Welcome to Pediatrics!

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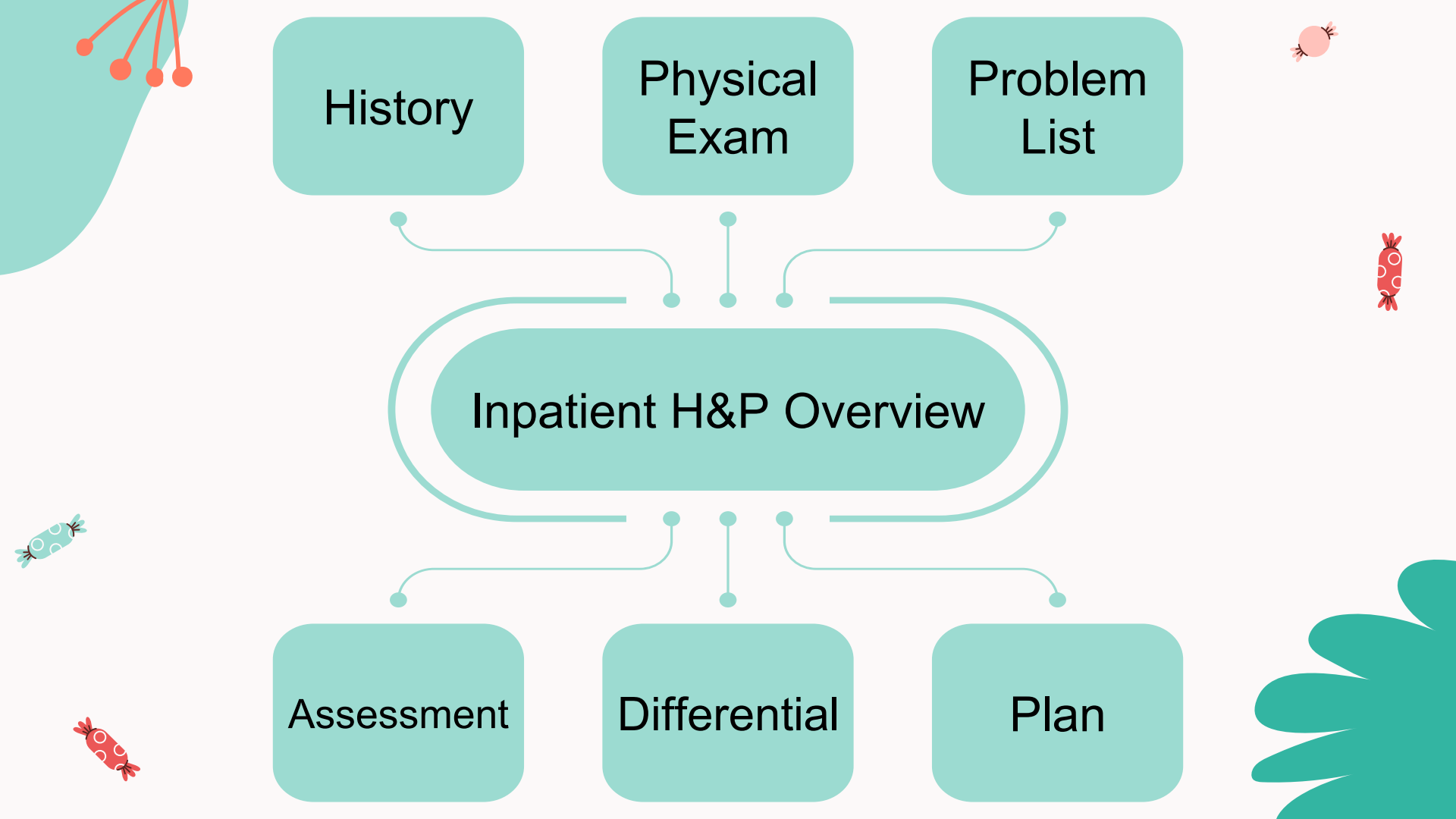
01

Inpatient H&P

The Basics

The Requirements

- 2 H&Ps from your inpatient rotation **must be turned in** to your attending or resident
- Give them ASAP to receive and incorporate feedback
  - Please take feedback constructively
  - Also helpful to tell the resident how you best receive feedback
- When completed, scan them and upload onto Sakai
- Tips:
  - Do NOT use any Epic template that allows you to simply click and fill in the bank
    - Biggest Giveaway: “No surgical history on file”
  - Fine to make your own templates or use them as a guide
  - Include all the elements listed on the Case Checker Form


History
Physical Exam
Problem List
Inpatient H&P Overview
Assessment
Differential
Plan

Chief Complaint

- Include age, pertinent identifiers (e.g. any past medical illnesses key to the current problems), primary concern (in the patient/parent's own words)
- Ex: AA is a 6 year old male without significant PMHx who presents with "tummy pain" for 3 days

Your Turn!

- JW is a 2 month old male, born full term whose mother presents to the ED and tells you that baby has been “fussier” than usual, having multiple episodes of vomiting. Baby is having issues keeping food down and mother is worried baby is starting to look fatigued. Baby has been vomiting for the past 2 days
- CR is a 14yo female who presents to the ED with parents after ingesting multiple pills. Parents are unsure what pills she has ingested as there were multiple empty bottles at the scene. They tell you CR has depression and anxiety. CR quietly reports that this was an attempt to die by suicide and she still has suicidal ideation.
- MH is an 8yo male who presents to the ED with lower abdominal pain for 1 day. Mother denies trauma but does report that he has started to feel nausea with 1 episode of vomiting with potential tactile fevers at home. MH describes the pain being worse in the RLQ.

History

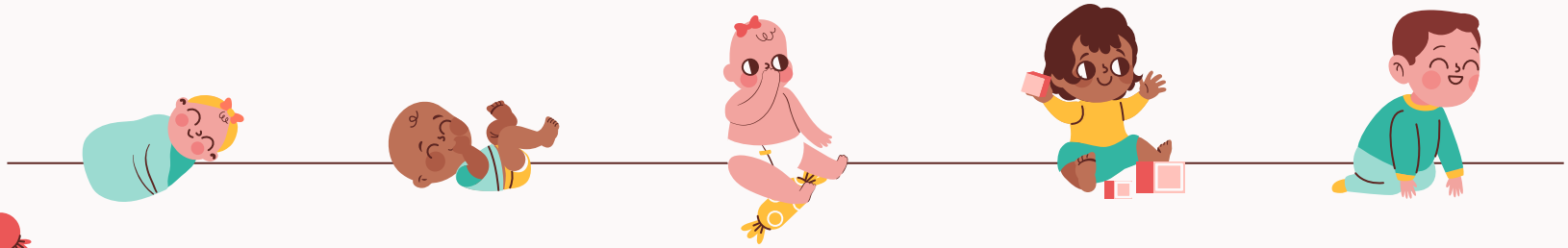
- HPI
  - Use sentences and paragraphs
  - Avoid nonstandard abbreviations
    - When in doubt, write it out!
  - Paraphrase the history as told to you so that it is coherent and succinct.
    - Use quotations when necessary
  - Include all pertinent positives and negatives.
    - This includes pertinent positives and negatives from other parts of the history too (family history, social history, etc.)
  - Include any interventions that have been performed at home, the ED, or outside hospital
    - Initial Presentation
    - Medications?
    - Labs?
    - Imaging?

