Physical Exam in the Dialysis Patient

Volume Status

Volume Status
Lung Exam

- When assessing the volume status of a patient the lung, heart, and peripheral exam are most important
- To properly perform a lung exam you need to know where to auscultate (listen), what normal lungs sound like, what “adventitious” or abnormal lung findings sound like, and what they mean.

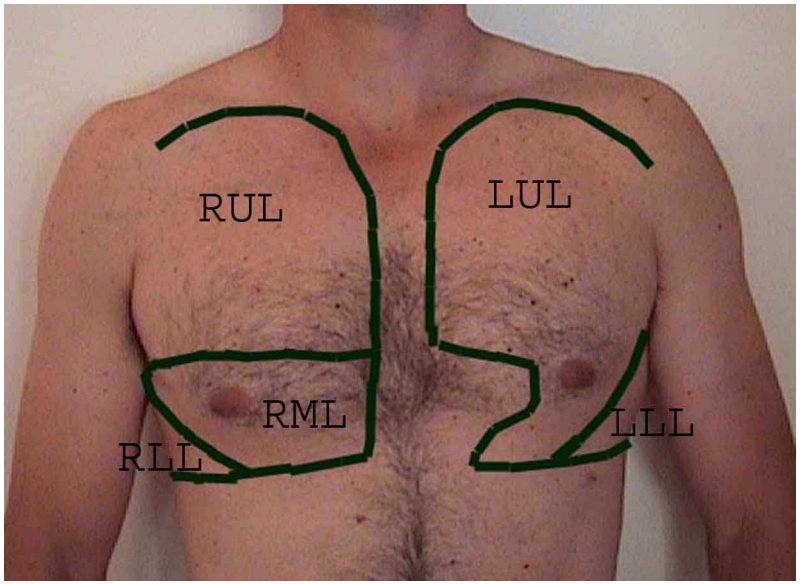
Lung Exam
(cont)

- Listening to the lungs tells us about air flow through the bronchial tree, and assesses the condition of the lungs and pleural space (outside of the lung).
- The patient should breathe in and out through the mouth more deeply than normal. Listen to one full breath in each location.

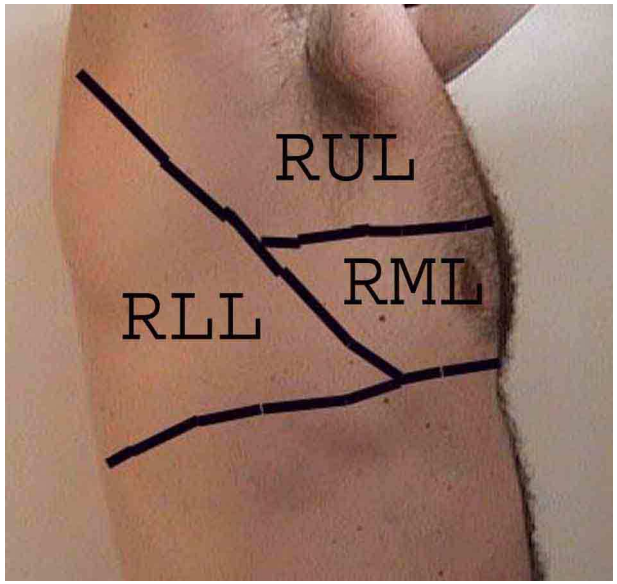
Normal Breath Sounds

- In normal breathing with the diaphragm of the stethoscope, expiration is low-pitched, soft, and shorter than the inspiratory sound. (though in reality expiration is longer you just cannot hear the sounds after a certain point.
- Compare sides for symmetry when you listen.
- Observe the rate, rhythm and effort of breathing and listen without the stethoscope as you observe.
- Resting Rate = 8-16/min

