University of Basrah
Al-Zahraa Medical College

Ministry of Higher Education
and Scientific Research

Block: Child Health

Lecture: physical examination

Lecturer: Dr. Miami K. Yousif

Block staff:

Dr. Jawad Ramadan (supervisor)
Dr. Miami Kadhim (leader)
Dr. Rehab Abdulwehab (co-leader)
Dr. Ahmad Jaafar (co-leader)
Dr. Ahmad Mohammad (coordinator)
Dr. Dhaighum Imad
Dr. Khalid Ahmad
Dr. Basim Abdulkareem
Dr. Haithem Hussain
Dr, Sadiq Hasan
Dr. Thura Kadhim
Dr. Ahmed Ibrahim
Dr. Dheyaa Jameel

Nelson Textbook of Pediatrics, 20th edition.
Nelson Essentials of Pediatrics, 7th Edition 2015
Pediatric Decision-Making Strategies
Illustrated Textbook of Pediatrics
Short Atlas in Pediatrics

Learning objectives:

1. To understand how the general approach to the physical examination of the child will be **different** compared to that of an adult patient and will vary according to the age of the patient.
2. To observe and demonstrate physical findings unique to the pediatric population, and to understand how these findings may change depending upon the age of the child.

Competencies

1. To obtain accurate **vital signs** (Temperature, HR, RR, BP) in a pediatric patient in different age groups and to be able to evaluate these vital signs compared to age-adjusted normals.
2. To understand the normal variation in temperature depending on the route of measurement.
3. To complete a thorough physical examination on a pediatric patients in different age groups.

Differences in Performing A Pediatric Physical Examination Compared to an Adult:

I. General Approach

A. collect as much data as possible by observation first

B. Position of child: parent's lap vs. exam table

C. Stay at the child's level as much as possible. Do not tower!!

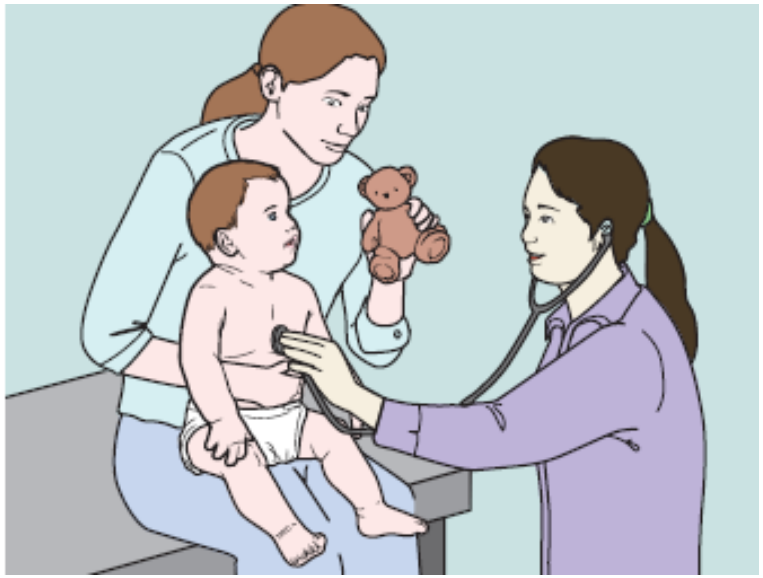
D. Order of exam: least distressing to most distressing

