement →	↑comfort. Avoid Avoid water in ear.
Otitis Media with effusion collection of fluid Not infection.	↓ URI (hx) Acute behavior change crying irritability. fussiness. inconsolability Tugging ear.	Fullness of ear. Orange. discolor TM ↓movement Vague (Malaise) cough. Diarrhea. Transient hearing loss & balance disturbance.	Ear drop..	of tympanoplasty ↓. PE tube.	↓ activity for few days → Notify when tube fell off
Infantile glaucoma	premature. Develop delay Genetic d/o. Hx family. African A. eye injury DM. HIV. Ch steroid use	eye closed or rubbing eye. corneal enlarge → cloudy. Enlarge of eye. photophobia Tearing conjunctivitis Eyelid squeezing Spasm.	Surgery Goniotomy Laser Surgery	Visual Impairment blindness Risk for injury develop delay	pre] operative care post elbow restriction

5. What are the developmental/psychosocial implications of:

a. An alteration in vision?

20/60 - 20/200 } V.I impairment
20/200 ↓ w/ 20° ↓ } P. Vision - blindness

↓ safe space.
↑ Blurry vision.

b. An alteration in hearing?

0 - 20dB - Normal
↑ 80dB. profound loss.

Delay in speech, Language, learning problems → Unsteady gait balance.
development

c. What are the implications for this in terms of nursing interventions?

Emotional support.
Early intervention.
↓ psychosocial impact of sensory deficit

hand hygine

Alteration in Gas Exchange/Respiratory Disorders

Utilize Ch. 40 And ATI Ch. 16, 17, 18,19 pp.274-275 and ATI Real Nurse 2.0 Cystic Fibrosis

1. What are the anatomical and physiological differences in children which make them more prone to respiratory disorders?

   Infant: Obligate nose breather
   large tongue → airway obstruction
   tonsil. adenoid tube

   a. By the age of the child

   Can't open mouth breath

   Newborn → obligatory nose breather until 4 mo (No mouth breath) ↓ less mucus production
   ↑ risk for infection Obstruction → small passage
   ↓ develop sinus → ↓ sinus infection.

   ↑ metabolic rate than adu
   → ↑ O2 transport

   b. In comparison to adults

   Smaller Airway lumen when edema, mucus, bronchospasm, ↓ diameter
   ↑ resistance to airflow → ↑ work of breathing.
   Funnel shape & location of larynx (Congenital Laryngomalacia) → ↑ Aspiration (lower airway)
   ↑ Compliant → dynamic collapse when airway obstructed.
   Trachea @ 3rd thoracic vertebra → 1/6 of adult

2. List the techniques for assessing normal respiratory status and the progression of a respiratory illness or disorder.

   Color = Pallor Cyanosis. acrocyanosis
   (RR) Rate & depth = tachypnea
   Nose. oral cavity.
   Cough. Airway noise = atelectasis, Stridor.
   Resp. effort = accessory muscle use.

   Anxiety restlessness
   Clubbing.
   Hydration status.
   Environment. – smoke. chemical.
   Breath sound.

3. Define/describe:

   a. Adventitious breath sounds

   Anterior. Posterior chest. axillary area. equal bilaterally.
   prolonged expiration → bronchial obstruction

   b. Wheezes

   ↑ pitched. sound in expiration
   occur w/ obstruction in lower trachea & bronchioles.

   c. Crackles(rales)

   Crackling sound heard when alveoli become fluid filled
   occur w/ pneumonia

   d. Stridor

   harsh. grating sound. → obstruction of windpipe or larynx

4.

Disorder	Causes	Expected Assessment Findings/ labs/X-rays	Treatments	Complications	Nursing Implications/ interventions
Bronchiolitis from RSV detects antigen Test Nasopharyngeal Secretions	URI. RSV. ↑	Rhinorrhea. fever intermittent sneezing. cough wheezing. Tachypnea 70↑	↑ 100% O_2 Keep. ↑ flow NC. I&O . NP suction.	NPO if RR↑ IV fluid. risk Aspiration	S/S relief. ↑ fluid X steroid. bronchodil ↑ Airway.
Epiglottitis	↑ fever	Airway inflam → obstr Increasing pulse Restless hoarseness Retraction Anxiety Inspiratory stridor Drooling.	↑ 100% O_2. Tracheostomy Code status	RF.	~~Patent Airway~~ X visualize throat leave kids alone supine. ↑ 100% O_2
Asthma Mild----- day Sx ≥ 2↑/wk. night Sx 3-4↑/month Severe----		Dry hacking cough wheezing. Anxiety.	Albuterol. PRN. steroid complem	exacerbation. Resp failure	Avoid triggers. Use. Inhaler.
Atopic dermatitis eczema	Allergic food environment chemical	Itching Inflamed. redden. swelling Patched skin	↑ hydration cream.	Infection.	prevent infection Maint integrity 100% cotton linen
Acute rheumatic fever (+) Jones Criteria ↓ 2 major. 1 minor ∴ ✱. Serum Anti-Streptolysin O-titer.	2-6 wk Untreated strep	Recent URI. fever ↑HR Cardiomegaly. CP. Irritability. LOC ↓. pale macular rash	PCN. Rest. Throat culture ↑ ESR CRP	HF. RF.	Complete Antibiotic chorea → disappear.
Cystic fibrosis	genetic	Barrel chest (O_2). clubbing. wheezing Rhonchi dyspnea. cough dry nonproductive Cyanosis. Hyperinflation emphysema bronchial wall thickening. ↑ ~~sweat~~. tear & sweat. Na & Cl levels ↓ growth.	supportive. CPT. vest/had Blowing pinwheel plastic horn.	↑ # of URI. Pneumothorax Bronchial cyst. Emphysema	↑ O_2. position lung expansion

