

# PATIENT CARE THEORY 2

Unit 1 Part 2:

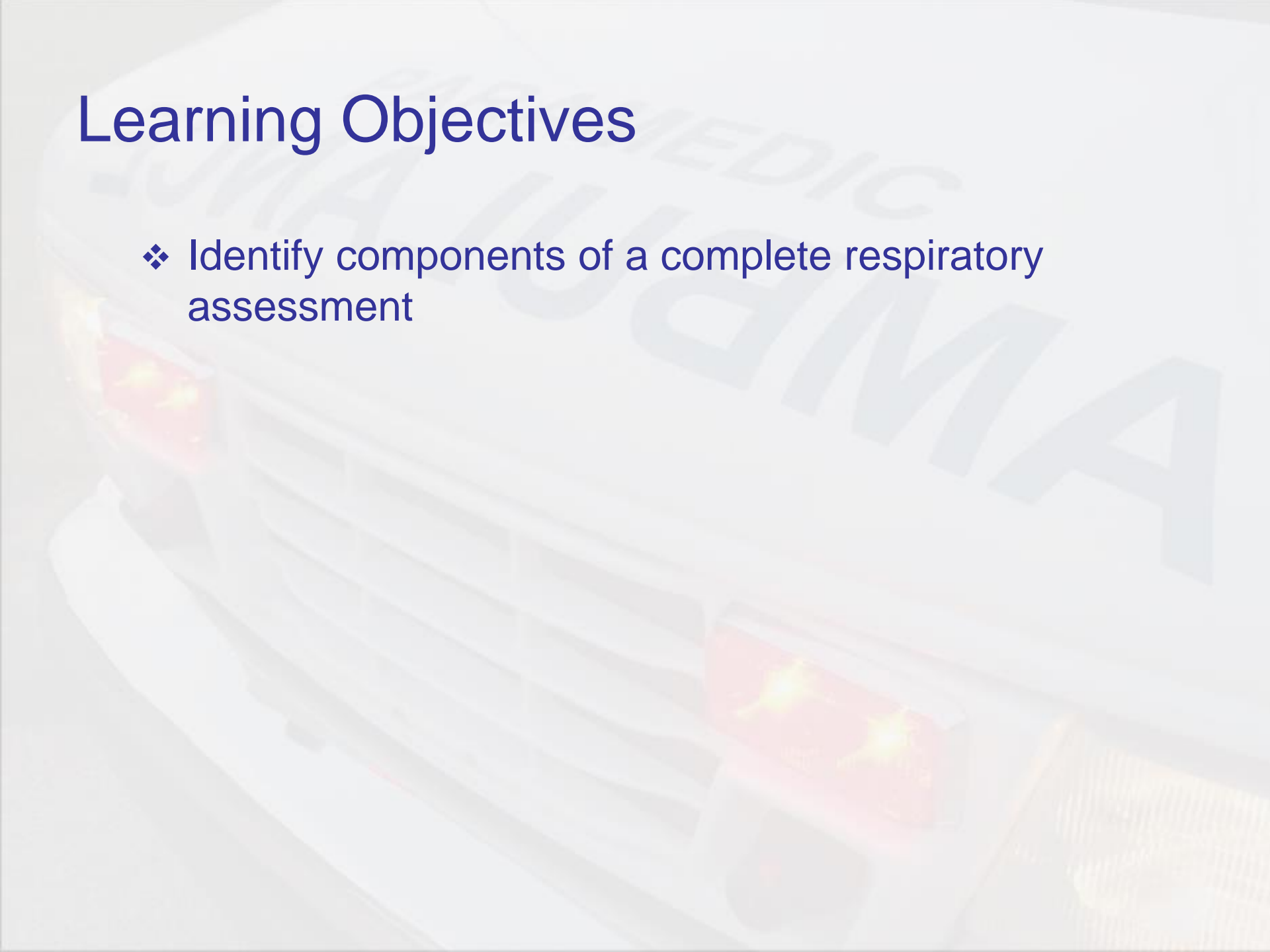
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## The Focused Respiratory Assessment