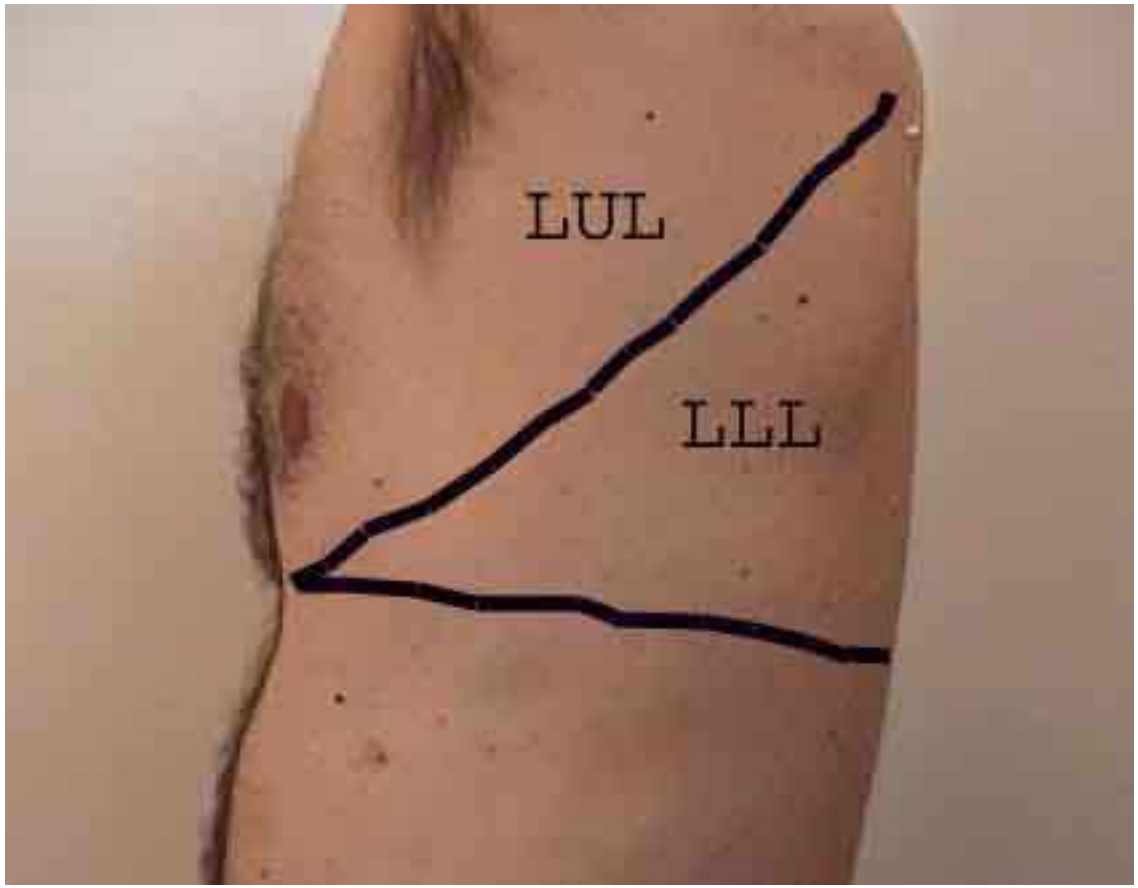
Lung Fields



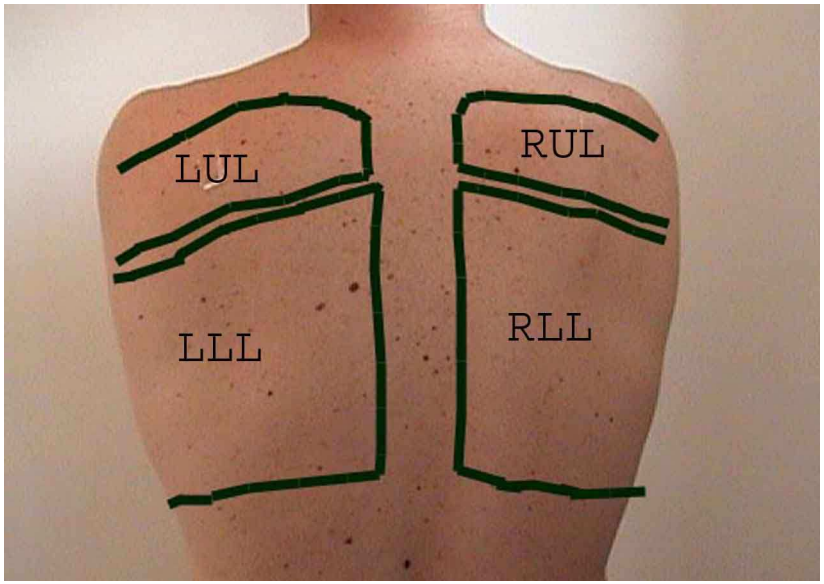
Lung Fields



Lung Fields



Lung Fields



Auscultation

Auscultation

Abnormal Breath Sounds

- Crackles: These are small purring noises heard relatively late in inspiration and are caused by tiny explosions when the alveoli are popped open after being closed.
- They can be present in pneumonia, congestive heart failure, and volume overload. Some older patients have them and they go away if you have them take a deep breath. These are not a result of volume overload.

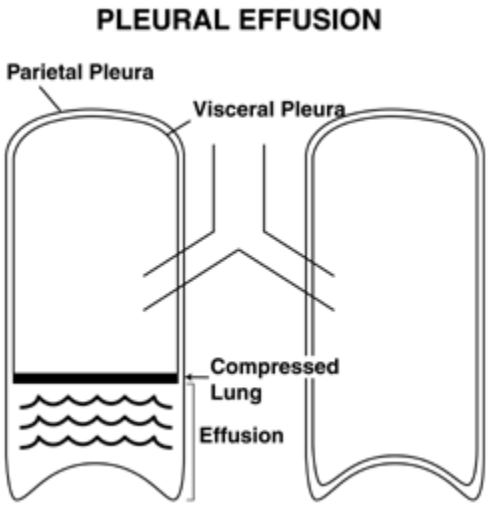
Abnormal Breath Sounds (continued)

- Wheezes: These are musical sounds produced by rapid passing of air through the bronchus which is narrowed from asthma or COPD.
