

Cardiac Assessment Handout *(save for Cardiac Unit)*

How to use a stethoscope

- Place earpieces into outer ear canal. They should fit snugly but be comfortable. The earpieces are connected to metal tubing (binaurals), which connect to rubber or plastic tubing (this tubing should be flexible and around 12-14 inches long for good sound transmission).
- Angle the earpieces towards your face. This ensures that sounds are transmitted to your eardrums.
- Use the diaphragm to detect high-pitched sounds such as heart (S1 & S2), lung, & bowel sounds. Hold the diaphragm firmly against the body part.
- The bell should be used for low-pitched sounds (S3 & S4). Don't apply too much pressure with the bell, as it will make it work like a diaphragm.

How to Auscultate Heart Sounds

- Cardiac auscultation requires a methodical approach & lots of practice. Concentrate as you listen to each sound. **Avoid** listening through clothing & avoid extraneous sounds by keeping the tubing off the patient & other surfaces.
- Ask the patient to breathe normally & hold breath periodically to enhance sounds that may be difficult to hear.
- **Identify S1 (Lub)** - beginning of systole, corresponds to the closure of the tricuspid & mitral valves.
 - o S1 is best heard @ **5th ICS MCL** (mitral area, apex of the heart). If you are unsure, palpate the carotid pulse, as it should correspond with S1.
 - o *Be sure to count apical pulse here.*
- **Identify S2 (Dub)** - end of systole, corresponds to the closure of the aortic and pulmonic valves.
 - o S2 is best heard @ **2nd ICS RSB** (aortic area, base of the heart)
 - o The S2 or dub sounds shorter, more high-pitched, & louder than S1.
- **Technique:**

Beebe Healthcare
Margaret H. Rollins School of Nursing
Nursing 101 - Foundations of Nursing

- o Remember **APE TO MAN** (aortic, pulmonic, tricuspid, and mitral).
- o Listen with diaphragm @ right 2nd ICS near sternum (aortic arch), left 2nd ICS near sternum (pulmonic area), left 3-5 ICS @ sternum (Tricuspid area), & @ apex (PMI, mitral area) 5th ICS MCL.
- Listen for extra sounds in systole (*between S1 & S2*) and then in diastole (*between S2 & S1*). If an abnormality is heard, the entire chest is re-examined to identify the farthest site it is still heard.
 - o **S3 (ventricular gallop)** - resembles the word “ken-tuc-ky” & is heard during diastole (S1, S2, S3).
 - Can be normal in children & young adults or may be a sign of heart failure, CHF, mitral regurgitation, or shunts.
 - S3 is low-pitched and results from vibrations caused by rapid ventricular distention & resistance to filling.
 - o **S4 (atrial gallop)** - commonly described as “**Ten-nes-see**” occurs just before S1 after atrial contraction (late in diastole).
 - Can indicate HTN, acute MI, aortic stenosis.
 - S4 is an increased resistance to ventricular filling & results from vibrations caused by forceful atrial ejection of blood into ventricles that are enlarged or hypertrophied.
 - o **Murmurs** occur when structural defects in the heart’s chambers or valves cause turbulent blood flow. Listen for murmurs over the same precordial areas used in auscultation for heart sounds.
 - o **Pericardial friction rub** occurs in pericarditis, sounds scratchy like rubbing. Have patient sit upright, lean forward, & exhale while listening with the diaphragm over 3rd ICS on left chest. Have pt. hold breath if you can’t hear.

Beebe Healthcare
Margaret H. Rollins School of Nursing
Nursing 101 - Foundations of Nursing