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Georgian College Winter 2021, 2024 (Sem 2)

# Learning Objectives

- ❖ Identify components of a complete respiratory assessment



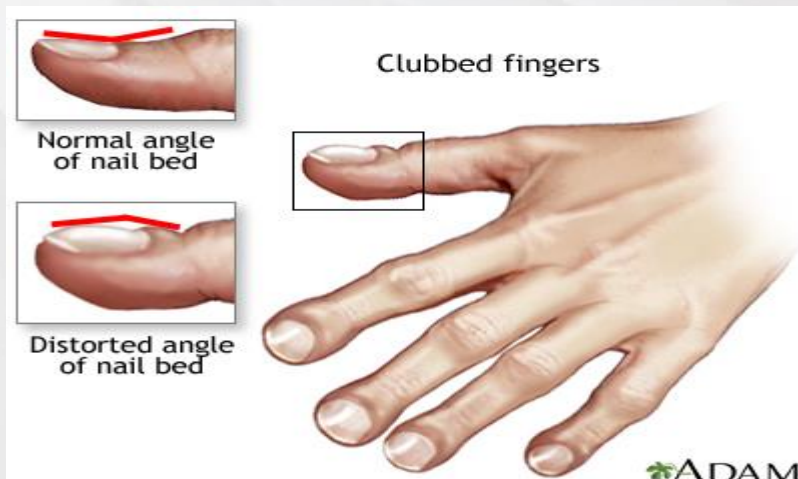
# Respiratory Assessments

- ❖ Purpose:

- Determine the respiratory status of a patient
- Determine effectiveness of breathing
- Provide information that relates to other systems (CV, Neurological)

# Components of a Respiratory Assessment

- ❖ Starts with General Appearance
- ❖ Level of consciousness
- ❖ Posture
  - Tripod Position, accessory muscle usage
- ❖ Effort
  - Stridor occurs during inspiration, supraglottic inflammation
  - Pleural rub occurs from inflamed pleural membrane rubbing against ribs
- ❖ Pallor, Cyanosis
  - Adults don't show discolouring as well as kids
  - Chronic hypoxia
- ❖ Clubbing (excessive curvature of the nail)



# Components of a Respiratory Assessment

## ❖ Must also include:

➤ PMHX and conditions

➤ Current CC and HPI

Chief Complaint  
History of Present Illness

➤ Cough or SOB/dyspnea

Dyspnea is patient reported (subjective), SOB is assessed by you (objective)

➤ Medications – compliance, changes

# Components of a Respiratory Assessment - Cough

- ❖ **Onset** – sudden, gradual
- ❖ **Duration**
- ❖ **Nature** – dry, moist, hacking, barking
  - Severity – does it disrupt activities?
- ❖ **Productive ?** – sputum amount, colour, odour, blood?
- ❖ **Associated symptoms** – sneezing, dyspnea, fever, chills, congestion, chest pain, edema, cyanosis
- ❖ **Provocation** – anxiety, talking, activity
- ❖ **Palliates?**
- ❖ **Remedies?** – Rx, OTC meds
- ❖ **Similar past illness?**

Green suggests acute infection

Red streaks suggests blood due to strain, as opposed to a lot of red suggests lung damage.

Yellow means mucus production.

Black/brown/grey for smokers

→  
Viral Infections can develop into bacterial

# Components of a Respiratory Assessment - History

- ❖ Hx of lung disease?
  - Frequent severe colds, asthma, pneumonia, bronchitis, emphysema, TB, cancer
- ❖ Recent Doctors visit? Hospitalization? X-rays? Exposure to allergens?
- ❖ Family History
- ❖ Social History – Diet, Smoking (including second-hand exposure), alcohol, drugs, occupational environment, activity levels

Trades people  
often develop lung  
injuries

# Assessment of the Chest and Lungs

IPPA  
Inspection (expose, etc.)  
Palpate  
Percussion  
Auscultation

Must use broad pressure, not digital. If painful, suggests musculoskeletal.