- They can occur on inspiration or expiration.
- Rhonchi: Are coarser types of wheezing.
- Sometimes it is difficult to tell if the wheezing and rhonchi are coming from referred upper airway noise and having the patient cough can help to clear this up.

Abnormal Breath Sounds (continued)

- Absent or decreased sounds occur if there is fluid around the lung in the pleural space that is compressing the lung so the air cannot get in. This is called a pleural effusion and can happen if a patient is chronically volume overloaded. It can occur on one or both sides.

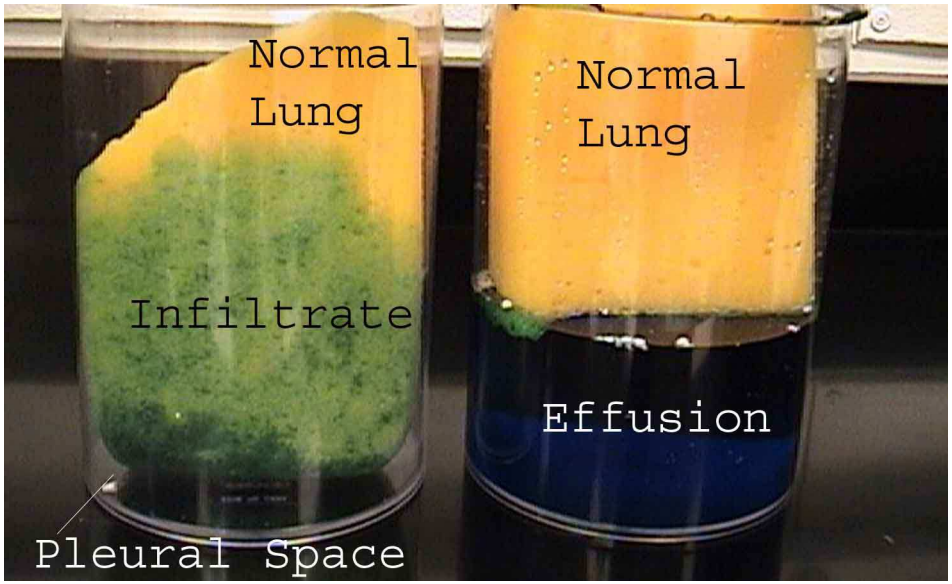
Effusion


PLEURAL EFFUSION
Parietal Pleura
Visceral Pleura
Compressed Lung
Effusion

Abnormal Breath Sounds (cont)

