ADVANCED ASSESSMENT
Chest Assessment & Auscultation

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AUTHORS

Mike Muir AEMCA, ACP, BHSc
Paramedic Program Manager
Grey-Bruce-Huron Paramedic Base Hospital
Grey Bruce Health Services, Owen Sound

Kevin McNab AEMCA, ACP
Quality Assurance Manager
Huron County EMS

REVIEWERS/CONTRIBUTORS

Rob Theriault EMCA, RCT(Adv.), CCP(F)
Peel Region Base Hospital

Donna L. Smith AEMCA, ACP
Hamilton Base Hospital

Tim Dodd, AEMCA, ACP
Hamilton Base Hospital

References – Emergency Medicine

EVALUATE THE PATIENT
LOOK FOR SIGNS OF DISTRESS
Visual Assessment

General Appearance

- Workload
- Position
- Ability to speak
- Check for surgical scars

Rate of Respirations

- Normal 12-24
- Respiratory pathologies may cause rate to be increased and shallow

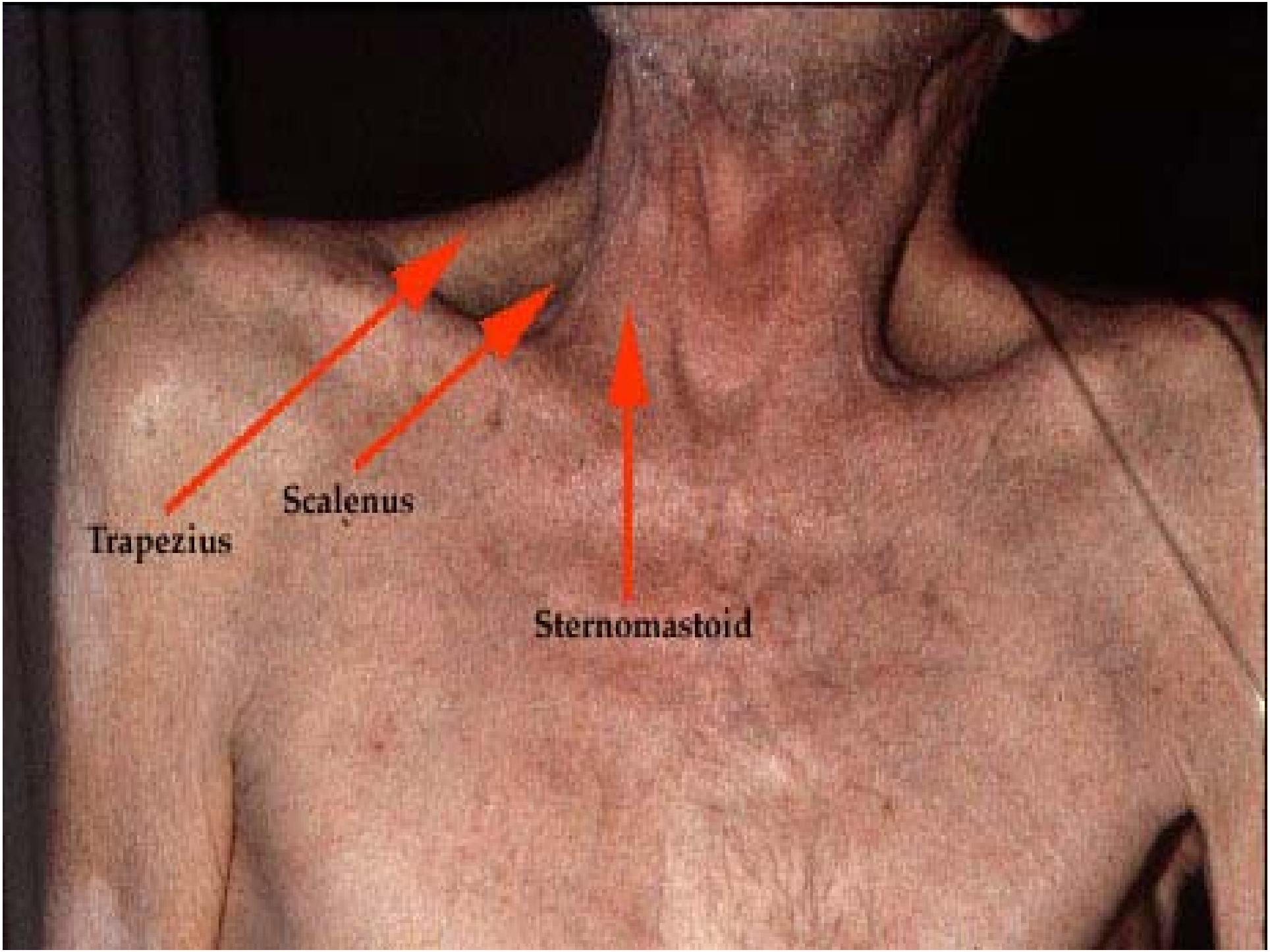
Accessory Muscles
=
Distress

Inspiratory

- Sternocleidomastoids
- Scalenes
- Trapezius

Expiratory

- Internal Intercostals
- Abdominal Muscles

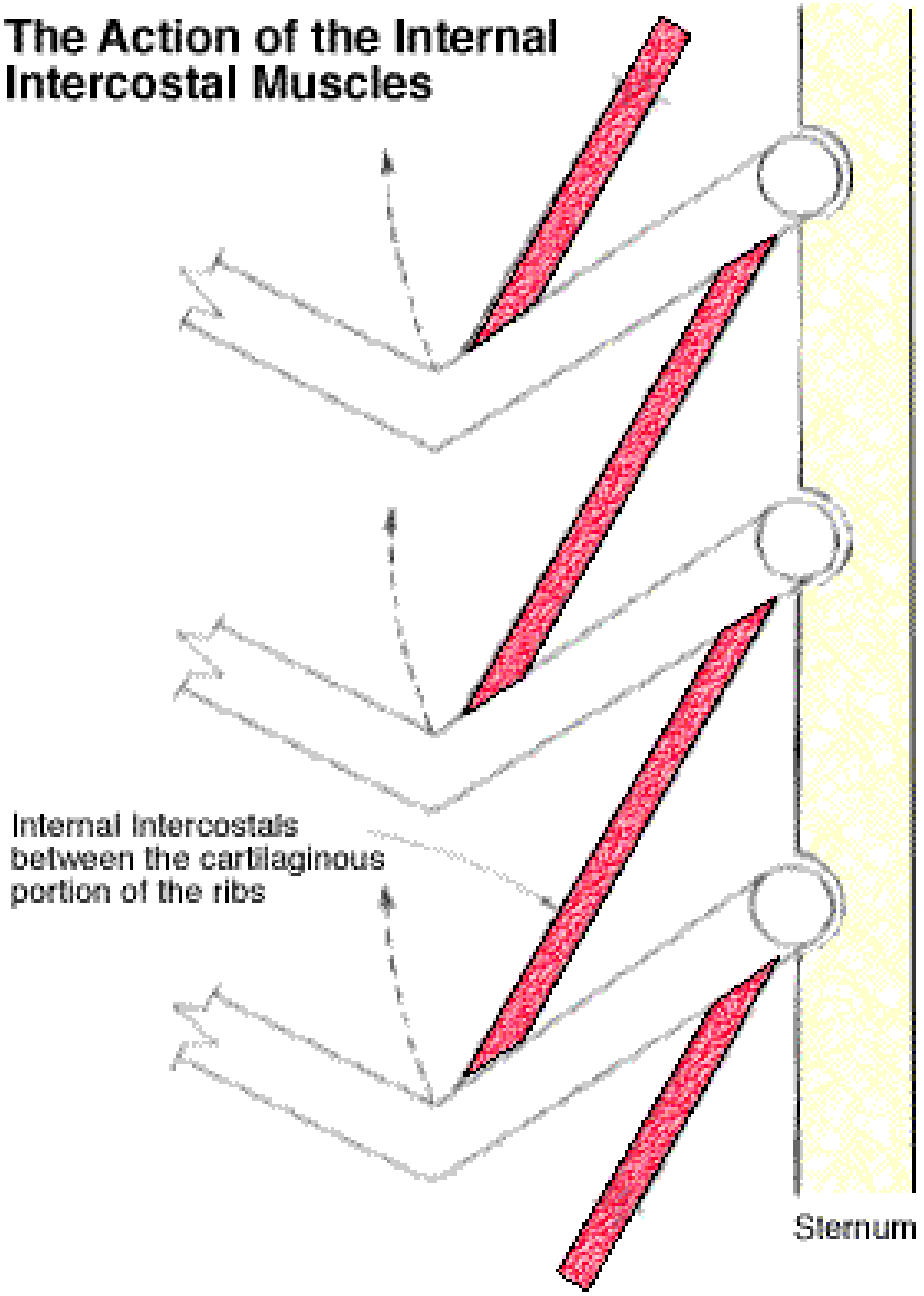

Trapezius
