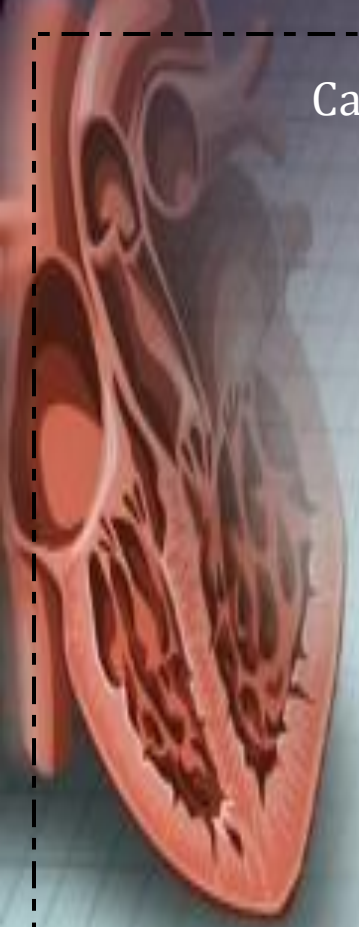
Cardiovascular Block



7th Lecture

HEART SOUNDS

Physiology Team - 430

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Heart sounds:

Heart sounds can be detected from the anterior chest wall using a stethoscope. “lub, dub, lub, dub”

Stethoscope:
Is an acoustic medical device for listening to the internal sounds of an human body.

Consists of Three parts:

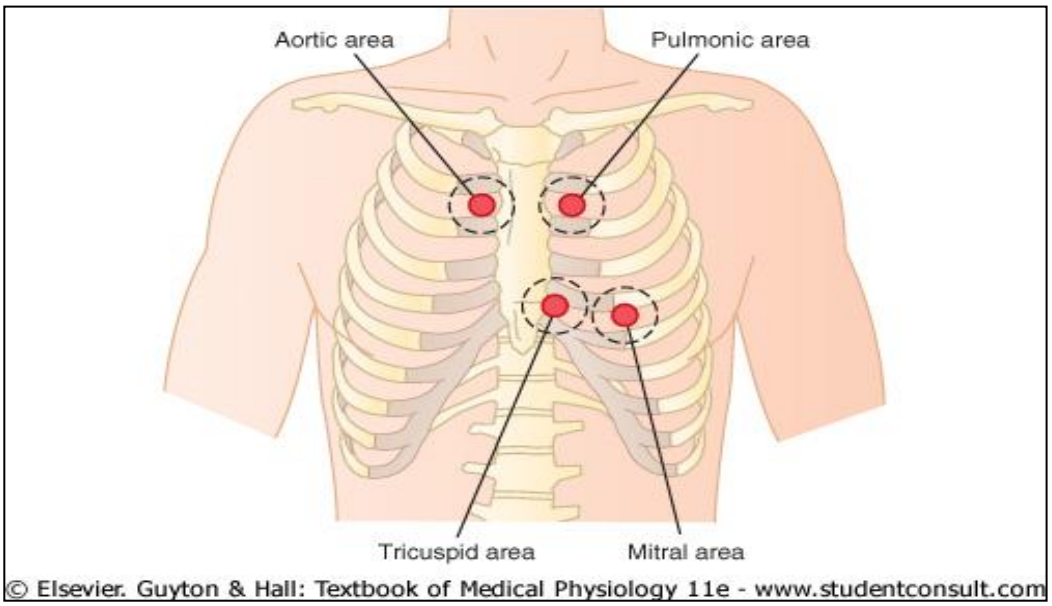
1- Chest piece: consists of two sides: Diaphragm (large circle): for frequency sounds , Bell (small circle): for low frequency sounds
2- Tube: The sound of beating travels from chest piece through this tube to ear piece.
3- ear piece: has the two ear pieces

Auscultation:

Listening to the sounds of the body with a stethoscope.