Some Helpful Abbreviations

- BID: Bis in die (Twice a day)
- B/l: Bilateral
- C/b: Complicated by
- C/f: Concern for
- C/o- Complains of
- D/c: Discontinue
- DOB: Date of birth
- D/t: Due to
- Dx: Diagnosis
- I&O: Intake and output
- Iso: in the setting of
- NDKA: No known drug allergies
- NPO: nil per os (nothing by mouth)
- N/V/D: Nausea, vomiting, diarrhea
- PMHx: past medical history
- PRN: Pro re nata (as needed)
- ROM: range of motion
- Sx: Symptoms
- Tx: Treatment
- UTD: up to date

History by Age

Newborn	Infant	Toddler	PreK	School
First month	2-12 months	1-3 years	3-5 years	6-17 years
Feeds? Fussy? Sleepy? # of Diapers?	Eating? Activity? Vaccines? Sick Exposures?	Difficulty localizing pain.	Very simple terms. Yes or no questions.	Neurotypical children can tell you their symptoms.



Perspective of Illness

Patient's/Parent's perspective as to the cause of the illness, fears about illness and expectations.

Past Medical History

- Birth History
  - Term or preterm (age of gestation)
  - Method of delivery
    - NSVD, C-section (why)
  - Complications of pregnancy, delivery, newborn period
- Illnesses
- Hospitalizations
- Surgeries
- Allergies
- Medications
- Immunizations
- Developmental Milestones

Remainder of the History

Family History

Congenital Disorders?
Atopy (e.g. asthma, eczema, seasonal/food allergies)?
Seizures?
General Family History

Social History

Who are the primary caregivers?
Who all lives in the home?
What grade in school?
Environmental exposures? (Pets, Smoking)
Teens: HEADSS Exam

Physical Exam

- Vital signs
  - Remember that they vary for age in pediatric patients (look up tables by age)
- Growth parameters
  - For children under 2, include head circumference
  - For children 2 and above, include BMI
  - EPIC automatically plots growth charts, can print for use in your H&Ps.
- Complete head to toe physical exam
  - Systems most pertinent to chief complaint should be most thorough

Pediatric Vital Signs Reference Chart

Heart Rate (beats/min)

Age	Awake	Asleep
Neonate (<28 d)	100-205	90-160
Infant (1-12 mos)	100-190	
Toddler (1-2 y)	98-140	80-120
Preschool (3-5 y)	80-120	65-100
School-age (6-11 y)	75-118	58-90
Adolescent (12-15 y)	60-100	50-90

Respiratory Rate (breaths/min)

Age	Normal
Infant (<1 y)	30-53
Toddler (1-2 y)	22-37
Preschool (3-5 y)	20-28
School-age (6-11 y)	18-25
Adolescent (12-15 y)	12-20

Reference: PALS Guidelines, 2015

Blood Pressure (mmHg)

Age		Systolic	Diastolic	Systolic Hypotension
Birth (12 h)	<1 kg	39-59	16-36	<40-50
	3 kg	60-76	31-45	<50
Neonate (96 h)		67-84	35-53	<60
Infant (1-12 mos)		72-104	37-56	<70
Toddler (1-2 y)		86-106	42-63	<70 + (age in years × 2)
Preschool (3-5 y)		89-112	46-72	
School-age (6-9 y)		97-115	57-76	
Preadolescent (10-11 y)		102-120	61-80	<90
Adolescent (12-15 y)		110-131	64-83	

Reference: PALS Guidelines, 2015
For diagnosis of hypertension, refer to the 2017 AAP guidelines Table 4 & 5:
http://pediatrics.aappublications.org/content/early/2017/08/21/peds.2017-1904

Temperature (°C)

Method	Normal
Rectal	36.6-38.0
Tympanic	35.8-38.0
Oral	35.5-37.5
Axillary	36.5-37.5

Ranges do not vary with age.
Screening: axillary, temporal, tympanic (↓ accuracy)
Definitive: rectal & oral (↑ reflection of core temp.)
Reference: CPS Position Statement on Temperature Measurement in Pediatrics (2015)

Oxygen Saturation (SpO_2)

SpO_2 is lower in the immediate newborn period. Beyond this period, a SpO_2 of **<90-92%** may suggest a **respiratory condition** or **cyanotic heart disease**.