E. Rapport with child

1. Include child - explain to the child's level

2. Distraction is a valuable tool

F. Be honest. If something is going to hurt, tell them that in a calm fashion. Don't lie !



II. Vital signs

- Normally differ from adults, and vary according to age

A. Temperature

Tympanic vs. oral vs. axillary vs. rectal

B. Heart rate

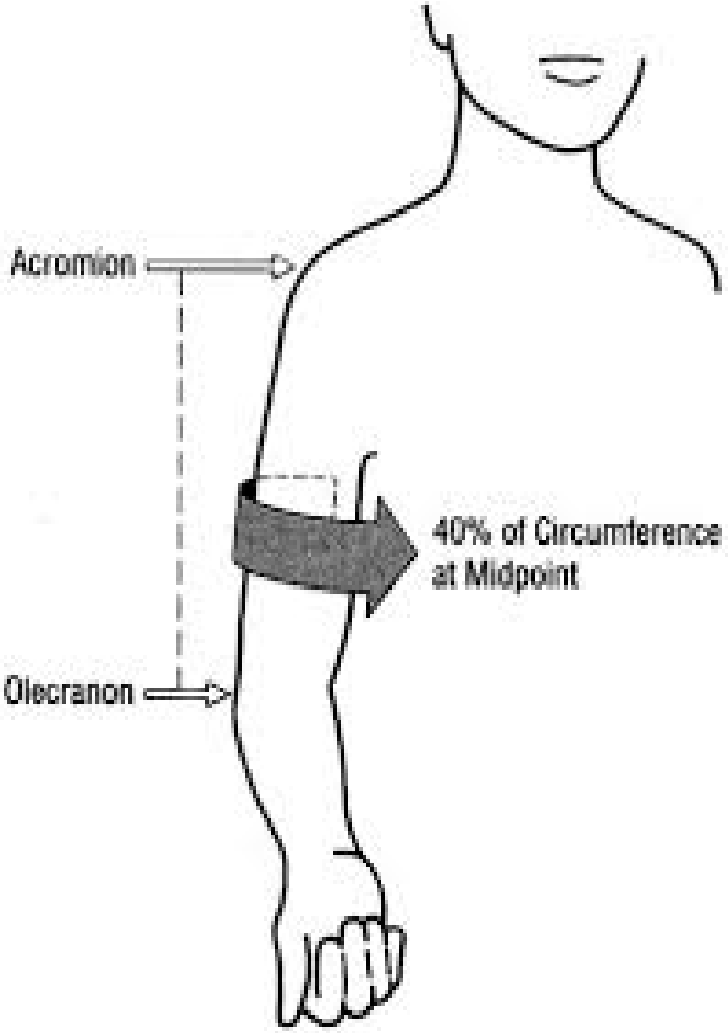
1. Auscultate or palpate apical pulse or palpate femoral pulse in infant
2. Palpate antecubital or radial pulse in older child

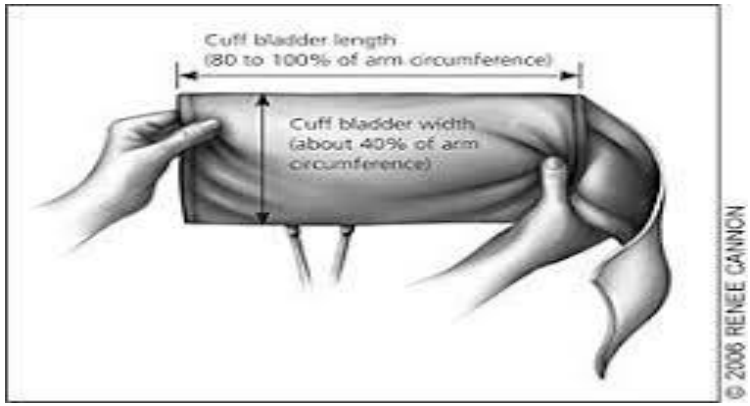
C. Respiratory rate

Observe for a minute. Infants normally have periodic breathing so that observing for only 15 seconds will result in a wrong result.

D. Blood pressure

- The child must be relaxed in sitting position if can sit
- Choose a suitable cuff
- The level of the arm (cubital fossa) must be at the level of the heart
- Measure the height of the patient .
- Plot the reading on special chart for blood pressure


Acromion
40% of Circumference
at Midpoint
Olecranon


Cuff bladder length
(80 to 100% of arm circumference)
Cuff bladder width
(about 40% of arm
circumference)
© 2006 RENEE CANNON

Vital Signs in Children

Normal Heart Rates (per Minute) by Age*

Age	Awake Rate	Mean	Sleeping Rate
Newborn to 3 months	85 to 205	140	80 to 160
3 months to 2 years	100 to 190	130	75 to 160
2 years to 10 years	60 to 140	80	60 to 90
>10 years	60 to 100	75	50 to 90