Symmetry can be measured by placing hands around sides and back, checking for even movement during breathing.

COMPLIANCE refers to ability of chest wall to expand and rebound

Most superior lung noises are around traps. Most inferior are sides/back around ribs 7-8





# Components of a Respiratory Assessment

- ❖ I - Inspection
- ❖ P - Palpation
- ❖ P - Percussion
- ❖ A - Auscultation

# Components of a Respiratory Assessment

## ❖ INSPECTION

- Shape of the chest – a normal chest is bilaterally symmetrical and elliptical
- Common abnormalities of shape
  - Kyphosis – forward bending of vertebral column
  - Scoliosis – lateral bending of vertebral column
  - Barrel shaped chest – increase in anteroposterior diameter
  - Funnel chest – lower sternum is depressed
  - Pigeon chest – sternum is anteriorly displaced

# Components of a Respiratory Assessment

When inspecting the patient's chest, note deviations in size and shape. These illustrations show a normal adult chest, along with four common chest deformities.

## **NORMAL ADULT CHEST**

No structural deformities or visible retractions



## **BARREL CHEST**

Increased anteroposterior diameter



## **PIGEON CHEST**

Anteriorly displaced sternum



## **FUNNEL CHEST**

Depressed lower sternum



## **THORACIC KYPHOSCOLIOSIS**

Raised shoulder and scapula, thoracic convexity, and flared interspaces



# Components of a Respiratory Assessment

Adult = 12-60  
Child (1-8 years) = 20-30  
Infant (<1 year) = 30-40  
Neonate (due date-28 days) = 40-60

## ❖ INSPECTION Cont'd

- Rate, depth and rhythm of respiration
  - Normal adult? Child? Infant?
- Symmetry of chest expansion
  - In healthy adult should be equal in both sides
- Movement of the chest wall
  - Indrawing, accessory muscle use
- Cyanosis
  - Nails, lips, skin (central vs peripheral)

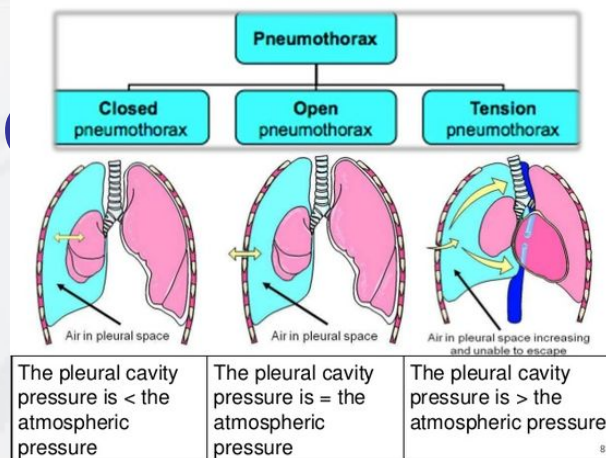
Acrocyanosis

Axial vs Appendicular

# Components of Assessment

## ❖ Palpation

- Should occur at the area of complaint or visible abnormality first
- Position of trachea – normal is midline and can be palpated in the suprasternal notch
- Apex beat or PMI (point of maximal impulse) (not something you commonly assess)
  - 5<sup>th</sup> intercostal space at the midclavicular line
- Why are these important?



Feel sternal notch, check if your fingers can circle trachea. Caused by tension pneumothorax