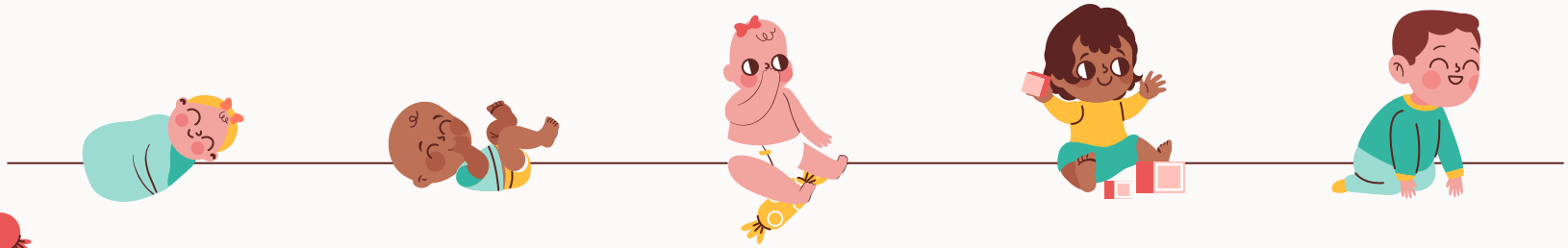
Physical Exam

- General
- Head
- Eyes
- Ears
- Nose
- Throat
- Neck
- Lungs

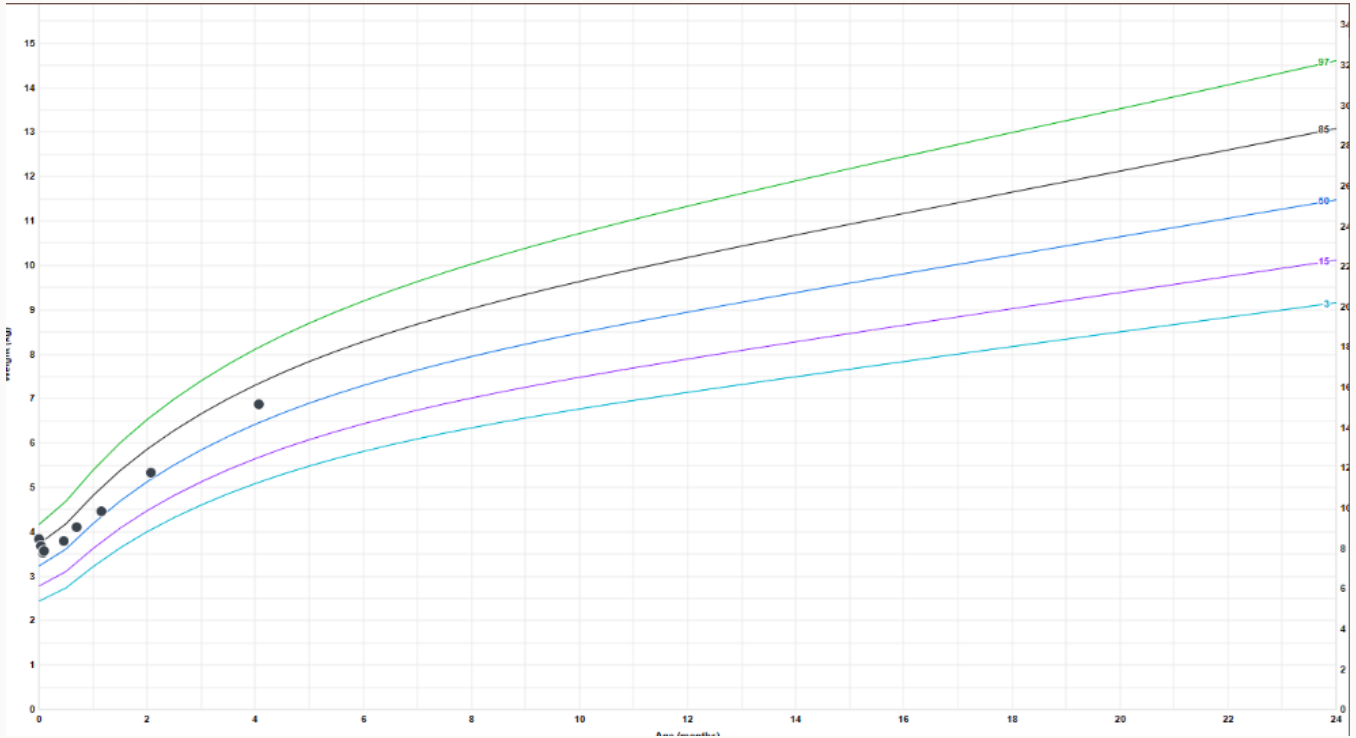
- Heart (including pulses and capillary refill)
- Abdomen
- GU(including Tanner staging)
- Extremities
- Neuro
- Lymph nodes
- Skin

Physical Exam by Age

Newborn	Infant	Toddler	PreK	School
First 2 months	3-12 months	1-3 years	3-5 years	6-17 years
Discussed in Part 2 of this Lecture!	Anterior fontanelle, tympanic membranes, skin, rectal temps	Rectal temps up to age of 2, most comfortable in parent's lap	Make it fun! Try to make a game out of it.	Neurotypical patients are similar to general adult physical exam



The Growth Chart



Developmental Observations!

The Assessment

Problem List: list of all the problems you can identify from the history, physical exam, labs and imaging

Assessment:

- 1-2 sentence summary of the complaints, physical findings and assessment of the clinical status of the child
- Sentence 1: [Patient's Name] is a [Age/Gender] with [no PMHx/PMHx] admitted for [diagnosis]...
    - In the setting of...
    - Complicated by...
- Discuss your differential diagnosis
- End with the patient's status
- Ex: LJ is a 4-year-old male with a PMHx of RAD, admitted for PNA iso RSV infection. CXR with evidence of RLL consolidation. Absence of wheezing currently, so less concerning for RAD exacerbation. The patient is stable on RA, receiving ampicillin.

The Plan

Example Plan

1. Wheezing

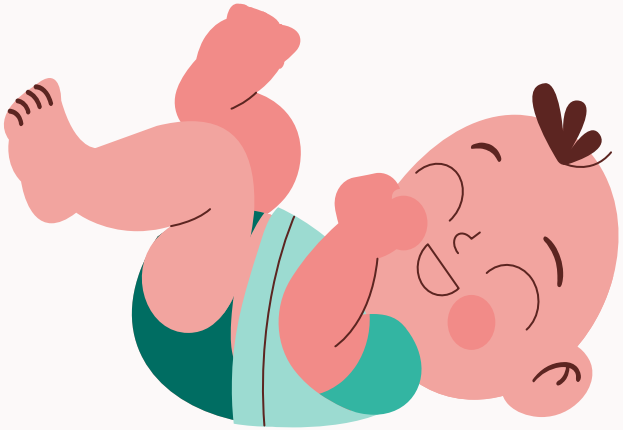
- DDx: Viral induced wheezing (first time episode, URI symptoms, sick contacts, no family history asthma/allergies/eczema) vs foreign body aspiration (age and developmental stage make this possible due to expected oral exploration and teething, but wheezing is not asymmetric) vs reactive airway disease (responded to albuterol, but given first time wheezing and no family history less likely)
    - Diagnostic plan
        - Chest x ray to rule out foreign body aspiration
        - Spirometry to determine peak flow and assess for obstructive disease
    - Therapeutic plan
        - Continue albuterol every 4 hours as needed for bronchodilation
        - Will not start antibiotics for now as patient afebrile and viral process favored

Example Plan

RAD
URI 2/2 Adenovirus and HREV
Wheezing and iWOB on presentation
Improved with magnesium in PICU and albuterol
S/p methylpred
CXR with hyperinflation and no focal consolidation
- Continue Orapred 1 mg/kg daily D3/5 (EOT 6/12)
- Wean albuterol 2.5 mg Q2H as able
- Sent home albuterol nebulizer to pharmacy; DME order for home nebulizer placed by PICU
- needs AAP and f/u at LOC

The Newborn Exam

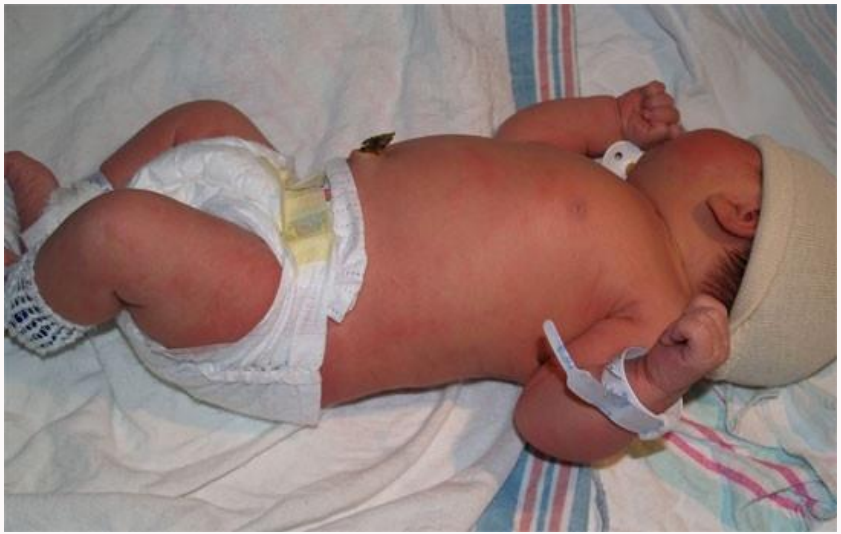
02



RULE 1 OF NEWBORN EXAMS:

DO NOT DROP THE BABY!!!!!