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5. Medications p1472

Medications	Category	Affects	Side Effects	Nursing implications
Albuterol	β_2-Agonist. Short acting Bronchodilator	Relax airway muscle. ↑ airway. Acute relief for bronchospasm	Nervousness ↑ HR. Jitteriness	Inhalation...
Budesonide	Corticosteroid Inhalation	↓ Inflammation ↓ Immune system. Local. Long term use	↑ glycemia ↓ allergy reaction → ↓ growth delay	Consult when Vaccination. Safe for short therapy Rinse mouth after use. X for acute wheezing ↓ ↓ fungal infection dry mouth hoarseness
Guaifenesin	Expectorant	↑ RT tract fluid → ↓ viscosity of thick mucus secretion		↑ deep breath. before coughing ↑ fluid intake Assess breath sound frequent.
Pseudoephedrine	Decongestant	↑ runny stuffy nose. age 6↑	↑ Sleeplessness ↑ activity.	Assess periodically nasal congestion.
Prednisolone	Corticosteroid. PO. parenteral.	↓ Inflammatory Immune system.	↑ blood glucose ↓ Allergic reaction PUD:.	Consult when vaccine Safe short term use. Assess for growth growth delay

6.

Laboratory/diagnostic procedure	What does it test	Nursing implications
CBC	RBC ; H&H - blood content WBC - Infection. Anemia Infection.	guide explain . .
Pulse oximetry	O2 level in blood.	Probe applied correctly. finger-toe, hand, forehead ear.
Peak Expiratory Flow Asthma	Measure Maximum flow of air (L/s.) → can be forcefully exhaled in 1 second	Education - correct use . Self management . .
Chest Xray	Radiographic image . Visualized of Organ. - hyperinflation atelectasis pneumonia foreign body. pleural effusion. size organ	Parent be with child . Restrain may necessary if unable to sit still
Pulmonary function test	Measure respiratory flow & lung volume	done By RT . Spirometer obtained by trained nurse.

7. List some common techniques/treatments to support respiratory functioning.

↑O2.
Chest physiotherapy & Postural drainage. percussion - RT.
Chest tube.
Airway clearance.
↑ fluid. high Cal food.
Deep breathing.
Semi fowler - high f.

8. List Nursing interventions commonly used for respiratory disorders in children.

Airway open position.
- ↑ head of bed
↑ fluid (PO. IV). → thin mucus.
SUCT. lung. → clearance of secretion.
NPO → ↑RR. → ↓ aspiration.
↑ Coughing → expectorate of sputum. → airway clearance
Emergency equipment → code status.

Assess V.S.
Sleep & Rest.
Insert the Spirometer.

Alteration in Perfusion/Cardiovascular Disorders

Utilize Ch. 41 And ATI ch.20 & YouTube video on fetal circulation & prior study of pathophysiology

1. Compare fetal circulation of the heart and lungs versus newborn circulation. **This requires that you already know normal circulation of the heart from your anatomy/physiology and nursing courses. This is an expectation so if you don't know this, you need to go back and restudy it until you do.**

S.I. Venacava → RA → RV → Pulmonary Artery → Pulmonary vein
(deoxygenated blood) (Oxygenated blood)
RA → Tricuspid Valve
RV → Pulmonary valve
Pulmonary vein → LA → Mitral Valve → LV → Aorta.
Aorta. ← LV
Aortic valve

2. Diagram the normal blood flow and physiology of the cardiovascular system. What are the **pressure differences i.e. higher to lower from what chambers to what chambers and why? Again, this should be review for you and not new material. It impacts understanding of the common cardiac/perfusion disorders in children!!!!!!!!!!!!!.**

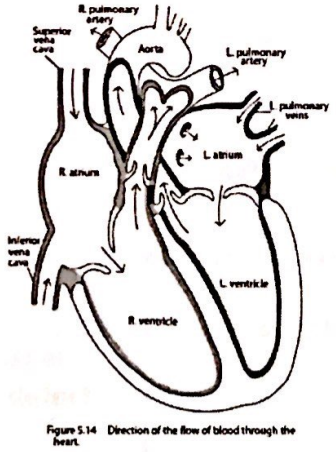

Figure 5.14 Direction of the flow of blood through the heart.

Ⓡ < Ⓛ A.V.
↑pressure.

3. What are the anatomical and physiological differences of the cardiovascular system in infants and children?

FHR → day 17 of conceive.
4 chambers → during wk 2-8.
O2 via placenta
Foramen ovale – opening between atria.