- Decreased sounds may also occur if there is a problem in the lung tissue itself as in the case of pneumonia or infection. There may be “bronchial” sounds where they shouldn’t be.

Effusion/Infiltrate



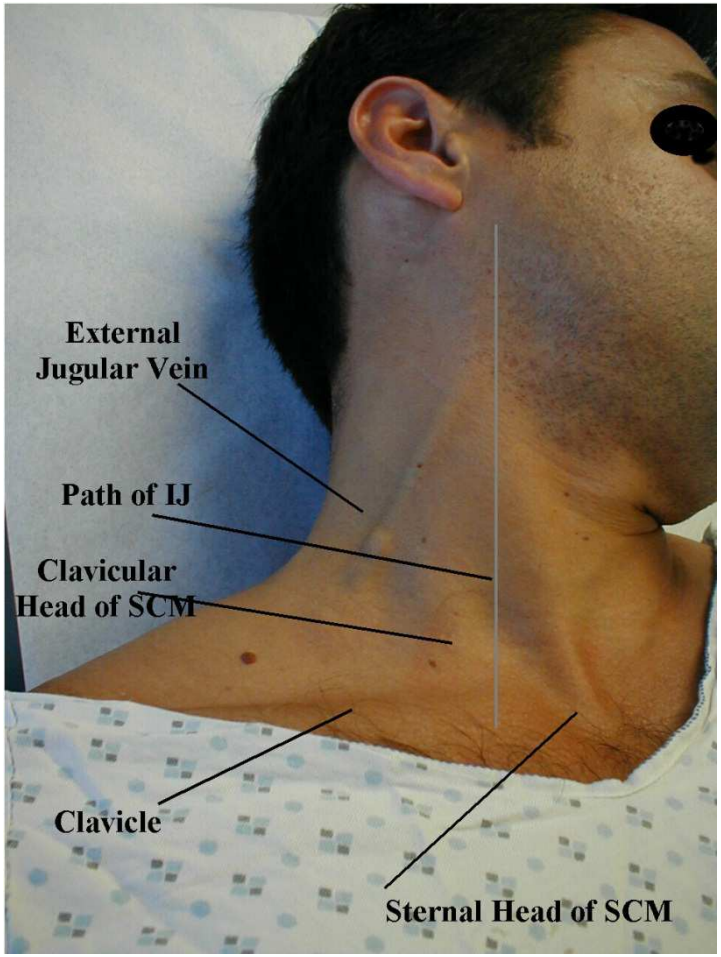
Cardiac Exam

- When assessing the patient – listen to the rhythm and the rate.
- Is it regular or irregular?
- Is it slow (less than 60)
- Is it fast (greater than 100)
- If it is abnormal or irregular count the apical pulse by listening with the stethoscope (not by palpating the radial pulse) for at least 30 seconds but preferably one full minute

