

Cardiology

Cardiologist	
Occupation	
Names	Doctor, Medical Specialist
Type	Specialty
Activity sectors	Medicine
Description	
Education required	Doctor of Medicine
Fields of employment	Hospitals, Clinics
Average salary	USD \$400,000.00 a year (M.D., D.O.)

Cardiology (from Greek καρδίᾱ, *kardiā*, "heart"; and -λογία, *-logia*) is a medical specialty dealing with disorders of the heart. The field includes diagnosis and treatment of congenital heart defects, coronary artery disease, heart failure, valvular heart disease and electrophysiology. Physicians specializing in this field of medicine are called **cardiologists**. Cardiologists should not be confused with cardiac surgeons, cardiothoracic and cardiovascular, who are surgeons who perform cardiac surgery via sternotomy - open operative procedures on the heart and great vessels. The term *cardiology* is derived from the Greek word καρδιά (transliterated as *kardia* and meaning *heart* or *inner self*).

The Cardiac Muscle

Cardiac pacemaker (Electrical system of the heart)

- Electrical conduction system of the heart
 - Action potential
 - Ventricular action potential
- Sinoatrial node
- Atrioventricular node
- Bundle of His
- Purkinje fibers
- Heart Attack (Myocardial Infarction)

Basic cardiac physiology

- Systole
 - Diastole
 - Heart sounds
 - Preload
 - Afterload
 - Kussmaul's signature
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Disorders of the coronary circulation

- Atherosclerosis
- Restenosis
- Coronary heart disease (Ischaemic heart disease, Coronary artery disease)
- Acute coronary syndrome
 - Angina
 - Myocardial infarction (Heart attack)

Cardiac arrest

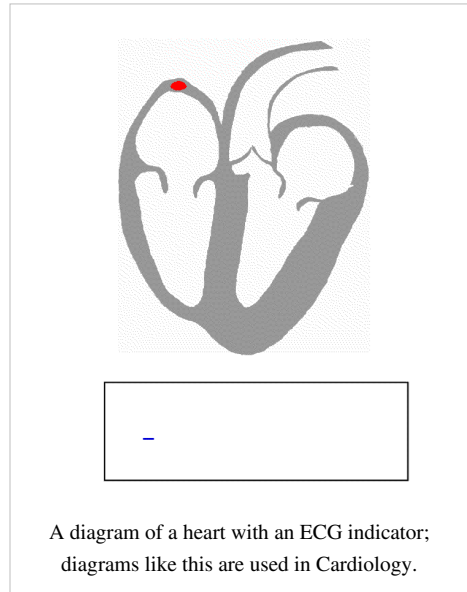
- Ventricular fibrillation
- Pulseless electrical activity
- Asystole
- Sudden cardiac death (The abrupt reduction or cessation of blood flow to the myocardium, leading to death)

Treatment of cardiac arrest

- Cardiopulmonary resuscitation (CPR)

Disorders of the myocardium (muscle of the heart)

- Cardiomyopathy
 - Ischemic cardiomyopathy
 - Nonischemic cardiomyopathy
 - Amyloid cardiomyopathy
 - Hypertrophic cardiomyopathy (HCM)
 - Hypertrophic obstructive cardiomyopathy (HOCM) (Idiopathic hypertrophic subaortic stenosis (IHSS))
 - hypertrophic cardiomyopathy
 - Dilated cardiomyopathy
 - Alcoholic cardiomyopathy
 - Tachycardia induced cardiomyopathy
 - Takotsubo cardiomyopathy (Transient apical ballooning, stress-induced cardiomyopathy)
 - Arrhythmogenic right ventricular dysplasia (Arrhythmogenic right ventricular cardiomyopathy)
 - Restrictive cardiomyopathy
- Congestive heart failure
 - Cor pulmonale
- Ventricular hypertrophy
 - Left ventricular hypertrophy
 - Right ventricular hypertrophy
- Primary tumors of the heart
 - Myxoma
- Myocardial rupture



Disorders of the pericardium (outer lining of the heart)

- Pericarditis
- Pericardial tamponade
- Constrictive pericarditis

Disorders of the heart valves

- Aortic valve disorders
 - Aortic insufficiency
 - Aortic stenosis
 - Aortic valve replacement
 - Aortic valve repair
 - Aortic valvuloplasty
- Mitral valve disorders
 - Mitral valve prolapse
 - Mitral regurgitation
 - Mitral stenosis
 - Mitral valve replacement
 - Mitral valve repair
 - Mitral valvuloplasty
- Pulmonary valve disorders
 - Congenital pulmonic stenosis
- Tricuspid valve disorders

Disorders of the electrical system of the heart (Cardiac electrophysiology)