Normal Respiratory Rates by Age†

Age	Breaths per Minute
Infant (<1 year)	30 to 60
Toddler (1 to 3 years)	24 to 40
Preschooler (4 to 5 years)	22 to 34
School-age child (6 to 12 years)	18 to 30
Adolescent (13 to 18 years)	12 to 16

Normal Blood Pressures by Age‡

Age	Systolic Blood Pressure (mm Hg)		Diastolic Blood Pressure (mm Hg)	
	Female	Male	Female	Male
Neonate (1 day)	60 to 76	60 to 74	31 to 45	30 to 44
Neonate (4 days)	67 to 83	68 to 84	37 to 53	35 to 53
Infant (1 month)	73 to 91	74 to 94	36 to 56	37 to 55
Infant (3 months)	78 to 100	81 to 103	44 to 64	45 to 65
Infant (6 months)	82 to 102	87 to 105	46 to 66	48 to 68
Infant (1 year)	86 to 104	85 to 103	40 to 58	37 to 56
Child (2 years)	88 to 105	88 to 106	45 to 63	42 to 61
Child (7 years)	96 to 113	97 to 115	57 to 75	57 to 76
Adolescent (15 years)	110 to 127	113 to 131	65 to 83	64 to 83

III. Growth parameters –

plot on appropriate **growth curve**

1. Weight **Kg**

   (beam balance/ stand on scale)

2. length/Height **cm**

   (infantometer / stadiometer

3. OFC **cm**

(Occipito- Frontal Circumference)