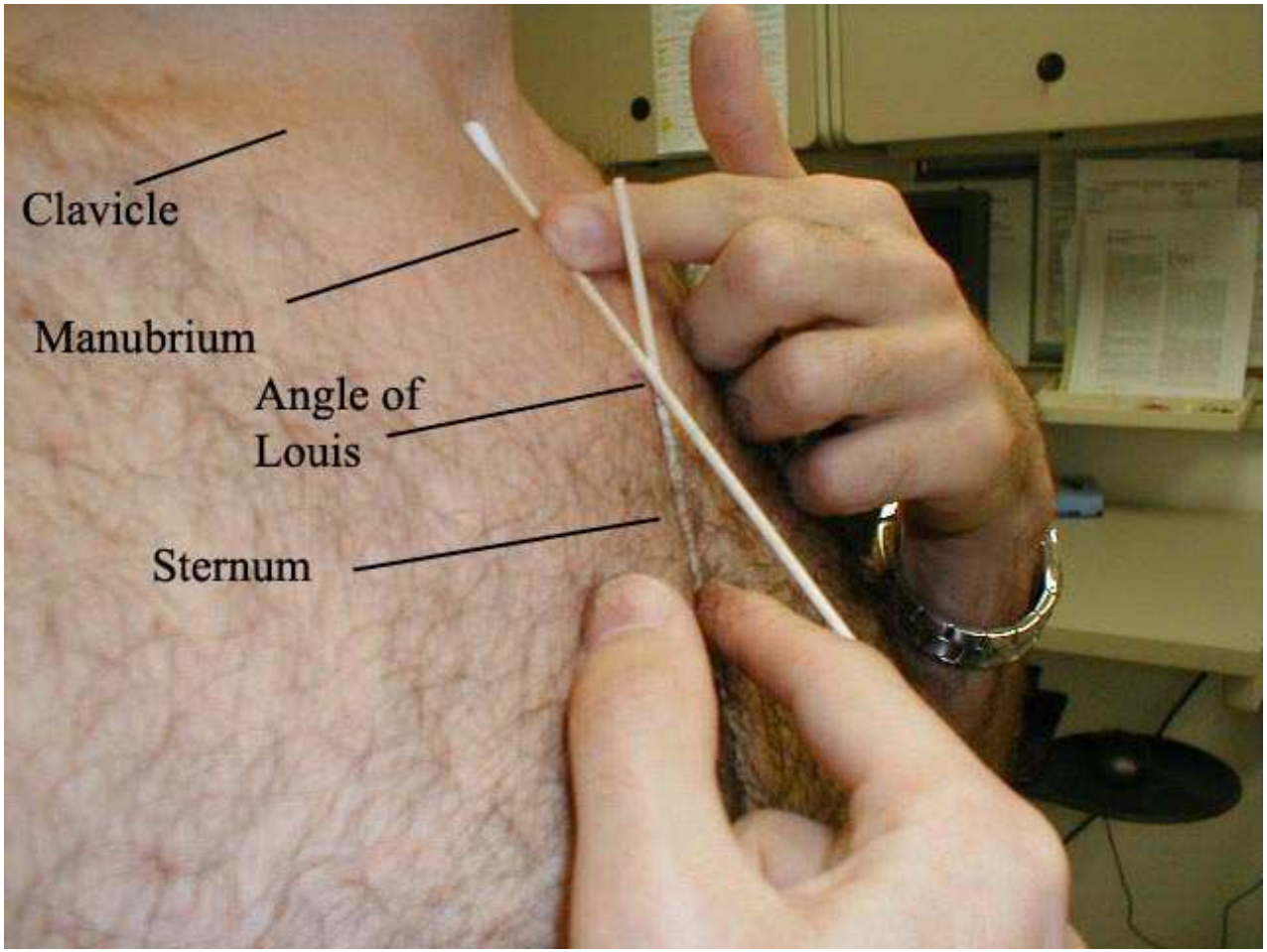
Jugular Venous Assessment

- Jugular Venous pressure helps to assess if there is increased volume.
- The “sternal angle” is used as a landmark because we know where this is in relation to the right heart and can use it to guess at venous volume.
- With a patient lying down with HOB elevated about 30 degrees we look for the pulse of the INTERNAL jugular vein which normally should be at about the clavicle.