Scalenus
Sternomastoid

Oxygen consumption with breathing

Normal 5%

Distress 25%

The Action of the Internal Intercostal Muscles



Inspiratory Expiratory Ratio 2:3

⇧Resistance = Prolongation I:E Ratio

Purse-lip breathing

- Prolonged expiratory phase

LOA and workload of breathing

Bronchoconstriction/Wet Heavy Lungs

=

Increased workload of breathing

decreased gas exchange

leads to

⇩LOA

NEED POSITIVE PRESSURE VENTILATION

Skin condition in distress

Blue = Bad
(CYANOSIS)

Diaphoresis
=
Sympathetic Stimulation

Physical Exam

Palpation

- Predominantly used to find traumatic injuries
- Tenderness, pain, crepitus
- Subcutaneous emphysema

Auscultation

Breath Sounds

- Produced by air passing through respiratory system
- ⇧ Sound on inspiration (louder)
- ⇩Expiration (Quieter)

Normal Breath Sounds

Breath Sound	Location	I/E Ratio	Description
Bronchial	Heard over trachea	I / E 2 to 3	Loud, Harsh High pitched
Broncho-Vesicular	Anteriorly: near 1st and 2nd IC spaces Posteriorly: Between scapulas	I / E 1 to 1	Soft, Breezy Pitch is lower than Bronchial
Vesicular	Lungs periphery Softer, swishy Not over sternum over scapulas	I / E 3 to 1	Pitch is lower than Broncho vesicular

Listen with intent for

- Breath sounds to the bases
- Equal breath sounds
- Inspiration
- Expiration
- Abnormal breath sounds
  - Absent or diminished breath sounds
  - Displaced bronchial breath sounds
  - Adventitious breath sounds

Crackles

- Most common cause air passing through fluid (other?)
- Fine = Smaller airways
- Coarse = Larger airways
- Predominantly heard on inspiration
- Can be equal both lungs
- Can be isolated to one area

Wheezes

- Produced by air forcing its way through narrowed airways (bronchoconstricted)
- High pitched musical sounds heard on expiration
- Can be heard on inspiration

- **Smooth Muscles Irritation = Bronchoconstriction**

Stridor

- High pitched continuous crowing sound that is heard over the trachea and larynx
- Stethoscope not normally needed
- Best heard over neck
- Partial airway obstruction from:
    - foreign objects, swelling