Beam balance

stand on scale

Infantometer

Consent given by Yeovil District Hospital

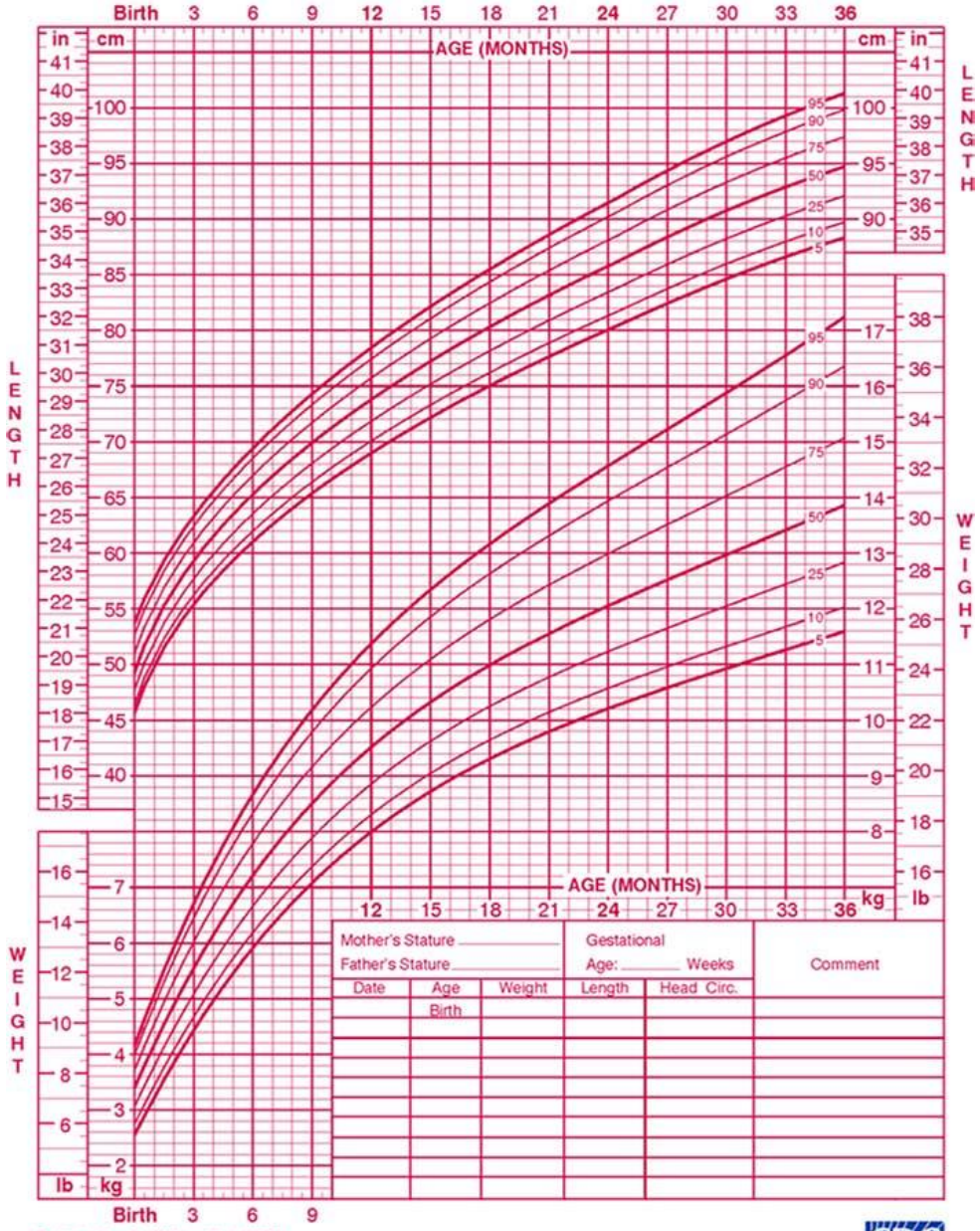
Stadiometer


FIBER-GLASS

Birth to 36 months: Girls
Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



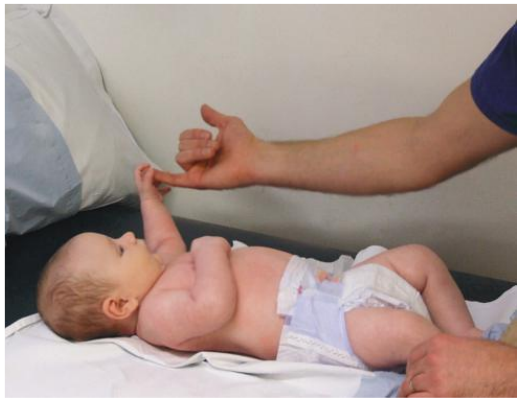
Published May 30, 2000 (modified 4/20/01).

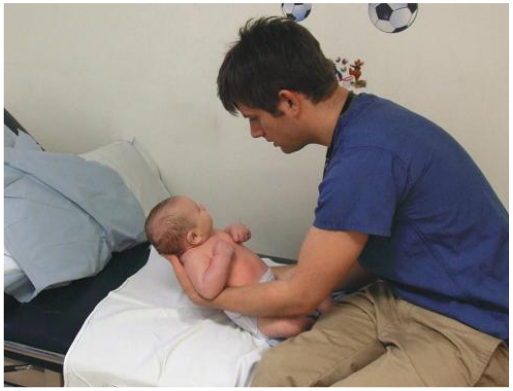
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

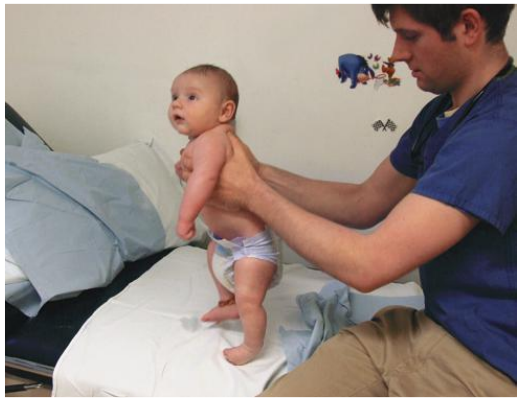
CDC
SAFER·HEALTHIER·PEOPLE™

IV. Unique findings in pediatric patients

eg/ primitive reflex







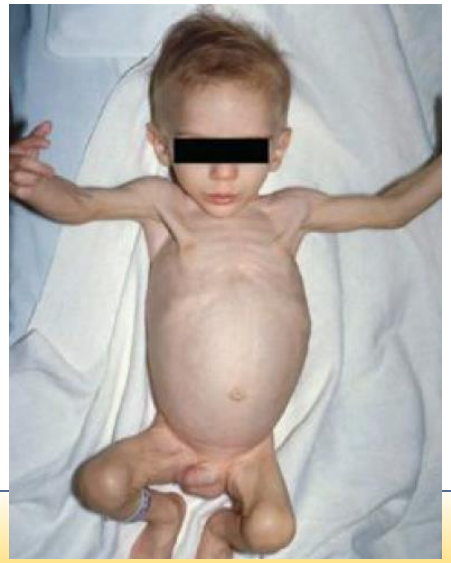
Outline of a Pediatric Physical Examination

