

Cardiovascular system

The heart

Cardiology : the study of the heart

The *heart*, which is part of the cardiovascular system, pumps blood to every cell in the body. That job is critical, because without the oxygen and nutrients that the blood delivers, body cells quickly die.

The structure of the heart

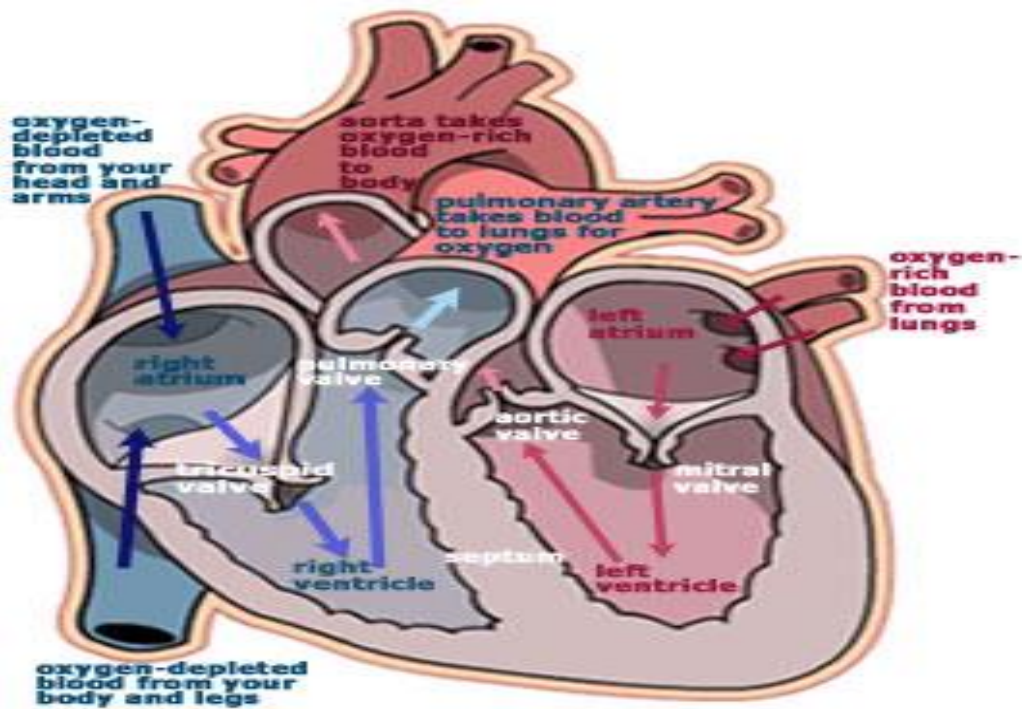
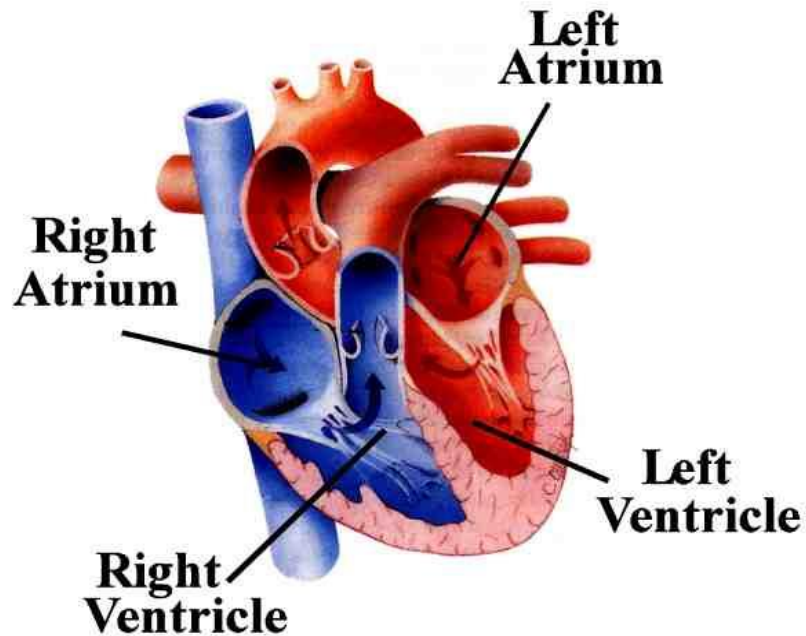
The heart is enclosed in three linings ; the *epicardium*, the *pericardium sac* and the *pericardium*.

There are four chambers in the heart, called the *right atrium*, the *right ventricle*, the *left atrium*, and the *left ventricle*.

The membrane forming the outer lining of the heart is called the *epicardium*, immediately beneath the epicardium is the *myocardium*, comprising the muscles, blood vessels, and nerve tissue that make up the bulk of the heart. The hearts inner surface is called the *endocardium*.

Blood flow through the heart

When the blood comes back to the heart after having delivered oxygen and other nutrients to the body cells, it re-enters the heart at the ***right atrium(RA)***. From there it moves into the ***right ventricle(RV)***, from which it is pumped into the lungs. After being recharged with oxygen, the blood moves back into the heart through the ***left atrium(LA)*** and into the ***left ventricle(LV)***, from which it is pumped out to the body.



