

Cardiac Muscle Cheat Sheet

by kenny777 via cheatography.com/212877/cs/46354/

Anatomy Of The Heart

4 chambers:

left and right atria

left and right ventricles

4 heart valves:

right AV valve (tricuspid)

left AV valve (bicuspid)

pulmonary/semilunar valve

aortic/semilunar valve

Flow of Blood

Right receives oxygen-poor blood
atrium: from systemic circulation from
inferior and superior vena cavas
then pumps blood into right
ventricles from right AV valve

Right receives oxygen-poor blood ventricle: from right atrium then pumps blood through the pulmonary valve into pulmonary arteries

Left receives oxygen-rich blood from atrium: pulmonary circulation then into left and right pulmonary veins and pumps blood through the

left AV valve into the left

ventricle

Left ventricle:

receives oxygen-rich blood from left atrium then pumps blood through the **aortic valve** into the **aorta** which will go to the rest of the body

Purpose of Heart Valves

ensures one way blood flow

when pressure is greater behind valve it **opens**

when pressure is greater in front of valve it closes

has **chordae tendineae** which prevents valves from everting on itself during ventricular contraction

Heart Sounds & Definitions

murmurs:	abnormal heart sounds due to
	malfunctioning valves
stenotic	stiff narrow valve that does not
valve:	open completely, whistling
	sound
insuff-	valve that does not close
icient	properly, swishing sound

first heart sound (lub) -> closure of **AV valve** second heart sound (dup) -> closure of **semilunar valve**

Regulation Of Cardiac Output

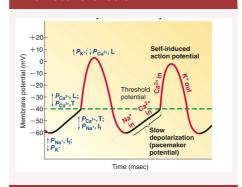
valve:

Heart regulated by parasympathetic rate: and sympathetic nervous system

Stroke volume of venous blood returning volume: to the ventricles

Cardiac Output = heart rate X stroke volume

AP of Pacemaker Cells



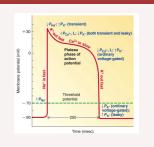
Key:

If - Funny Channels

T - Transient Type Calcium Channels

L - Long Lasting Calcium Channels

AP of Cardiac Cell



Pacemaker Definitions And Terms

Nodes:	specialized cardiac cells capable of pacemaker activity are grouped together to form nodes
Sinoatrial (SA) Node:	located in the wall of the right atrium, able to conduct 70 AP for minute
Atriovent- ricular (AV) Node:	located in the at the base of the right atrium, able to conduct 50 AP for minute
Bundle of HIS	located at the AV nodes and projects into the left and right ventricles

Purkinje small fibers that extend from
Fibers the Bundle of HIS, able to
conduct 30 AP for minute

Interatrial conducts pacemaker activity
Fathway from the right atrium to the left
atrium

Internodal conducts pacemaker activity
Pathway from the SA node to the AV
node



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Flow of AP

SA node -> AV node -> Bundle of HIS -> Purkinje Fibers

Heart Walls Definitions

Endoca thin layer of endothelial tissue rdium: lining the interior of each

chamber

Myocar middle layer of the heart, has

dium: intercalated disks with

desmosomes and gap-junctions

Epicar- thin external membrane covering dium: the heart and filled with **perica**-

rdial fluids to protect the heart

Electrocardiogram Waveforms

P-wave: *depolarization* of the atria

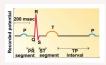
QRS depolarization of the

Complex: ventricles

T-wave: redepolarization of the

ventricles

Electrocardiogram



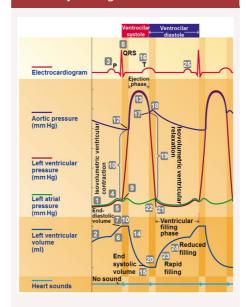
PR = AV Nodal Delay

ST = Time when ventricles are contracting & emptying

TP = Time when ventricles are relaxing &

filling

Cardiac Cycle Image



Mechanicals Events of the Cardiac Cycle (cont)

isovol- period of time during relaxation umetric when chamber remains **closed** ventri- and the chamber pressure cular **decreases**

relaxa-

tion:

Mechanicals Events of the Cardiac Cycle

Systole: periods of contraction & emptying

Diastole: periods of relaxing & filling

End-di- volume of blood at the end of

astolic diastole

volume:

isovolumetric ction where the chambers are
ventricular pressure increases

contra-

ction:

End-sy- the amount of blood remaining

stole at the end of systole

volume:

Stroke end-diastole volume minus end

volume: systole volume



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