I. Vital signs

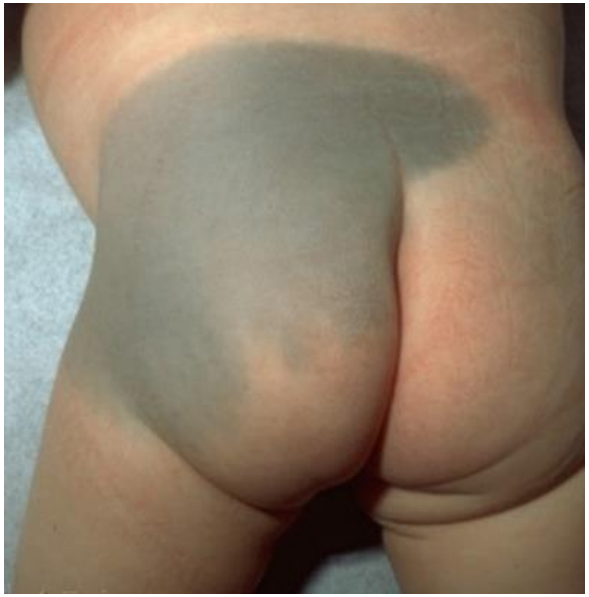
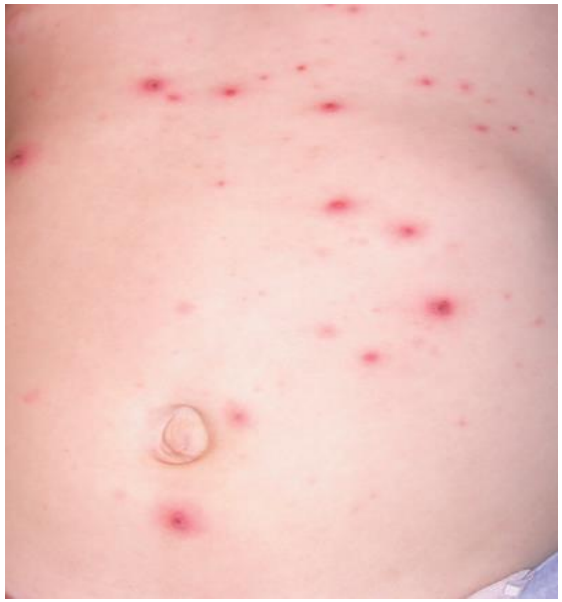
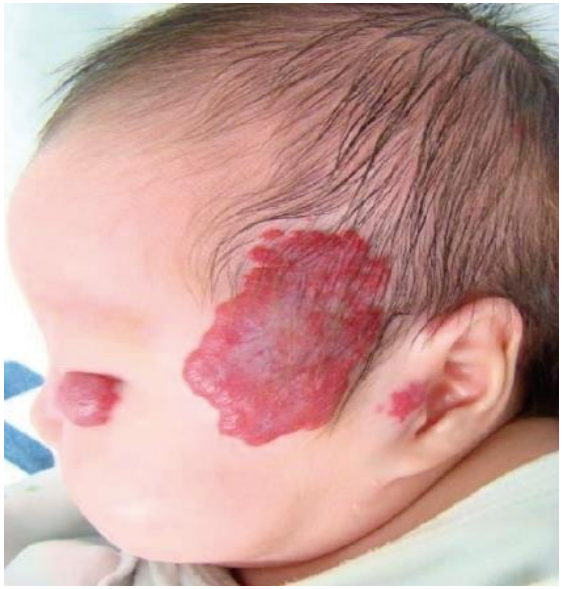
II. Obtain accurate weight, height and OFC

III. General examination

- CNS (consciousness, mental state)
- Face (toxic look, dysmorphic, cyanosis)
- Lymph nodes (location, mobility, consistency)
- Nutritional status (wasting, obesity)