- Tachycardia
- Cardiac arrhythmias
 - Supraventricular tachycardia (Fast rhythms that originate above the ventricles)
 - Atrial fibrillation
 - Atrial flutter
 - Atrial tachycardia
 - Sick sinus syndrome
 - AV nodal reentrant tachycardia (AVNRT)
 - AV reentrant tachycardia (AVRT)
 - Bigemin
 - Premature ventricular contraction
 - Ventricular tachycardia
 - Torsades de pointes
 - Ventricular fibrillation
 - Bundle branch block
 - Left bundle branch block
 - Right bundle branch block
 - Heart block
 - First degree AV block
 - Second degree AV block

- Bifascicular block
- Trifascicular block
- Third degree AV block
 - Lev's disease
- Specific diseases of the electrical system of the heart
 - Brugada syndrome
 - Long QT syndrome
 - Andersen-Tawil syndrome
 - Romano-Ward syndrome
 - Jervell and Lange-Nielsen syndrome
 - Short QT syndrome
 - Wolff-Parkinson-White syndrome (WPW syndrome)

Inflammation and infection of the heart

- Endocarditis
 - Rheumatic heart disease
- Myocarditis
- Pericarditis
- Kawasaki

Congenital heart disease

- Atrial septal defect
- Ventricular septal defect
- Patent ductus arteriosus
- Bicuspid aortic valve
- Tetralogy of Fallot
- Transposition of the great vessels (TGV)
- Hypoplastic left heart syndrome
- Truncus Arteriosus

Diseases of blood vessels (Vascular diseases)

- Vasculitis
- Atherosclerosis
- Aneurysm
- Varicose veins
- Economy class syndrome
- Diseases of the aorta
 - Coarctation of the aorta
 - Aortic dissection
 - Aortic aneurysm
- Diseases of the carotid arteries
 - Carotid artery disease
 - Carotid artery dissection

Procedures done for coronary artery disease

- Percutaneous coronary intervention
 - Atherectomy
 - Angioplasty (PTCA)
 - Stenting
- Coronary artery bypass surgery (CABG)
- Enhanced external counterpulsation (EECP)

Devices used in cardiology

- Stethoscope
- Devices used to maintain normal electrical rhythm
 - Pacemaker
 - Defibrillator
 - Automated external defibrillator
 - Implantable cardioverter-defibrillator
- Devices used to maintain blood pressure
 - Artificial heart
 - Heart-lung machine
 - Intra-aortic balloon pump
 - Ventricular assist device

Diagnostic tests and procedures

- Blood tests
- Echocardiogram
- Cardiovascular Magnetic Resonance
- Cardiac stress test
- Auscultation (Listening with the Stethoscope)

Electrocardiogram (ECG or EKG)

- QT interval
- Osborn wave
- Ambulatory Holter monitor
- Electrophysiology study
 - Programmed electrical stimulation
- Sphygmomanometer (Blood pressure cuff)
- Cardiac enzymes
- Coronary catheterization
 - Myocardial Fractional Flow Reserve (FFR_{myo})
 - IVUS (IntraVascular UltraSound)

Cardiac pharmaceutical agents

The followings are medications commonly prescribed in cardiology:

- Antiarrhythmic agents
 - Type I (sodium channel blockers)
 - Type Ia
 - Quinidine
 - Type Ib
 - Lidocaine
 - Phenytoin
 - Type Ic
 - Propafenone
 - Type II (beta blockers)
 - Metoprolol
 - Type III (potassium channel blockers)
 - Amiodarone
 - Dofetilide
 - Sotalol
 - Type IV (slow calcium channel blockers)
 - Diltiazem
 - Verapamil
 - Type V
 - Adenosine
 - Digoxin
 - ACE inhibitors
 - Captopril
 - Enalapril
 - Perindopril
 - Ramipril
 - Angiotensin II receptor antagonists
 - Candesartan
 - Eprosartan
 - Irbesartan
 - Losartan
 - Telmisartan
 - Valsartan
 - Beta blocker
 - Calcium channel blocker
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See also

- Interventional cardiology
- Clinical cardiac electrophysiology
- American Heart Association
- National Heart Foundation of Australia

External links

- Cardiology News ^[1]
- Cardiology in Bangladesh ^[2]
- European Society of Cardiology ^[3]
- U.S. National Institute of Health (NIH) : Heart and Circulation ^[4]
- American College of Cardiology ^[5]
- Virtual Cardiac Centre ^[6] - information from the field of Cardiology.
- Cardiovascular Physiology ^[7] - basic concepts in cardiology.
- Preventive Cardiology ^[8]
- A cardiac atlas using CMR images ^[9]

[10]- Cardiology PPT

References

- [1] <http://www.cardiologytoday.com/>
- [2] <http://www.cardiobd.com/>
- [3] <http://www.escardio.org>
- [4] <http://health.nih.gov/search.asp/10>
- [5] <http://www.acc.org>
- [6] <http://www.virtualcardiaccentre.com>
- [7] <http://www.cvphysiology.com>
- [8] http://www.lejacq.com/Journal_PC.cfm?CFID=3025482&CFTOKEN=85552068
- [9] <http://atlas.scmr.org/>
- [10] <http://www.slideworld.org/slides.aspx/Cardiology>

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