4. What is a congenital heart defect?

born w/ . → problem w/ function
- persistent cardiac d/o
- SOB.
- Growth delay
- Hypoxia-ch
- Failure to thrive
- HF.

5. What is an acquired heart disease?

w/ illness secondary to ?
ex) Rheumatic fever.
- Hypoxia
- HF.

6. Outline Congenital heart defects that **increase pulmonary blood flow.** → Most common

Anatomical defect → alters normal bloodflow between lung & ♡.
ASD / VSD / PDA. Ⓡ > Ⓛ
→ HF d/t ↑ blood flow to lung. → Ⓡ V. hypertrophy. ↑RR. ↑HR
Na & fluid retention. → ↑ risk pulmonary infection.
↑ pulmonary vasoconstriction & pulmonary HTN.

HF. hypoxemia pulm. vascular disease
Growth Retardation
Develop delay Failure to thrive.

Defect	Pathophysiology	Signs & Symptoms	Treatments	Complications	Nursing implications
Atrial septal defect (ASD)	Abnormal opening between (L)(R) atria. (L)→(R) shunt blood pump into lung. Diagnosed → school age adult ford	Asymptomatic. Murmur SUB freq URI Dysrhythmia Palpitation	Patch closure. dig ♡ cath ↓ Monitor	Pulmo HTN. HF. Arrhythmia Stroke	Spontaneous close by 3 yr. → Surgical repair.
Ventricular septal defect (VSD)	Abnormal opening between (L)(R) ventricle. (L)→(R) shunt blood pump lung	Loud harsh Murmur or (L) sternal border Cyanosis - crying HF	Closure dig ♡ cath Pulmonary artery banding ↓ complete repair w/ patch.	Aortic valve Regurgitation Infective endo Carditis HF.	Spontaneous Closure by 2yr. Surgical repair.
Atrioventricular canal defect (AVSD. Most common w/ Downsyndrome	Recirculation of blood. due to workload on (L) ventricle (L)→(R) shunt Pulmonary edema	fail of endocardial cushions to fuse.		pulmonary edema. ↑ load to (L) V.	
Patent Ductus Arteriosus (PDA)	(L)→(R) shunt. Oxygenated + Deoxygenated blood Mixed	- Machine like murmur. - Widened pulse press. - ↓ feeding. - HF.	NSAIDs. Indomethacin ♡ cath.	HF.	Pre: Allergy - shellfish Iodine Kidney function. Baseline V.S. Consent. Post. Bleeding risk 4-6h Straight position WBC. Temp. HR. Infec skin - Redness Radial pulse 24D.

Nursing Mangement: ↑O2. Nutrition. Assist to cope
Prevent Infection. Care for surgery
Education. Relieve Hypercyanotic spells

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Laboratory/diagnostic procedure	What does it test?	Nursing implications
Cardiac catheterization	definitive study for ♡ disease. Invasive	Inform Consent Infection. Allergy - NPO 6hr. VS. baseline. Apical pulse x1min. Per. pulse. VI.
Chest x-ray	Size. Location. Chamber & flow of ♡	X Jewelry or metal. No pin. Remove electrode @ bedside
Echocardiogram	Ultrasound. → ♡ wall thickness. size. chamber. valve. septa. ♡ Structure.	No pin. Instruct. ECG lead placement → sel. lie still thru procedure
Electrocardiogram ECG	♡ HR. rhythm. Conduction. musculature.	painless. Right placement. lie still - 5min. wipe jelly off.
Hemoglobin (Hgb) and hematocrit (Hct)	total level of H/H. → RBC cell number & volume	dehydration → false ↑ Capillary puncture - finger Value w/ age
Partial pressure of oxygen (pO2)	Amount of O2 in blood	Most accurate w/ ABG Monitor. cyanosis ↑O2.

X ginseng. hawthorn. ↑ toxicity
X Rapid IV adm. → vaso constriction

8. Medications P1530

Medications	Category	Affects	Side Effects
Digoxin (Lanoxin) HF. A-fib. Supraventricular tachycardia	- Cardiac glycoside - Antiarrhythmic agent	↑ contractility of ♡ muscle. by ↓ conduction ↑ force	Apical pulse x 1 min. Empty stomach. Serum digoxin level (0.8-2) toxicity = N/V/d. lethargy. ↓ HR.
Lasix (furosemide) edema w/ HF, HTN.	Loop Diuretic	↓ absorption of Na. Cl.	photosensitivity ↓ BP. renal function. Electrolyte Imba. - K. hearing ↓.

90 sec ↑ for Infant.

9. What is the most common cardiac defect that occurs in children with Down Syndrome? What are the implications for this on the child?

→ Atrioventricular Canal Defect. "~~ASD~~" "AVSD."

10. What signs and symptoms would you see in a child with a persistent cardiac disorder?

cyanosis. Edema (pulmonary) clubbing.
Fever. Retraction. prominence of precordial chest wall.
Visible. engorged or abnormal pulsation.
Abd. distension

11. Briefly explain the psychosocial impact of chronic cardiovascular disorders on children and their families.