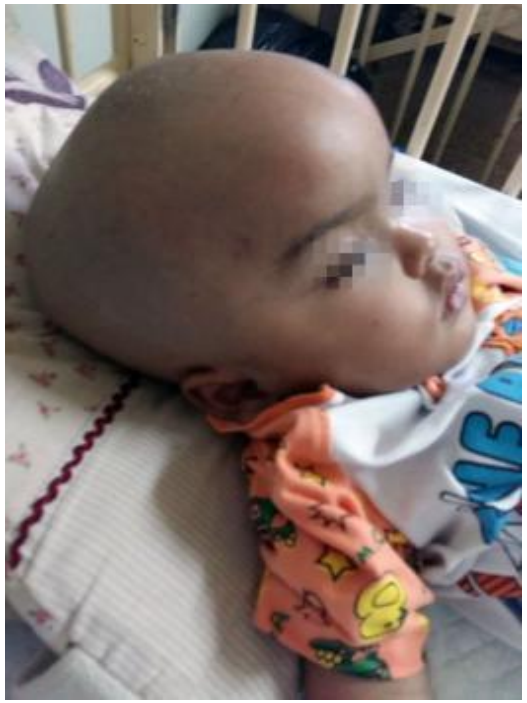


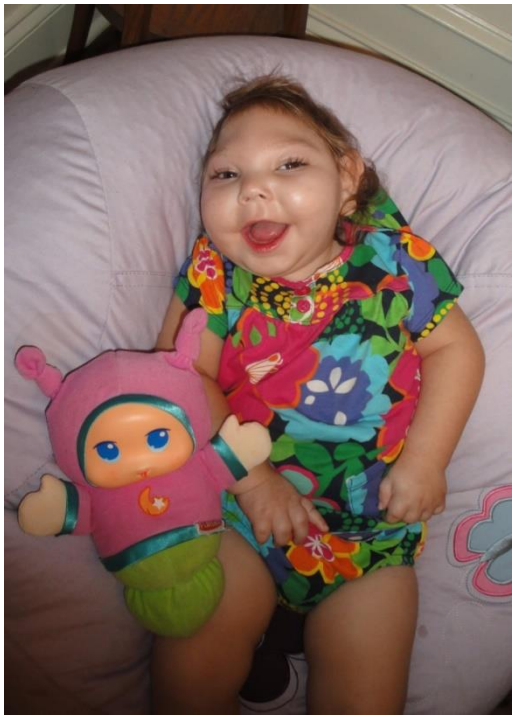
- Skin (birth mark, rashes, petechiae, desquamation, pigmentation and jaundice).
- Lymph node enlargement, location, mobility, consistency

IV. Head

- Observe size and shape.
- Feel the sutures and fontanelles (in the sitting position), for size and whether depressed, bulging or at level.
- Assess scalp and hair





Eyes

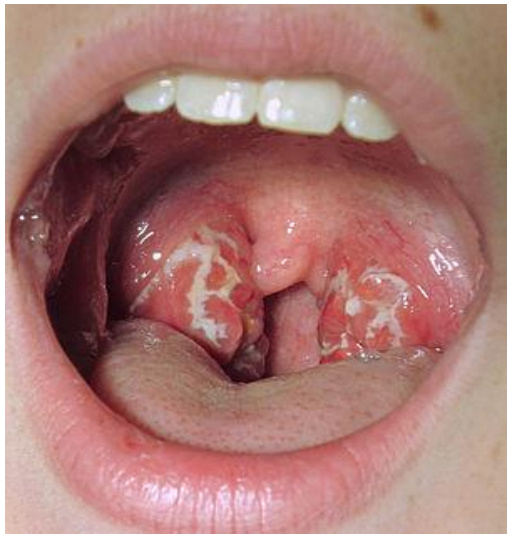
- Look at the pupils, conjunctiva, sclera, cornea and assess visual fields. Ear/Nose