The First Step



Before even touching the infant, notice the following:

color, posture/tone, activity, size, maturity, and quality of cry.

Newborn Exam

Listen to breath sounds and the heart when the baby is calm

- This can be in parent's lap, in the bassinet, ask the parents how to make baby most calm

Newborn Exam

Head

bruising, edema, molding/shape, sutures, and fontanelles.

Eyes

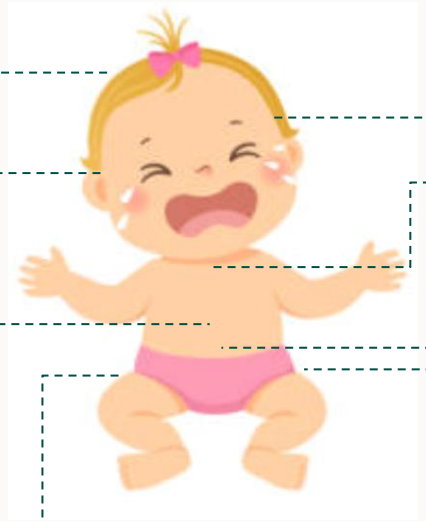
Red reflex, sclera

Abdomen

bowel sounds, belly feel, and umbilical cord

Back

symmetry, skin lesions, sacral dimple, masses



Neuro

Suck, grasp, Moro

Face

ear set/shape, preauricular pits/tags, soft & hard palate, gums, lips and tongue.