Heart disorders and procedures

Electrical impulses emitted within the heart stimulate the heart to pump. When the electrical system malfunctions, the heart will beat too fast, too slow, at an irregular pace, or not at all, depending on the nature of the malfunction.

Arrhythmia is most often defined as an irregular heart beat at any speed. When the heart pumps too fast, the condition is called tachycardia. Also when the heart is pumping too slow the condition is called bradycardia. Tachycardia is also called **tachyarrhythmia**, and bradycardia is called **bradyarrhythmia**.

Disorders of the heart are diagnosed and treated by cardiologists, who work in the field of cardiology.

Term	Analysis	Meaning
atria	atrium	2 of the 4 heart chambers, composed of the right and the left atrium
Endocardium	Endo-(inside); cardium(heart)	The inner surface of the heart
Epicardium	Epi-(outside); cardium(heart)	The outer lining of the heart
Pericardium	Peri-(around); cardium(heart)	Serous Membrane lining the pericardial cavity
Atrioventricular valve Right Atrioventricular valve(<i>tricuspid valve</i>) left Atrioventricular valve(<i>mitral valve</i>)	Atri/o(atrium); ventricul(ventricle); -ar(adjectival suffix);valve	Connects the atrium to the ventricle
Myocardium	My/o(muscle); cardium(heart)	The heart muscle
Intraventricular septum (IVS)	Intra-(inside,between); ventricul(ventricle); -ar(adjectival suffix); septum(barrier)	A separation (barrier) between 2 ventricles of the heart

Common disorders

Term	Analysis	Meaning
arrhythmia	The prefix a-(against); rhythm; -ia(condition)	Abnormal rhythm; irregular heart beat
Atriomegaly	Atrio (atrium); -megaly(enlargement)	Enlargement of the atrium
Cardiac arrest	Card/i(heart); arrst(stopped)	Cessation of the heart

Cardiomyopathy	Card/i/o(heart); my/o(muscle); pathy(disease)	-	Disease of the heart muscle (myocardium)
Myocardial infarction (MI)	my/o(muscle); Card/i/o(heart)		Heart attack
Pericarditis	Peri-(around); (heart); itis(inflammation)	Card/i -	Inflammation of the pericardium
Valvulitis	Valvul/o(valve); itis(inflammation)	-	Inflammation of the valve

Diagnostic and treatment

<i>Term</i>	<i>Analysis</i>	<i>Meaning</i>
Electrocardiograph or electrocardiogram(ECG)	Electro-(electric); cardio(heart);-gram,- graph(writing)	A graphic trace of heart functions
Ventriculoscopy	Ventriculo(ventricle);- scopy(viewing)	Looking at the heart ventricle with an endoscope

Surgical procedures

<i>Term</i>	<i>Analysis</i>	<i>Meaning</i>
Atrioseptoplasty	Atri/o(atrium); sept/o(barrier); plasty(surgical repair)	- surgical repair of an atrial septum
Cardiorrhaphy	Cardio(heart); (suturing)	-rrhaphy Suturing of the heart
Pericardiotomy	Peri-(around); cardio(heart); tomy(cutting)	- Incision into the pericardium

The **troponin** (a protein that is released into the bloodstream when a heart attack occurs) when it is higher than normal level, it is an indicator of MI.

Common Abbreviations

<i>Abbreviation</i>	<i>Meaning</i>
ACV	Acute cardiovascular disease
CA	Cardiac arrest
CAD	coronary artery disease
CCU	Cardiovascular care unit
CHD	Cardiovascular Heart disease
CSU	Cardiovascular surgery unit
CVICU	Cardiovascular intensive care unit

The blood and blood vessels

<i>Term</i>	<i>Meaning</i>
Hemoglobin	The protein that gives the blood its red color
Erythrocytes	Red blood cells
Leukocytes	White blood cells
Platelets	A formed element found in the blood, which is important in the coagulation process
Immunoglobulin	The blood plasma proteins that are also known as antibodies
Artery	Carry blood away from the heart
Veins	Carry blood back to the heart
Capillary	The smallest but most numerous of the blood vessels, responsible for transferring nutrients directly to the cell
Arteriole	The smallest of the arteries, connecting with the capillaries
Superior vena cava (SVC)	A large venous vessel that drains blood from the upper body to be transported to the heart
Aorta	the largest blood vessel in the body, It starts and arches out at the left ventricle.
Angiostenosis	The narrowing of the blood vessel
Vasculopathy	Any disease of the blood vessels
Aneurysm	A bulge in any artery or a heart chamber
High density lipoprotein (HDL)	“good cholesterol”; picks up dead

	cholesterol from the cells
low density lipoprotein (LDL)	“bad cholesterol”; delivers cholesterol to the cells
Angiography	Radiography of a blood vessel
Arteriosclerosis	Hardening of the arteries
Hemorrhage	Discharge of blood
Hemophilia	Congenital disorder, causing excessive bleeding