

## Heart Sounds

S<sub>1</sub>: Closure of the atrioventricular valves (mitral/tricuspid)

S<sub>2</sub>: Closure of the semilunar valves (aortic/pulmonary)

S<sub>3</sub>: Peak of rapid ventricular filling in early diastole

S<sub>4</sub>: Atrial contraction in late diastole

Hearing heart sounds: Cats/dogs S<sub>1</sub>, S<sub>2</sub>    Horses/cows S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub>, S<sub>4</sub>

## Abnormal heart sounds

- Gallop sounds
- Split heart sounds
- Clicks (systolic, ejection)
- Arrhythmias - really a separate category

## Heart murmur timing

Systolic: Between S<sub>1</sub> S<sub>2</sub>

Diastolic: Between S<sub>2</sub> and next S<sub>1</sub>

Continuous: Occurs throughout cardiac cycle

Where can you hear each valve the best?

Mitral valve: L apical

Tricuspid valve: R apical

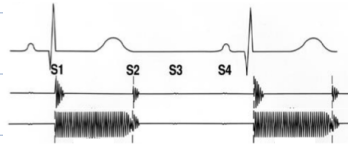
Aortic valve: L basilar

Pulmonary valve: L basilar

## Valve regurgitation

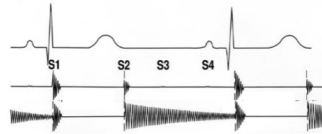
Mitral regurgitation: L Apical Systolic

Tricuspid regurgitation: Right apical Systolic



S<sub>1</sub>-S<sub>2</sub> Systolic

Aortic insufficiency: L basilar diastolic



S<sub>2</sub>-S<sub>1</sub> Diastolic

## Congenital Disease Heart Murmurs

Patent Ductus Arteriosus (PDA): L basilar continuous

failure of closure between pulm. valve + aorta

Right Ventricular Septal Defect (VSD) ≠ usually right systolic

- can vary apical vs basilar

Pulmonary stenosis (PS): left basilar systolic

Subaortic stenosis (SAS): left basilar systolic