Neck & Pulse

range of motion, clavicle crepitus, **brachial pulses**

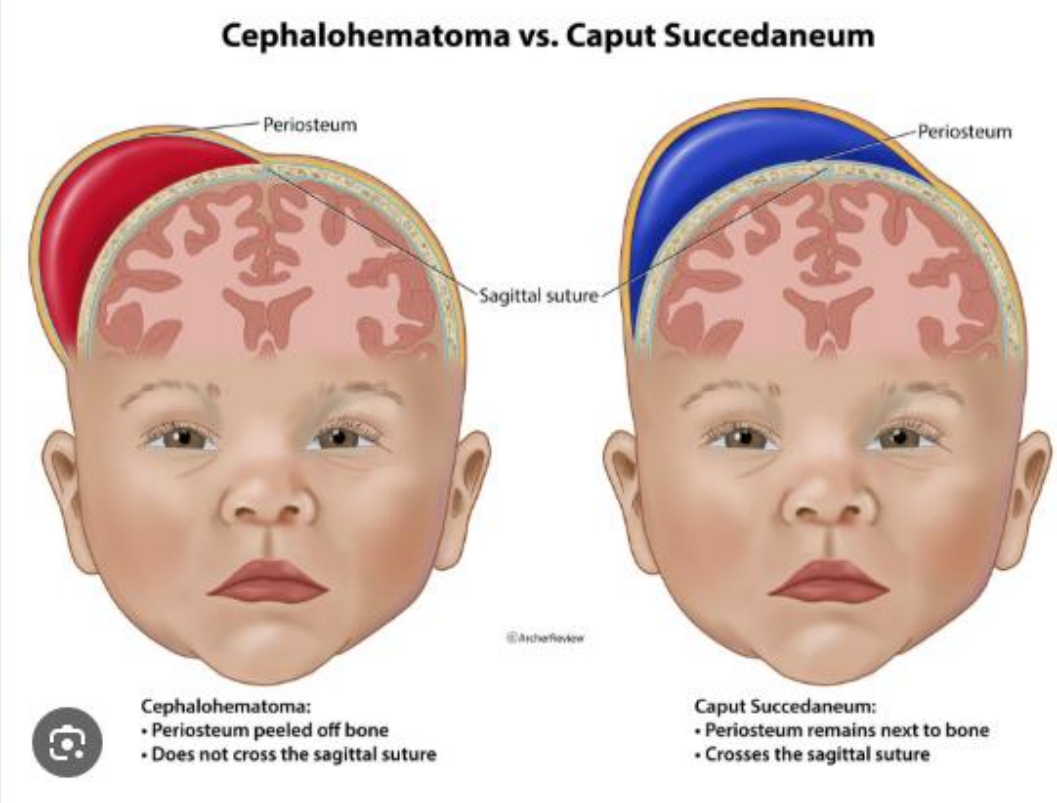
Genitals

Vaginal hypertrophy, testes, penis, anus

Hips & Pulse

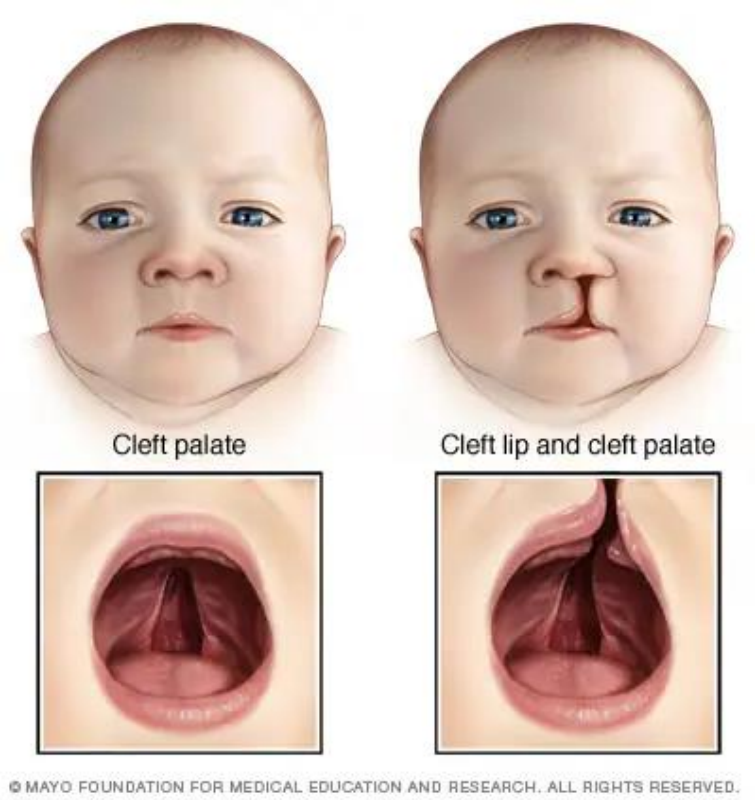
Barlow & Ortolani, **femoral pulse**

The Head

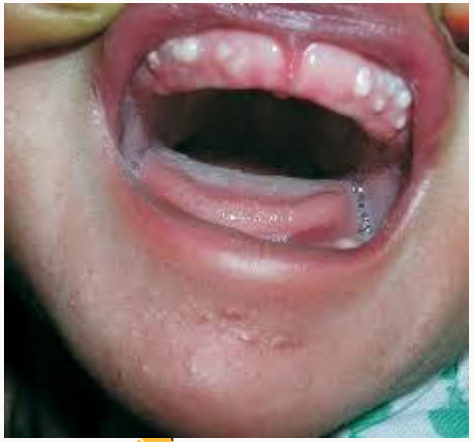


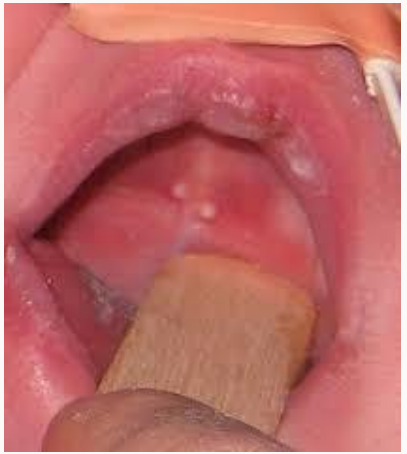
- Fontanelles
  - Posterior
    - Closes at birth-2 months
  - Anterior
    - Closes 7-18 months
- **Caput crosses** suture line (caput is cute, crosses all over)
- **Cephalo stops** (contained, not crossing lanes)
- Feel for head shape
  - Moulding
  - Overriding sutures

The Face

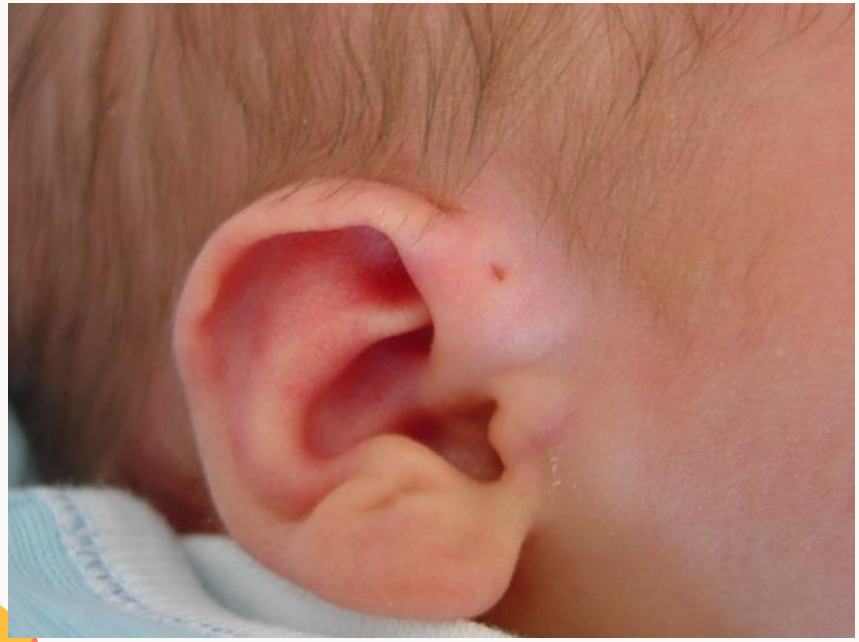


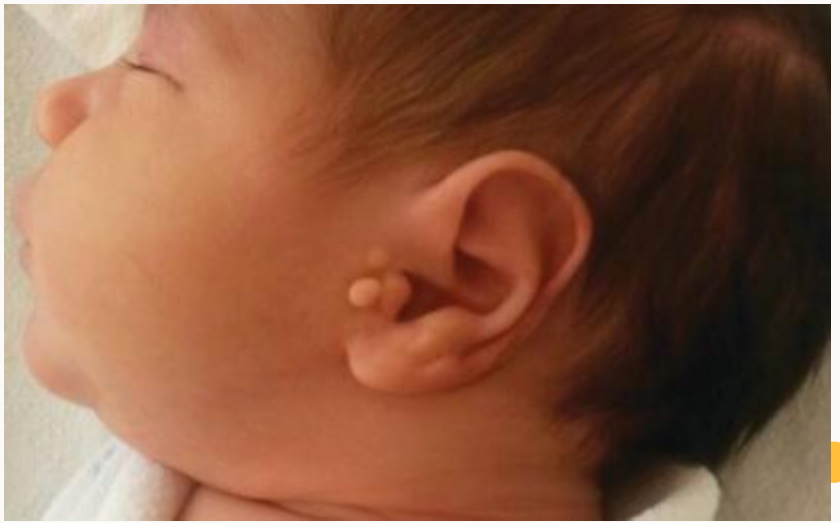
- Eyes should be in line with the tops of the ears
- Make sure to look at the nose and in the mouth!