Pleural Rub

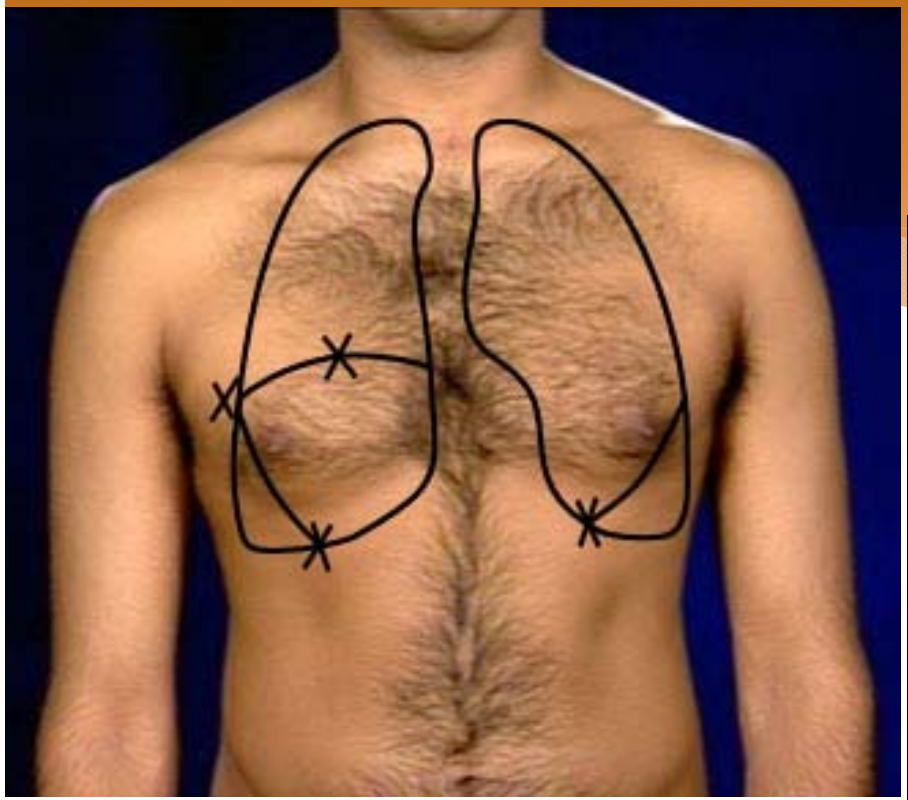
- Constant grating sound that is heard on inspiration and expiration
- Caused from parietal and visceral pleura rubbing together
- Pleura inflamed (loss of serous fluid)
- Usually localized