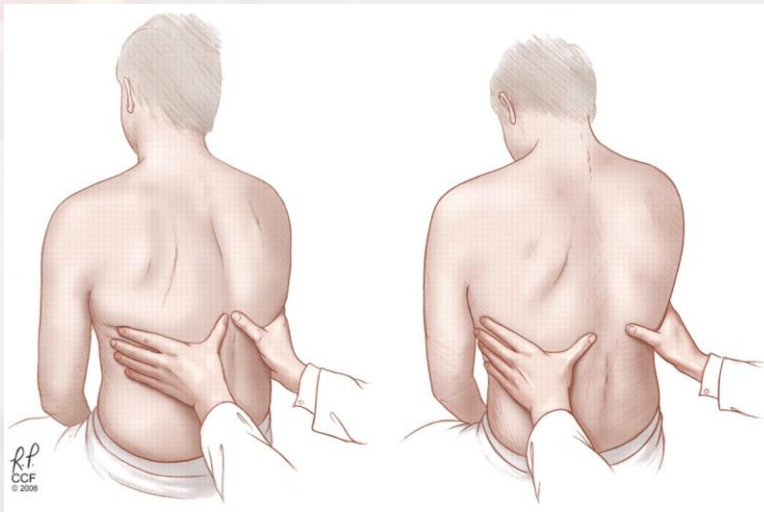
Symptoms include asymmetry, little to no air entry, SOB, decreased LOA, tachycardia, JVD. Hypotension caused by compression of inferior vena cava, killing preload, resulting in no stretch, and weaker contraction. Atrium are low pressure pumps relying on stretch

Fifth intercostal space, mid clavicular

# Components of a Respiratory Assessment

## ❖ PALPATION cont'd

➤ Chest expansion should be symmetrical



- Place both thumbs at about the 7th rib posteriorly along the spinal process/costal margins
- Extend the fingers of both hands outward over the posterior chest wall.
- Have the person take a deep breath and observe for bilateral outward movement of thumbs

# Components of a Respiratory Assessment

## ❖ Percussion

- *Not typically done in the field*
- Gently striking the surface of the body
- Typically where it overlies various body cavities
- Detects changes in the densities of the underlying structures
- Normal lung sounds
- Muscle and bone sounds
- Hollow organs



# Components of a Respiratory Assessment

## ❖ AUSCULTATION

### ➤ 2 types of sounds

### ➤ Vesicular and bronchial

### ➤ Vesicular – originate in larger airways

- Produced by passage of air in and out of normal lung tissue
- Low pitch, quieter sounds
- Heard over normal lung tissue with softer sounds

Larger airways.  
Lower pitch, quieter  
, normal expected  
sound. Louder on  
inspiration.

- the inspiration is longer than expiration
- the inspiratory sound is intense and louder than the expiratory sound
- it is a low pitched rustling sound
- there is no gap between inspiration and expiration





# Components of a Respiratory Assessment

## ❖ AUSCULTATION

- Vesicular with prolonged expiration – obstruction/asthma



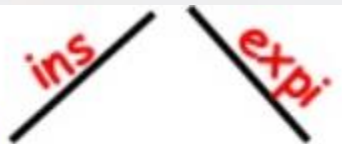
# Components of a Respiratory Assessment

## ❖ AUSCULTATION

### ➤ Bronchial Sounds

- Passage of air in the trachea and larger bronchi
- In normal healthy patients **only heard over the trachea**
- *High pitched, harsh sounds*
- **Indicative of disease or consolidation** *when heard in lobes*

- the expiration is long as or longer than inspiration
- the pitch and sound of the expiration is loud or louder than the inspiratory sounds
- there is a gap between inspiration and expiration