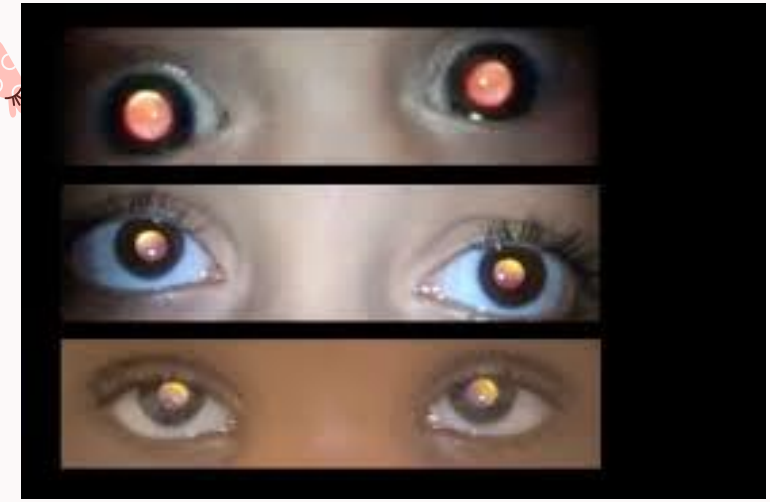


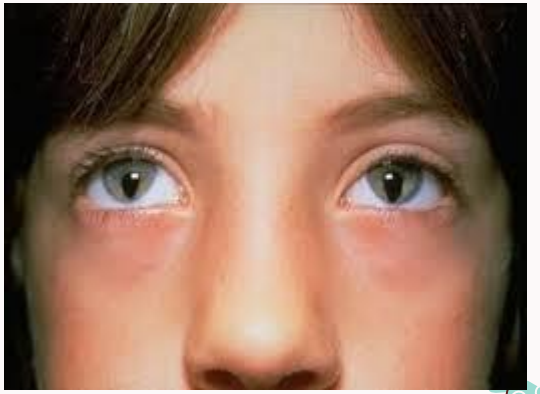
Ear Pits & Tags



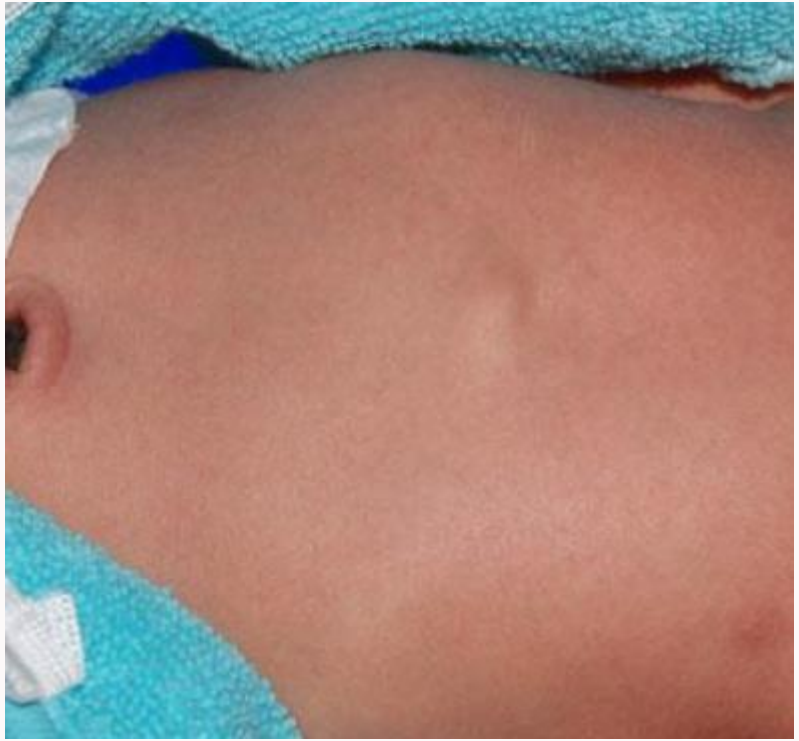


The Eyes





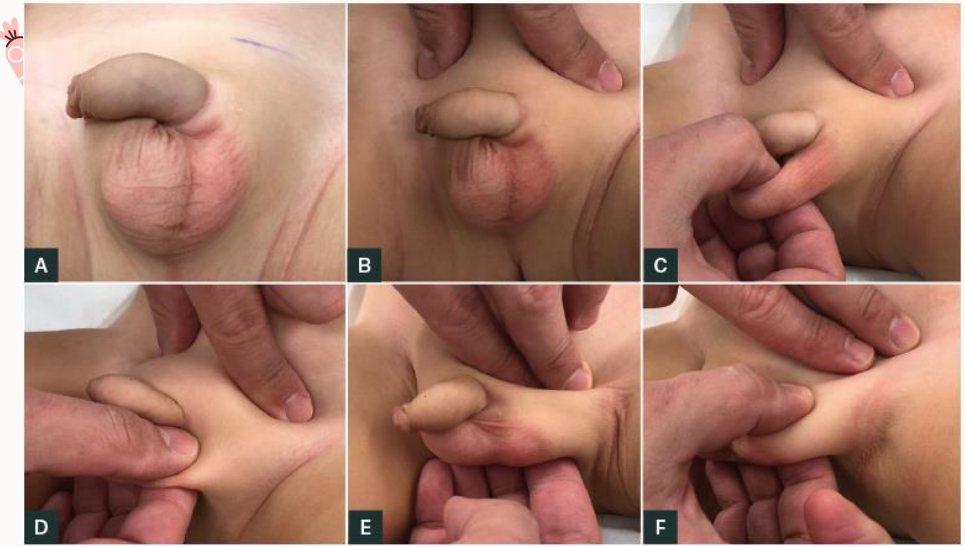
The Abdomen



What Do I Do About an Umbilical Cord Stump???

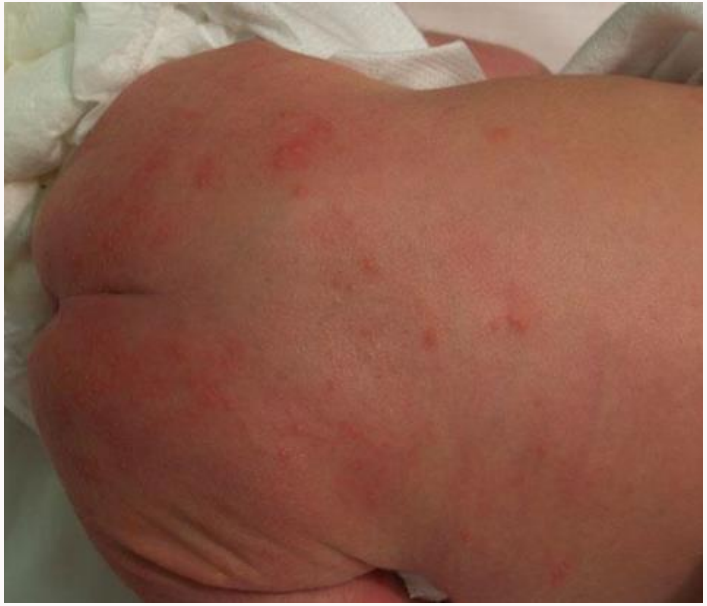
- Stump will usually fall off anywhere from 7-21 days
  - If prolonged, always have leukocyte adhesion deficiency in the back of your mind
- Might be smelly and have discharge when cord falls off
  - Keep an eye on erythema and fevers
  - May need silver nitrate cautery
- Place diaper below cord (may have to fold)
- Wait 2 days before submerging baby in tub
- **DO NOT** put coins/belts over umbilical hernias
- **DO NOT** clean stump with alcohol swab
  - Can irritate the skin and delay healing

Genitals



- For boys
  - ALWAYS MAKE SURE TO FEEL FOR DESCENDED TESTES
  - May have to “milk” the testicle from the inguinal canal
  - Can have retractile testes
  - No descent by 6 months? Go to Urology!!
  - Also examine shaft of penis
- For girls
  - Make sure to examine labia
  - May have discharge/bloody discharge