Areas of Auscultation:

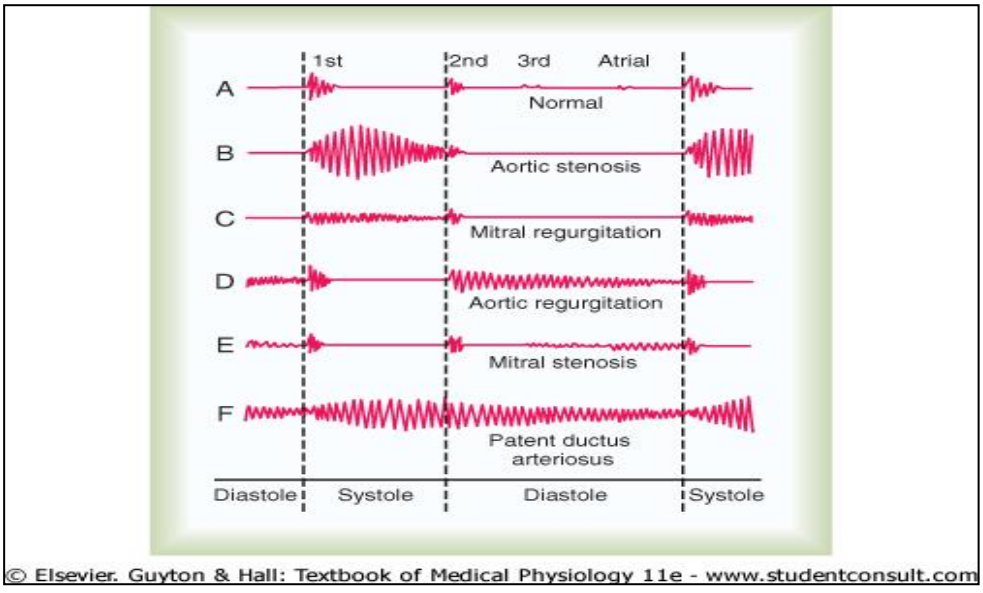
Areas	Aortic	Pulmonic	Tricuspid	Mitral
Location	2nd intercostals space near to the sternum from the right side	2nd intercostals space near to the sternum from the left side	4th intercostal space, left sternal edge	at the apex beat of the heart left 5th intercostals space in the middle clavecular line



Phonocardiogram (PCG):

Is a plot of high fidelity recording of the sounds and murmurs made by the heart with the help of the machine called phonocardiograph, or "Recording of the sounds made by the heart during a cardiac cycle.

- Recording of heart sounds as waves.
- A microphone that detect low-frequency sound is placed on the chest.



There are 4 heart sounds:

- 1st and 2nd heart sound are easy to hear in all part of chest. (Must be present in all people).
- 3rd heart sound can be heard normally only in young people and pregnant women. (60% of young people) .
- 4th heart sound doesn't heard in normal person.

Normal heart sounds :

Heart Sounds	First	second	Third	Fourth
Cause	Closure of the atrioventricular (A-V) valves	Closure of the semilunar valves	Rush of blood from the atria to ventricle (Rapid filling phase)	Rush of blood into the ventricles. (Atrial contraction)
Time	Beginning of ventricular systole	Beginning of ventricular diastole	Middle of ventricular diastole	Atrial systole Just before 1st heart sound.
Frequency	50-60 Htz	80-90 Htz	20-30 Htz	< 20 Htz
Duration	0.14 sec	0.11 ec	0.1 Sec recorded by phonocardiogram	0.04 sec recorded by phonocardiogram

1st heart sound	2nd heart sound
Closure of the atrioventricular (A-V) valves	Closure of the semilunar valves
The mitral valve close first because pressure different in ventricular	The aortic valves close first because aortic pressure is hight
LUB sound	DUB sound
dull and prolong	Sharp and short

Splitting
One sound Split into two sound.