# VESICULAR & BRONCHIAL



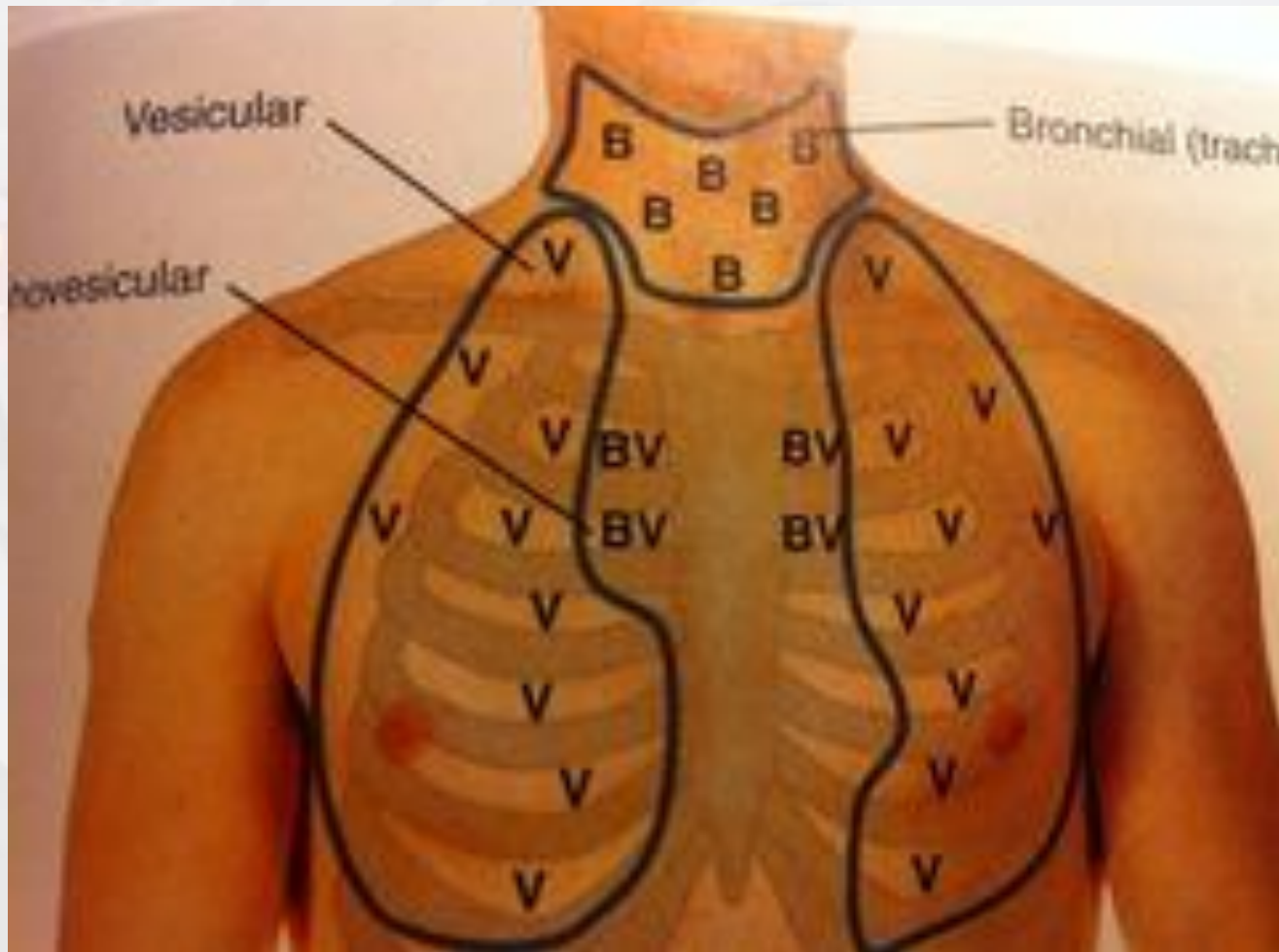
# Components of a Respiratory Assessment

## ❖ AUSCULTATION

### ➤ Bronchovesicular Sounds

- Mid pitch – somewhere between bronchial and vesicular sounds
- Normally heard over the mid thorax region

