



CARDIAC ANATOMY

- *Chambers of the heart*
- *Flow of blood*
- *Valvular anatomy*
- *Basic coronary and venous anatomy*

BASICS OF ELECTROPHYSIOLOGY

- *Myocardial cell action potential*
- *Pacemaker cell action potential*

PROPERTIES OF THE CONDUCTION SYSTEM I

- *Sinoatrial node properties*
- *Introducing the P wave*
- *Atrioventricular node properties*
- *Introducing the PR interval*

PROPERTIES OF THE CONDUCTION SYSTEM II

- *Properties of the His bundle & bundle branches*
- *Going deeper into the PR interval*
- *Properties of the Purkinje system*
- *Introducing the “QRS” complex*
- *Introducing the ST segment & T waves*

ECG VECTORS AND 12 LEAD PLACEMENT

- *Basic waveform physics*
- *12 lead ECG placement*
- *Vector-anatomy correlation*
- *Introducing normal 12 lead waveforms*

FEATURES OF THE 12 LEAD ECG

- *Determining axis deviation*
- *Determining the rhythm*
- *Determining the rate*
- *Correlation between the ECG and Cardiac anatomy*

MANIFESTATIONS OF SINUS NODE DISEASE I

- *Sinus bradycardia*
- *Sinus node dysfunction*
- *Tachy-Brady Syndrome*
- *Sick sinus syndrome*
- *Sinus arrhythmias*

MANIFESTATIONS OF SINUS NODE DISEASE II

- *Sinoatrial Exit Block type I & II*
- *Junctional Rhythm*
- *Isorhythmic AV dissociation*

**ABNORMAL IMPULSE CONDUCTION I:
SUPRAHISIAN AV BLOCKS**

- *The dynamic AV node & PR interval*
- *1st degree AV conduction delay*
- *2nd degree AV block Mobitz 1*

**ABNORMAL IMPULSE CONDUCTION II:
INFRANODAL AV BLOCKS**

- *2nd degree AV block Mobitz II*
- *3rd degree AV Block (Complete)*

BUNDLE BRANCH BLOCKS

- *Left bundle branch anatomy*
- *Left bundle branch block*
- *Right bundle branch anatomy*
- *Right bundle branch block*

FASCICULAR BLOCKS

- *Fascicular anatomy & characteristics*
- *LAFB ECG characteristics*
- *LPFB ECG characteristics*
- *“Bi-fascicular block” & “Tri-fascicular block”*

CHAMBER ENLARGEMENTS & THE ECG

- *Right atrial enlargement*
- *Left atrial enlargement*
- *Right ventricular enlargement*
- *Left ventricular enlargement*

PACED ECG BASICS

- *Basic components of the pacemaker*
- *Single chamber pacemaker*
- *Dual chamber pacemaker*
- *Bi-ventricular Pacemaker*
- *Pacing spikes and the ECG*

ATRIAL ECTOPY & ATRIAL FLUTTER

- *Introducing atrial ectopy*
- *Typical atrial flutter*
- *Atypical atrial flutter*

ATRIAL FIBRILLATION

- *ECG characteristics of AF*
- *Risk factors of atrial fibrillation*
- *Definitions of atrial fibrillation*
- *Disease progression of atrial fibrillation*

FOCAL ATRIAL TACHYCARDIA

- *Mechanisms of focal atrial tachycardia*
- *Characteristics of focal atrial tachycardia*
- *Distinguishing between FAT, flutter and AF*

RE-ENTRANT SUPRAVENTRICULAR TACHYCARDIA

- *Introduction to AVJRT*
- *ECG characteristics of AVJRT*
- *Introduction to AVRT*
- *ECG characteristics of AVRT*
- *Distinguish between different atrial arrhythmias*
- *Review of atrial tachyarrhythmias*

VENTRICULAR ECTOPIC BEATS

- *Causes of VEB's*
- *Symptoms of VEB's*
- *Management of VEB's*
- *VEBs and the ECG*

VENTRICULAR TACHYCARDIA

- *Causes of VT*
- *Symptoms of VT*
- *Management of VT*
- *Monomorphic VT & the ECG*
- *Polymorphic VT & the ECG*

VENTRICULAR FIBRILLATION

- *Pathophysiology & causes of VF*
- *Management and prevention of VF*

PATHOPHYSIOLOGY OF CORONARY ARTERY DISEASE

- *Coronary atherosclerosis*
- *Stable angina*
- *Unstable angina*
- *Plaque rupture*
- *NSTEMI vs STEMI*

ANATOMY OF THE ST SEGMENT

- *Defining the J point*
- *Measuring the ST segment*
- *Causes of ST depression*
- *Causes of ST elevation*

ACUTE MYOCARDIAL INFARCTION I

- *Treatments & outcomes*
- *Inferior STEMI: anatomy, causes, ECG changes*
 - *Understanding reciprocal depression*
 - *Related Brady-arrhythmias*
- *Lateral STEMI: anatomy, causes, ECG changes*
 - *Reciprocal ST depression*
 - *Related Brady-arrhythmias*

ACUTE MYOCARDIAL INFARCTION II

- *Anterior STEMI: anatomy, clinical presentation, causes, ECG changes*
 - *Reciprocal ST depression*
 - *Defining proximal anterior STEMI*
 - *Related Bradyarrhythmias*
- *Left Main Coronary Artery STEMI:*
 - *12lead ECG features*
 - *Related arrhythmias*

NSTEMI

- *Definition & clinical presentation*
- *NSTEMI type I*
- *ECG features of NSTEMI*
- *NSTEMI type II*
- *Treatments*

FEATURES OF OLD INFARCTS

- *Pathological Q waves*
- *Loss of R waves*
 - *R wave progression*
- *Persistent T wave inversions*
- *Ventricular Aneurysm*
- *RV infarct*
- *LV infarct*
- *VSD*