

Lectures covering concentrated Topics in Emergency Medicine (TEMs)

Section	Week	Title	Topics
Electrocardiography	103	Cardiac Anatomy and Electrophysiology	Heart structure Gross Specific Coronary circulation Conduction system Valvular function Cellular function Ionic cell-membrane channels Resting voltage potentials Action potentials and depolarization Repolarization Automaticity and pacemaker cells Conduction Mechanical contraction Vector electrocardiography Classical ECG waveforms Electrode misplacement Artifact
	104	Approach to ECG Interpretation	Rate Rhythm Axis Intervals Wave morphologies
	105	Normal ECG Variants	Pediatric ECG Persistent juvenile pattern Benign early repolarization Athlete's heart Nonspecific T-wave patterns Dextrocardia
	106	Chamber Enlargement	P wave Normal Abnormal Morphology Axis Focus QRS complex Normal Abnormal amplitude Large Small
	107	Intraventricular Conduction Disturbances [03.04.02(b)]	Prolonged duration Unifascicular blocks Right bundle branch block (RBBB) Left anterior fascicular block (LAFB) Left posterior fascicular block (LPFB) Bifascicular blocks RBBB + LAFB RBBB + LPFB Left bundle branch block (LBBB) Trifascicular blocks Nonspecific intraventricular conduction delay

	108	Increased Automaticity and Tachydysrhythmiae [03.04]		Regular Rhythm	Irregular Rhythm
			Narrow QRS	Sinus tachycardia Inappropriate ST Atrial tachycardia Atrial flutter Junctional tach Fascicular tach	PAC, PJC, PVC Atrial fibrillation SV tachcardias w/ variable blocks Multifocal atrial tachycardia
			Wide QRS	Ventricular tach [monomorphic] Ventricular flutter Accelerated idio- ventricular tach Other	Ventricular tach [polymorphic] Torsades de Pointes Ventricular fibrillation
	109	Reentrant Atrial Dysrhythmiae [03.04.01(b)]	SA-nodal reentrant tachycardia Atrial flutter/fibrillation spectrum Patterns of AV conduction Termination		
	110	Reentrant Junctional Dysrhythmiae [03.04.01(b)]	AV-nodal reentrant tachycardia Slow-Fast Fast-Slow Atrioventricular bypass/reentrant tachycardia		
	111	Reentrant Ventricular Dysrhythmiae [03.04.01(a)]	Ventricular tachycardia Left Right Torsades de Pointes Ventricular flutter Ventricular fibrillation		
	112	Ventricular Tachycardia <i>versus</i> Wide-Complex Supraventricular Tachycardia [03.04.01]	Aberrant conduction Bypass Nodal Infranodal Approach to differentiation		
	113	Decreased Automaticity and Bradydysrhythmiae [03.04]	Sinus slowing Sinus pause Sinus arrest SA exit block Escape rhythms Asystole		
	114	Atrioventricular Blocks [03.04.02(a)]	Type 1st-degree AV block 2nd-degree AV block Mobitz Type I Mobitz Type II 3rd-degree AV block Location AV-nodal Infranodal		
	115	Artificial Pacemakers	Functional concepts Modes ECG wave morphology by chamber Evaluating function Sensing Capturing Interventions Magnets Vagal maneuvers		

	116	Progression of ECG Changes with Ischemia and Infarction [03.05.07]	Electrophysiological changes T-wave changes ST-segment changes R-wave progression Q waves Confounding conditions Left bundle-branch block Left-ventricular hypertrophy Ventricularly paced rhythms
	117	Anatomical & Reciprocal Patterns of Ischemia and Infarction [03.05.07]	Standard ECG leads Anterior LV Lateral LV Inferior LV RV Posterior LV Additional ECG leads Right-sided leads Posterior left-sided leads Novel leads
	118	Using ECGs in Decision-Making [03.04; 03.05]	Dysrhythmiae Rhythm monitors 12-lead tracings Morphological changes Out-of-hospital tracings Serial ED tracings and trend monitoring Stress testing
	119	Cardiomyopathies and Inflammatory Disorders	Cardiomyopathy [03.05.03] Dilated Hypertrophic Restrictive Inflammation Endocarditis [03.07] Non-rheumatic Rheumatic Myocarditis [03.05.08] Pericarditis [03.06.02] Non-ischemic Post-infarction
	120	ECG Changes Reflecting Other Cardiopulmonary Disorders	Cardiac Ventricular "aneurysm" pattern Valvular disorders [03.10] Pulmonic Mitral Aortic Long QT syndromes [03.04.03] Cardiac transplant Pericardial effusion Cardiac tamponade [03.06.01; 18.01.02(f)] Cardiac trauma [18.01.02(b1)] Pulmonary Pneumothorax [16.02.07; 18.01.02(g)] COPD [16.04.04] Pulmonary hypertension Cor pulmonale [03.05.02(a)] Pulmonary embolism [16.06.02]

	121	ECG Changes Reflecting Metabolic and Toxicological Disorders	Electrolyte disorders Potassium [05.03.03] Calcium [05.03.01] Magnesium [05.03.05] Endocrinological disorders Myxedema [05.08.02] Obesity Hypothermia [06.06.02(b)] Toxicological [17.01.13] Digitalis QT prolonging agents Sodium-channel blocking agents
	122	ECG Changes Reflecting Other Miscellaneous Disorders	Gastrointestinal Immunological Amyloidosis Polymyositis and dermatomyositis [11.04.01] Rheumatoid arthritis [09.03.03] Sarcoidosis [09.05] Scleroderma [09.01.04] Systemic lupus erythematosus [09.01.05] Vasculitides [09.01.06] Infectious Lyme disease [10.05.02] Chagas disease Neurological CNS disorders [12.11] Neuromuscular disorders [12.07]