# Normal Lung Sounds



# Components of a Respiratory Assessment

## ❖ AUSCULTATION: Additional Sounds

- Wheezes
- Crackles
- Rub
- Stridor

# Components of a Respiratory Assessment

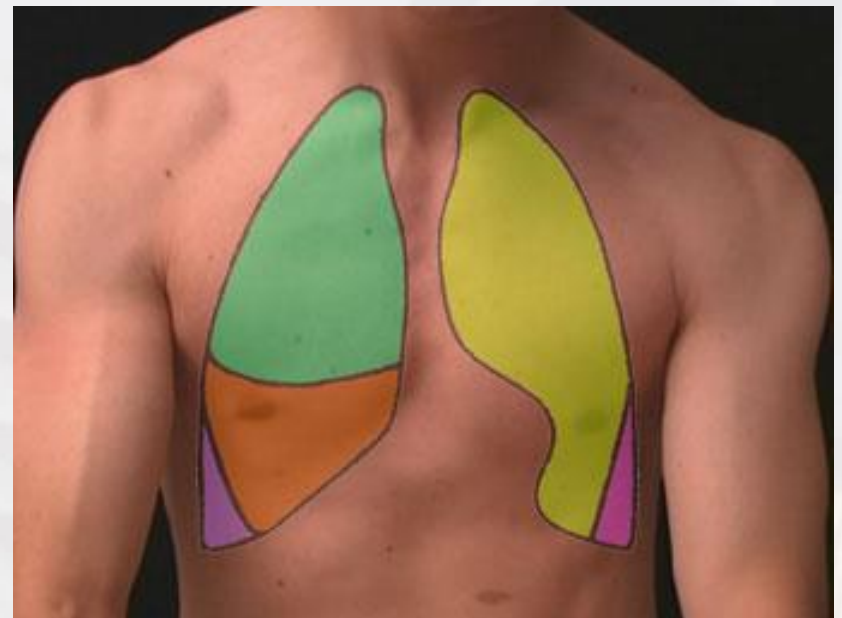
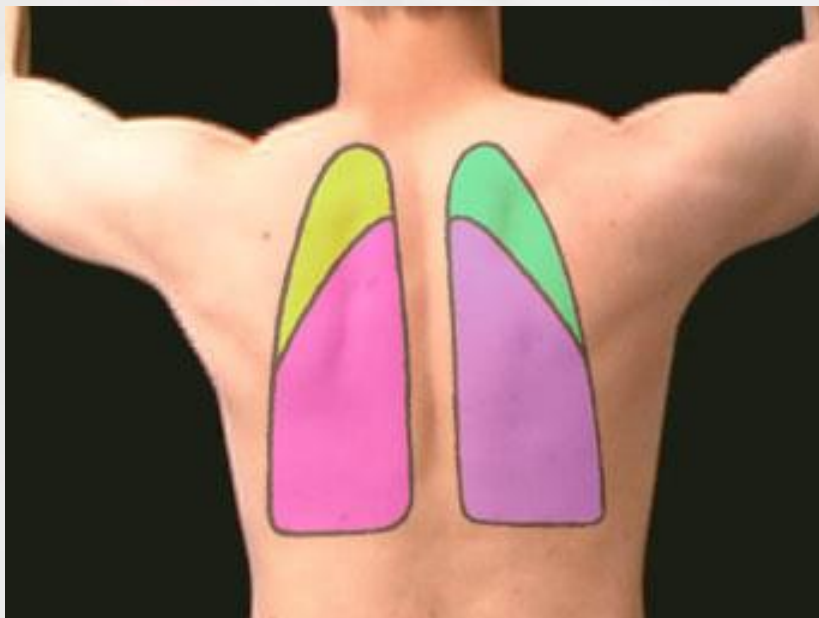
## ❖ AUSCULTATION -PROCEDURE

- Use stethoscope to listen to chest sounds - **MUST LISTEN ON SKIN**
- 6 points may be used for initial assessment
- 8 – 10 points recommended for complete respiratory assessment during a focused exam
- Auscultate lungs on both sides at the same intercostal level before moving to the next point
- Use a systematic manner – apex -> base using “S” pattern
- Listen to one full respiration at each spot
- Try to displace tissue and listen directly over chest wall