Jugular Venous Assessment

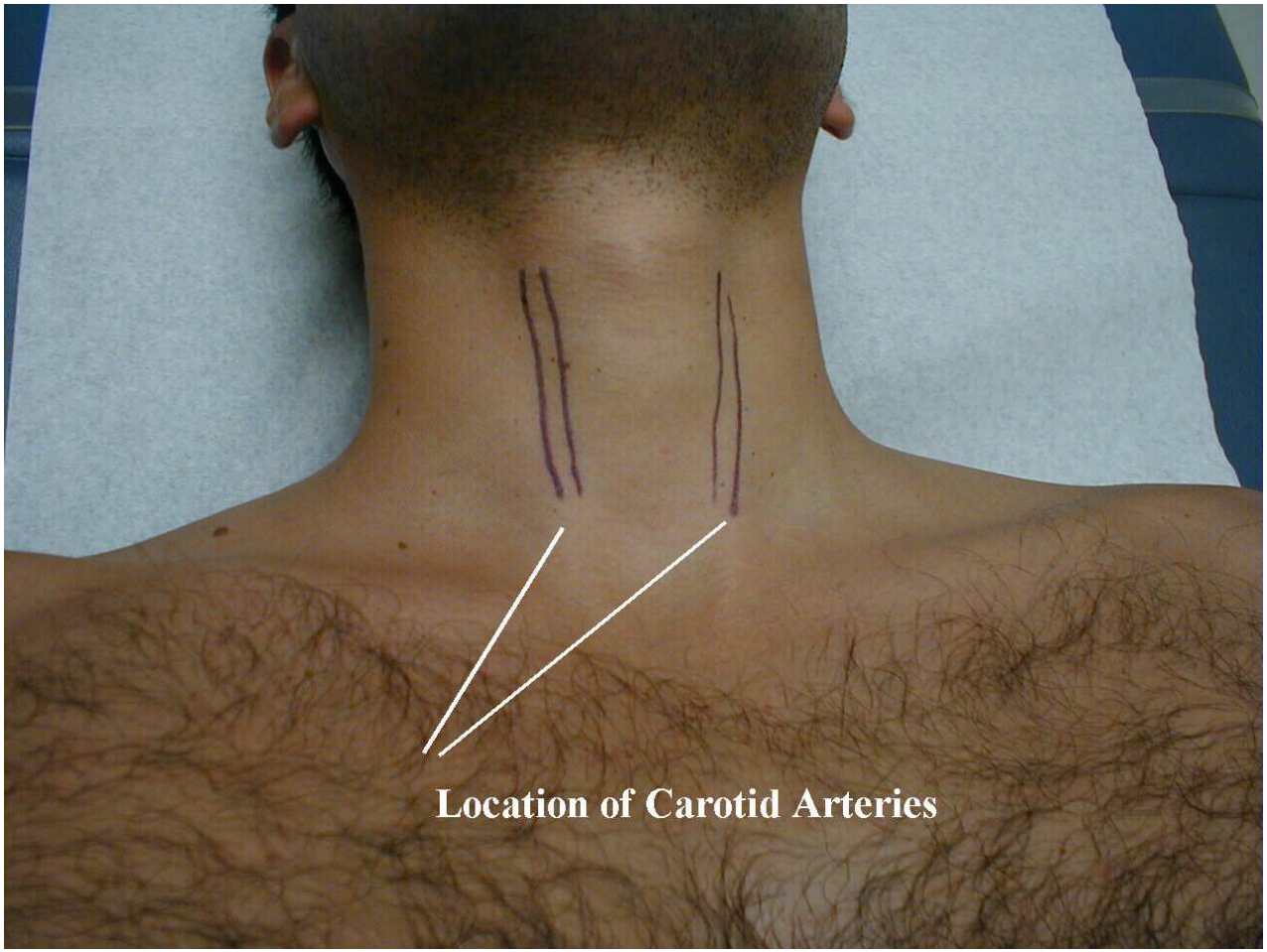


Sternal Angle



JVP


CVP = 5cm
+ this Height
Assuming the top of the pulse wave reached this point of the neck.


Location of Carotid Arteries

Peripheral Exam

- Edema: Can be subtle or obvious.
- The patient has extracellular volume excess by definition if there is edema.
- There is a difference between intra-vascular volume and ECV excess and it is possible to have both.

Edema

Edema