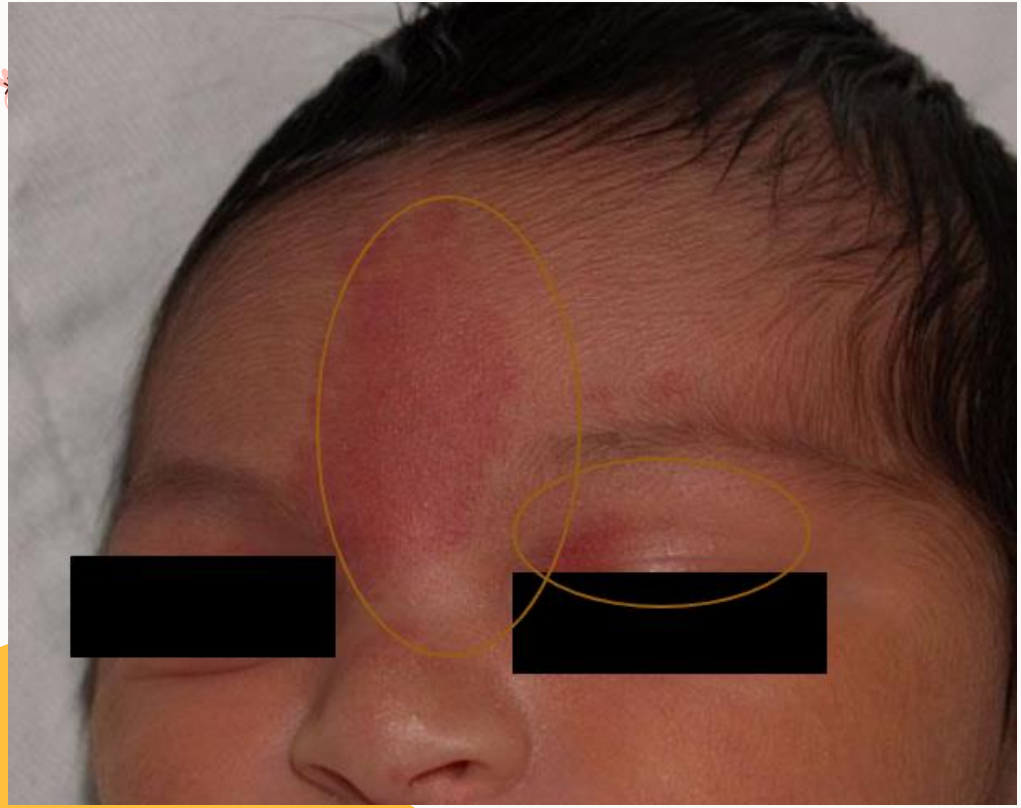
Name That Baby Rash!



Erythema Toxicum Neonatorum

- Erythematous macules and patches with central pustules/papules

Name That Baby Rash



Nevus Simplex

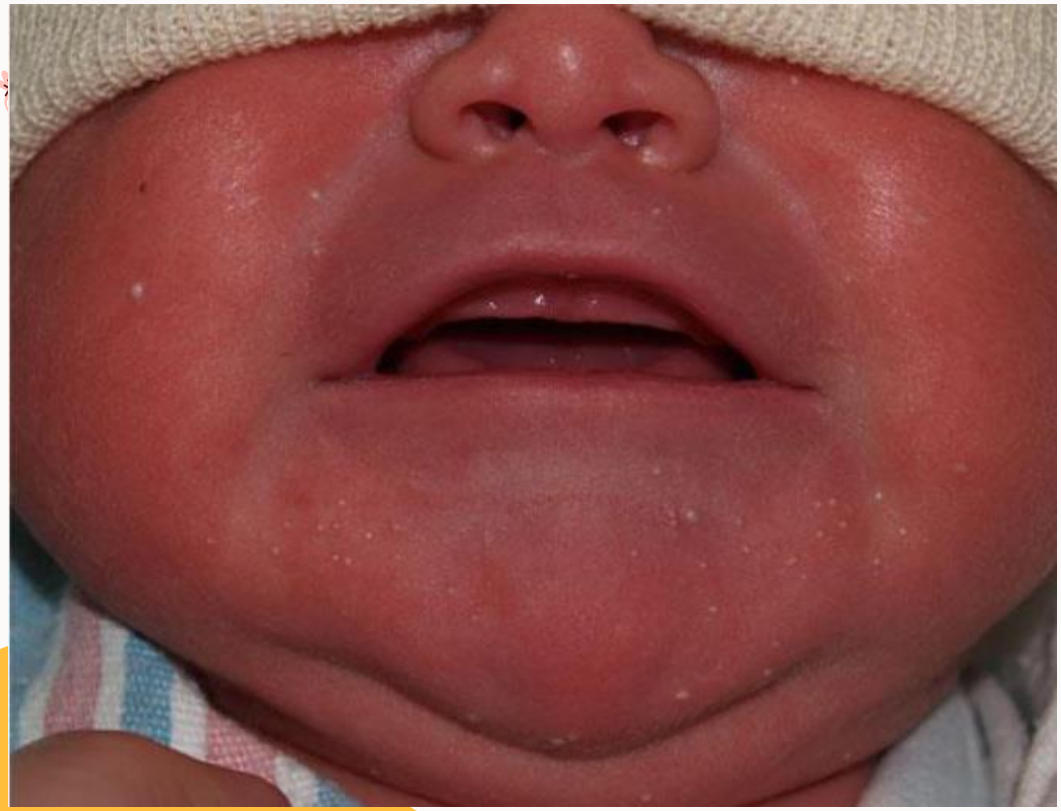
- Angel kiss vs stork bite
- Capillary malformation with pink to red coloration
- Angel kisses will fade with time, but stork bites can persist into adulthood

Name That Baby Rash

Congenital Dermal Melanocytosis

- **<u>NO LONGER CALLED MONGOLIAN SPOTS</u>**
- Often confused for bruises. Please don't call DCFS
- Make sure to document these
- Tend to be more common in certain ethnic groups such as Asian, Native American, Hispanic and African American infants
- Will usually resolve by age 2

Name That Baby Rash



Milia

- Pearly white papules, caused by retention of keratin
- Usually resolve in first few months of life

Name That Baby Rash

Sebaceous Hyperplasia

- More yellow than milia
- Result of maternal androgen exposure in utero
- Benign! Will go away

