**Annotated Study Guide for Cardiac Murmurs**

**Instructions**

Each of the cardiac topics you are responsible for knowing have been collected in the readings for the module and study guide. To help recall and master this material, you will annotate each topic in this study guide with notes, thoughts, and/or images as you perform the required readings at the start of this week. There will be prompts, but do not consider yourself constrained by these, as long as each topic is annotated in some way.

**Cardiac Murmurs**

* [Review of heart valves and circulation](http://www.heart.org/HEARTORG/Conditions/More/HeartValveProblemsandDisease/About-Heart-Valves_UCM_450699_Article.jsp#.W1SWpdJKjIU)

**Timing**

* Heard longer than heart sounds
* Palpate the carotid arterial pulse
* Systolic, diastolic, or continuous

**Intensity of Sound**

* Crescendo grows louder, decrescendo gets softer, crescendo-decrescendo, plateau

**Location**

* Where does the sound originate from?
* Listen to all areas- aortic, pulmonic, tricuspid, mitral

**Radiation**

* Where does the sound radiate to?
* Think about direction of the blood flow

**Intensity**

* Graded from I to VI
* Grade I – very faint
* Grade II- faint but heart immediately, louder than grade II
* Grade III- Moderately loud
* Grade IV- loud, thrill
* Grade V- heard with stethoscope partly off chest, thrill
* Grace VI- heard with stethoscope off chest, thrill
* Loud murmurs can have a thrill

**Pitch**

* What does it sound like- high, medium, low

**Quality**

* Musical, blowing, harsh, clicking, blowing

**Position & Maneuvers**

* Is there a change with position- sitting
* Is there a change with respiration
* Valsalva or standing will decrease murmurs except for hypertrophic cardiomyopathy & mitral valve prolapse

**Extra Sounds**

* S3 is associated with CHF
* S4 is associated with LVH

**Systolic Murmurs**

* Mitral regurgitation, aortic stenosis
* Benign murmurs

**Mitral Regurgitation**

* Heard at apex of heart
* Radiates to axilla
* Loud blowing & high pitched
* Holosystolic / pansystolic murmur

**Aortic Stenosis**

* Heard at 2nd ICS right side of the sternum
* Radiates to neck
* Harsh & noisy murmur
* Mid-systolic ejection murmur

**Diastolic Murmurs**

* Mitral stenosis, aortic regurgitation
* Diastolic murmurs are abnormal

**Mitral Stenosis**

* Heard at the apex
* Low pitch rumbling murmur
* Opening snap
* Little radiation
* Can be caused by rheumatic heart disease

**Aortic Regurgitation**

* Heard at 2nd ICS right of sternum
* High pitched blowing murmur, decrescendo

**Mitral Valve Prolapse**

* S2 click followed by a systolic murmur
* Loud & musical
* May be at higher risk for embolism, TIA, AF
* Diagnosed with echo & Doppler

**Continuous Murmurs**

* Begin during systole and continue into diastole
* Pericardial friction rub- scratching / scraping
* Patent Ductus Arteriosis (PDA)- machinery like, harsh
* Mammary souffle- heard during late 3rd trimester / lactation
* Where will you expect to hear mitral valve prolapse?
* Describe the sounds of aortic stenosis.
* Name 2 systolic murmurs.
* Name 2 diastolic murmurs.
* What is the most common murmur?
* What is the expected location to hear mitral regurgitation?

**Matching**

Match the intensity of the murmur to the Grade

Head with stethoscope not touching chest, thrill present Grade II

Loud, accompanied by a thrill Grade VI

Very faint, not heard if the person changes position Grade I

Usually readily heard, slightly louder, heard in all positions Grade III

Loud but not accompanied by a thrill Grade IV

Can be heard with stethoscope barely on chest, thrill present Grade V