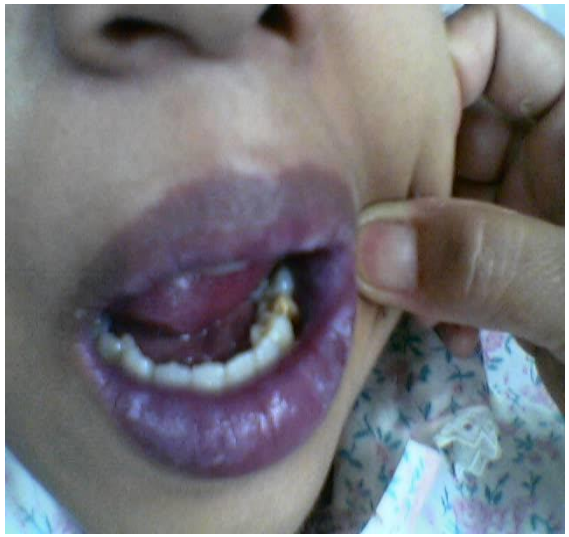
Ear/Nose

- examine the auricle
- Look at the tympanic membrane
- Observe nasal mucosa and septum

Mouth and Throat

- Lips (colors, fissures)
- Buccal mucosa (color, vesicles, moist or dry)
- Tongue (color, papillae, position, tremors)
- Teeth and gums (number, condition)
- Palate (intact, arch)
- Tonsils (size, color, exudates)



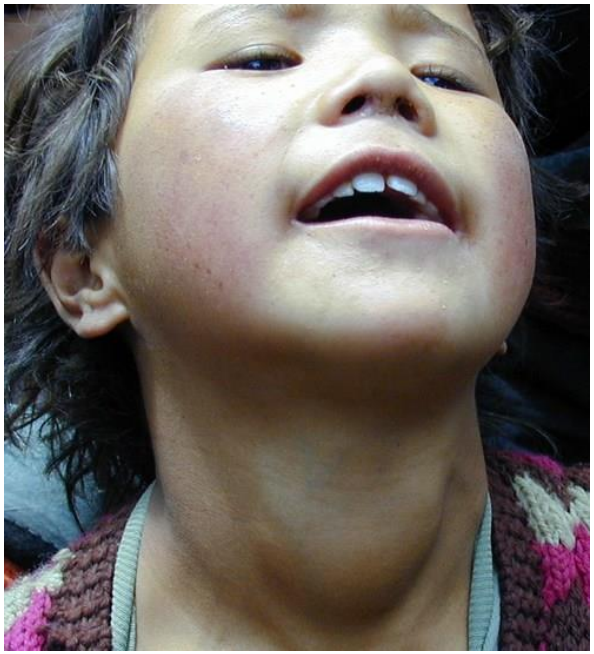


V. Neck

A. Thyroid

B. Trachea position

C. Masses (cysts, nodes)



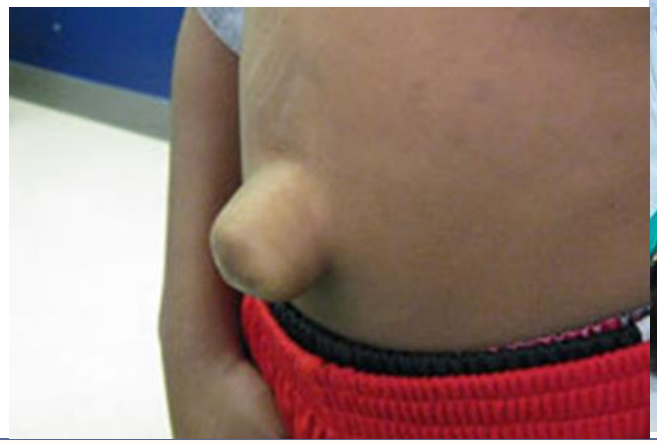
VI. Chest

- Inspect the chest wall for shape, use of accessory muscles and retractions.
- Count the respiratory rate for one minute.
- Assess the type of breathing, abdominal/thoracic or periodic.
- palpation
- Percussion.
- Auscultation

VII. Abdomen

- Inspect for shape (protuberant/scaphoid), visible peristalsis and umbilicus (healthy/discharging/red).
- Palpate for liver/spleen/kidneys (which may be palpable in a normal newborn).
- Percussion for fluid thrill, shifting dullness .
- Auscultate for bowel sounds.

VIII. External Genitalia




thank
you