# Auscultation

- ❖ Apex to bases
- ❖ Posterior thorax provides best access to lung fields





# Components of a Respiratory Assessment

## Anterior

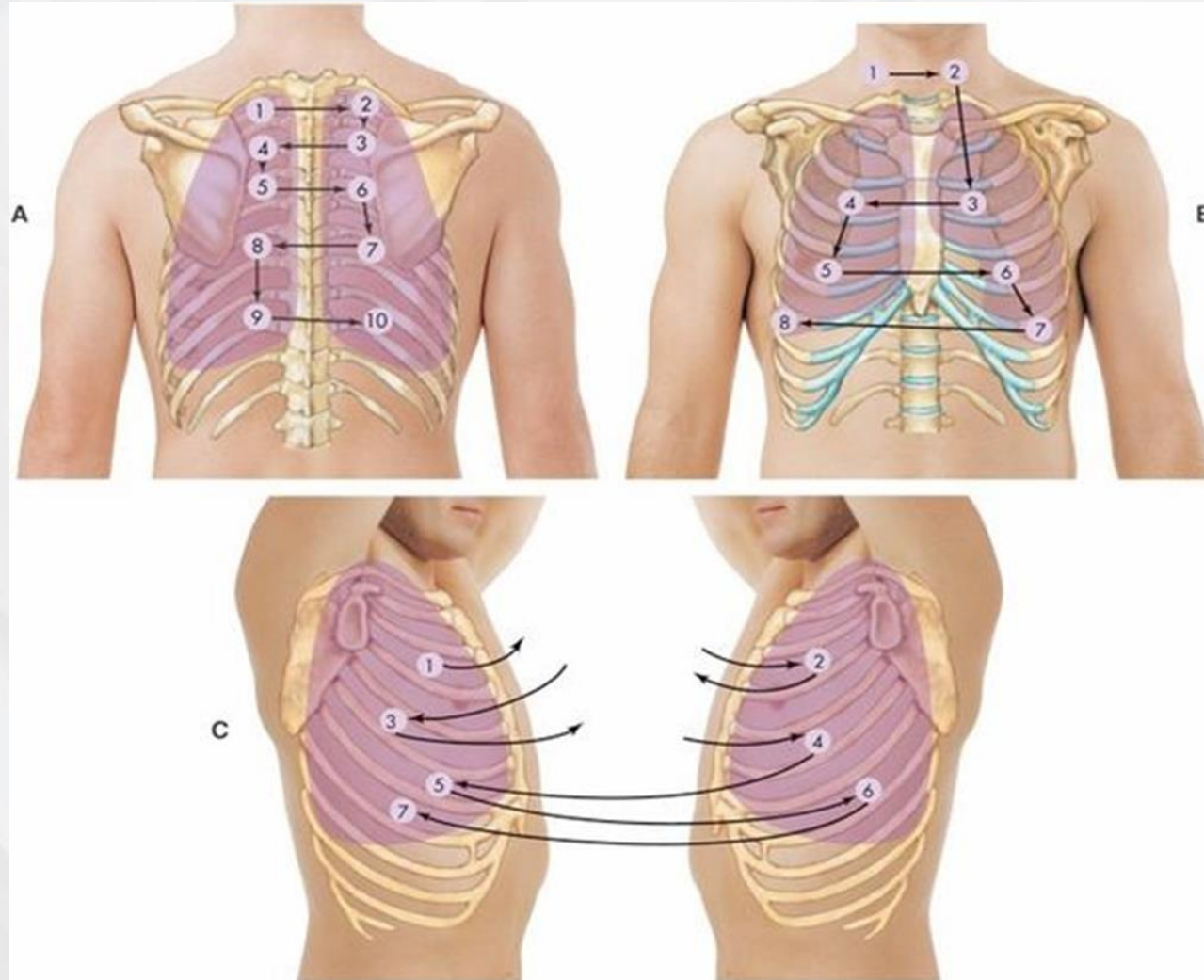
- ① trachea
- ② upper right lung field
- ③ upper left lung field
- ④ middle left lung field
- ⑤ middle right lung field
- ⑥ lower right lung field
- ⑦ lower left lung field



## Posterior

- ⑧ upper left lung field
- ① upper right lung field
- ② middle right lung field
- ③ middle left lung field
- ④ lower left lung field
- ⑤ lower right lung field
- ⑥ right costophrenic angle
- ⑦ left costophrenic angle