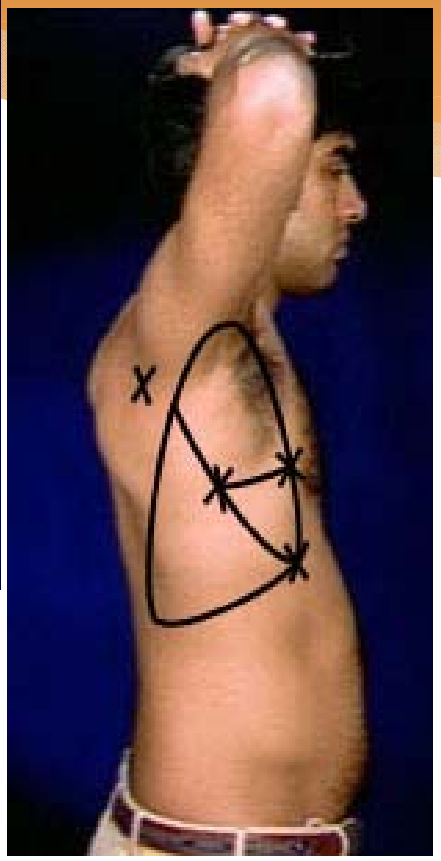
Proper Auscultation Procedure

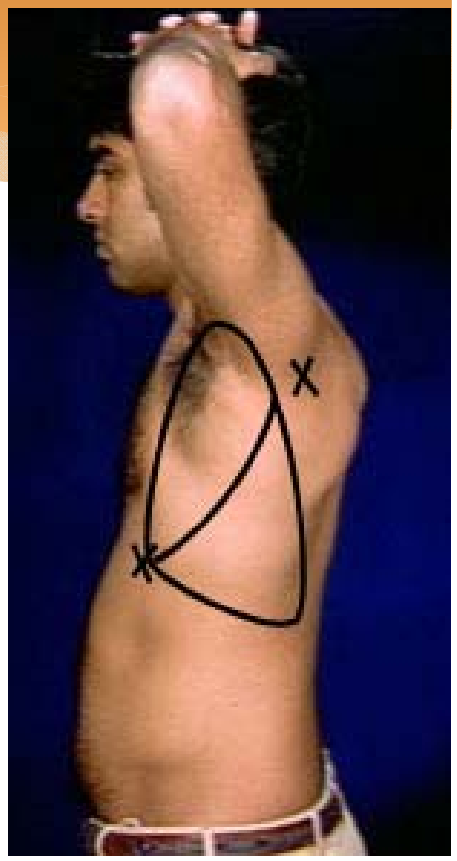
- Attempt to place patient in sitting position
- Attempt to minimize as much outside noise as possible
- Encourage patient not to make any moaning and groaning noises

*Auscultation should take place within the first 2 minutes

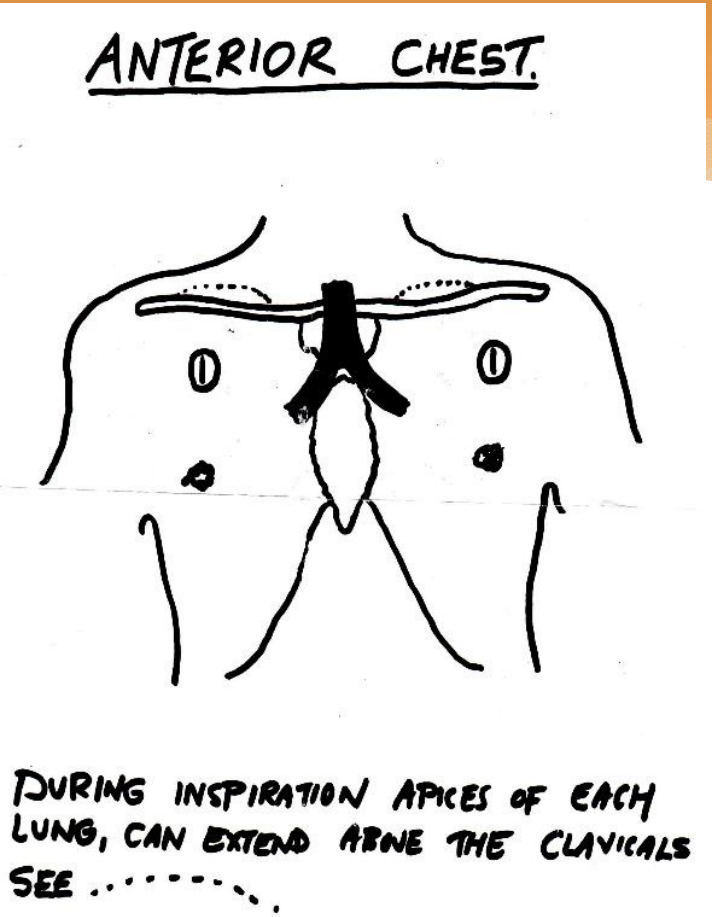
WHERE SHOULD I LISTEN?