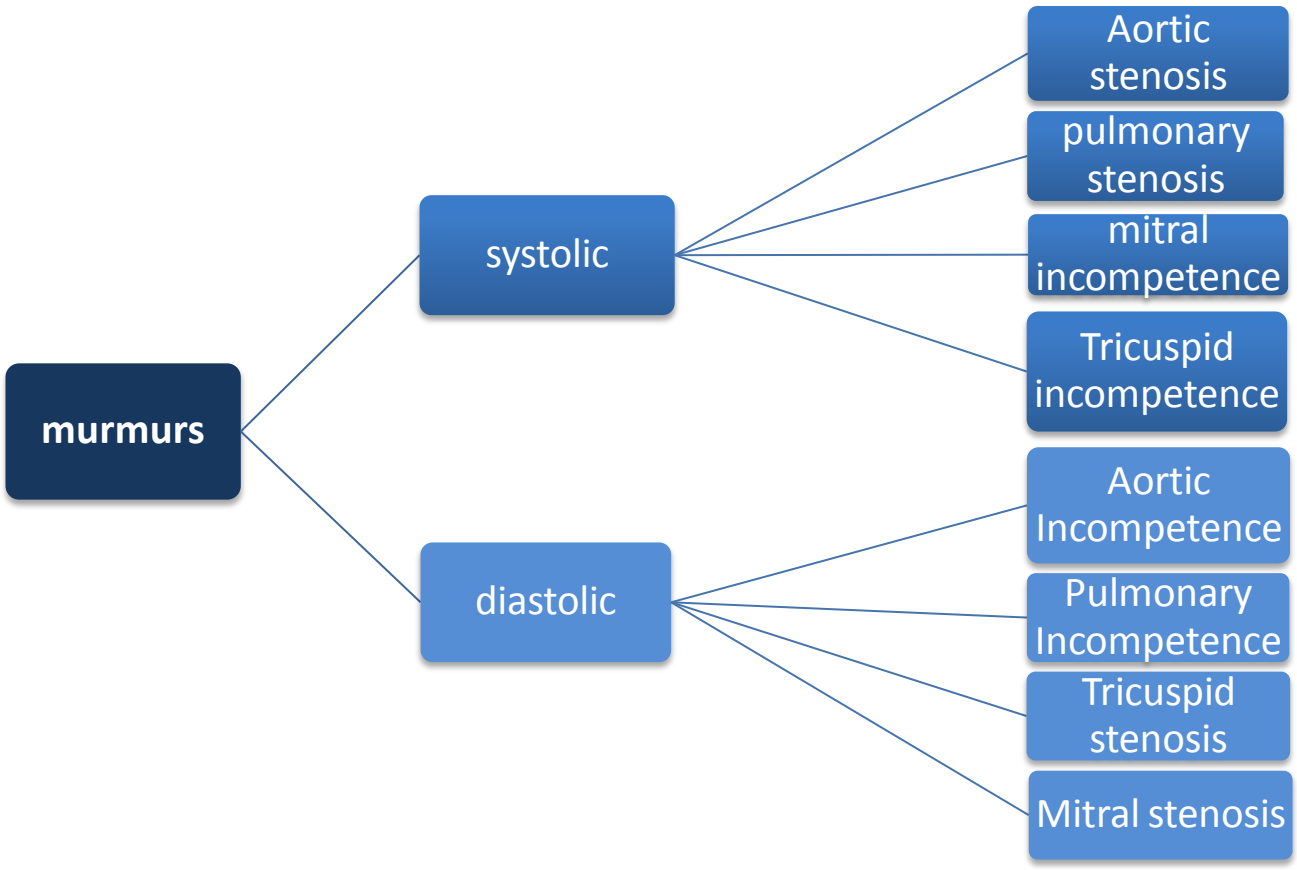
1st heart sound	2nd heart sound
Abnormal	Normal when you take a deep breath in
due to delay closure of tricuspids valve	due to delay closure of pulmonary valve

Murmurs :
Abnormal heart sound caused by valvular lesions resulting in:
Stenosis or Incompetence (Regurgitation).

*__Stenosis__: Incomplete opening of the valves.
Constriction or narrowing in heart valves. (Whistling sound)

***Incompetence (Regurgitation):** Incomplete closing of the valves.
The blood is rushing back into the previous site. (Gargling sound)

Most common **cause of valvular lesion**: **rheumatic fever .**


murmurs
systolic
diastolic
Aortic stenosis
pulmonary stenosis
mitral incompetence
Tricuspid incompetence
Aortic Incompetence
Pulmonary Incompetence
Tricuspid stenosis
Mitral stenosis