# Components of a Respiratory Assessment



## Evaluate for normal sounds

Sound	Pitch	Intensity	Quality	I:E	Location
Bronchial	High	Loud	Blowing/ hollow	$I < E$	Trachea
Bronchovesicular	Moderate	Moderate	Combination	$I = E$	Between scapulae, 1 <sup>st</sup> & 2 <sup>nd</sup> ICS lateral to sternum
Vesicular	Low	Soft	Gentle rustling/ breezy	$I > E$	Peripheral lung

## ♦ Evaluate for adventitious sounds

Sound	Intensity/ Pitch	I/E	Quality	Clear with Cough
Crackles/ Rales	Soft (fine)/ High Loud (coarse)/ Low	I	Discontinuous, nonmusical, brief	Possibly
Wheeze	High	E	Continuous musical sounds	Possibly
Ronchi	Low	E	Continuous snoring sounds	Possibly
Pleural Friction Rub		I & E	Continuous or discontinuous creaking or brushing sounds	Never
Stridor		I	Continuous, crowing	Never

# Developmental Variations

## ❖ Neonates

- Chest is more round vs elliptical
- Obligate nose breathers
- Periodic breathing is common
  - Sequence of vigorous breathing followed by apnea for 10-15 seconds
  - Not concerning unless prolonged or baby's colour changes (cyanotic)

# Developmental Variations

## ❖ Neonates

- Breathing is diaphragmatic and abdominal
- Signs of compromise include:
  - Stridor
  - Grunting
  - Central cyanosis
  - Nasal flaring
  - Sternal indrawing



# Developmental Variations

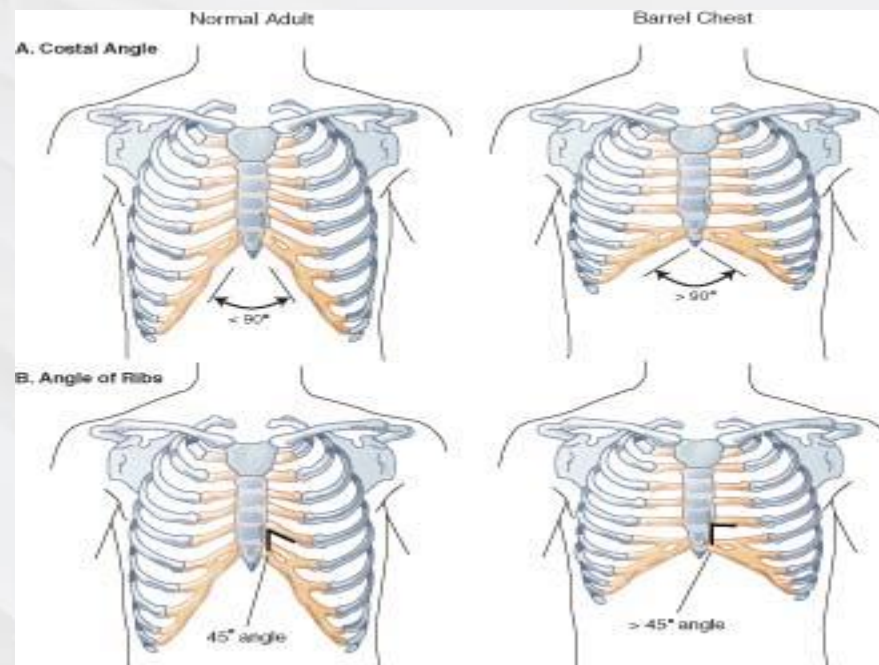
## ❖ Infants and Young Children:

- Round chest continues until ~ age 2
- Thinner chest wall than adults (PMI)
- Breath sounds may sound louder and more bronchial (bronchovesicular throughout chest)

# Developmental Variations

## ❖ Pregnancy

- Costal angle is increased in 3<sup>rd</sup> trimester
- Dyspnea and orthopnea are common
- Tend to breathe deeper







**QUESTIONS?**