The Hip Exam

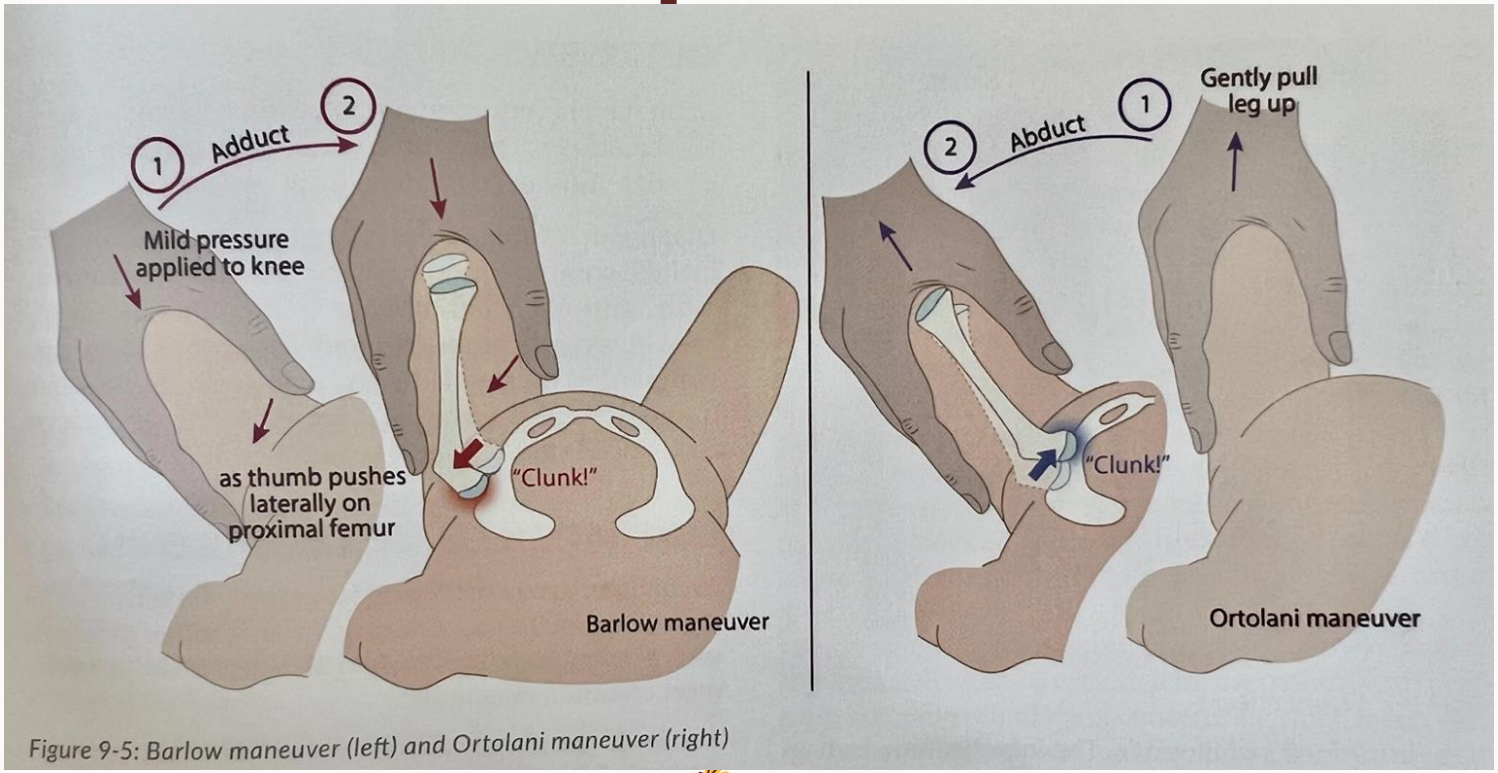
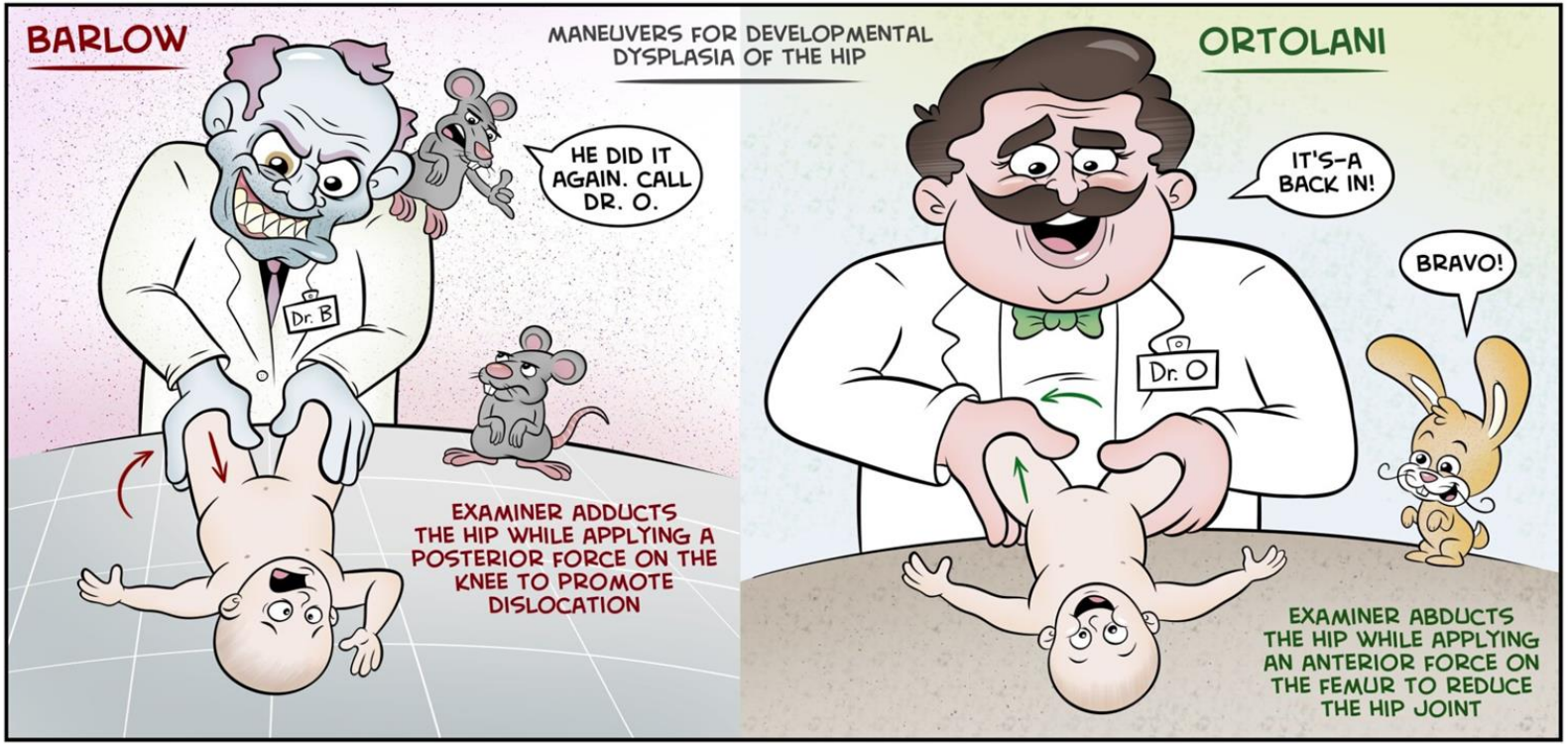


Figure 9-5: Barlow maneuver (left) and Ortolani maneuver (right)


BARLOW
MANEUVERS FOR DEVELOPMENTAL DYSPLASIA OF THE HIP
ORTOLANI
HE DID IT AGAIN. CALL DR. O.
Dr. B
EXAMINER ADDUCTS THE HIP WHILE APPLYING A POSTERIOR FORCE ON THE KNEE TO PROMOTE DISLOCATION
IT'S-A BACK IN!
BRAVO!
Dr. O
EXAMINER ABDUCTS THE HIP WHILE APPLYING AN ANTERIOR FORCE ON THE FEMUR TO REDUCE THE HIP JOINT
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The Hip Exam