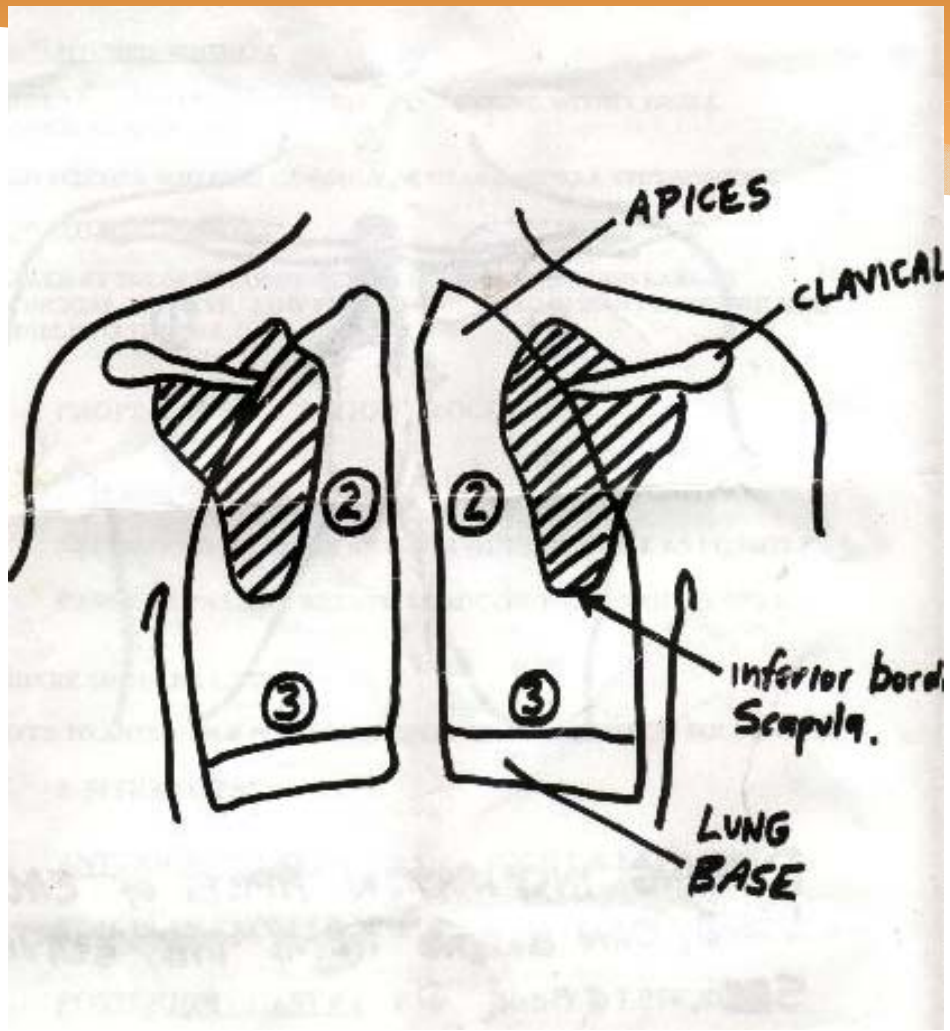




Anterior Chest



Posterior Chest



Question # 1

Why do sick asthmatics often have very little wheezing?

A Severe bronchoconstriction resulting in decreased ventilation and movement of air resulting in decreased wheezing

B The patient is faking it

C The patient has used their Ventolin and no longer has wheezes

D Asthmatics have crackles

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Question # 2

You are called for a child choking. You note small toys around the child. Which of the following breath sounds are you most likely to hear with a foreign body aspiration?

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B Wheezing

C Stridor

D Friction rub

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Question # 4

A high pitched airway noise that results from lower airway narrowing is known as:

A Rales

B Stridor

C Crackles

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Question # 5

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B Vesicular

C Wheezes

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Question # 6

Chest wall diameter may be increased in patients with what condition?

A Pregnancy

B Heart Disease

C Rib fractures

D Obstructive Pulmonary Disease

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Question # 8

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B Intercostals

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Question # 9

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A The eighth rib mid-axillary

B The sixth rib anterior chest wall

C T3 posterior chest wall

D The eighth rib anterior chest wall

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Question # 10

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Well Done!

Ontario Base Hospital Group

Self-directed Education Program

SORRY,
THAT'S NOT THE CORRECT ANSWER