

Arrhythmia	Causes	ECG
Sinus Tachycardia	increased sympathetic tone Fever, Pain, Dehydration, Hypovolemia, Anemia	Normal but high HR
Sinus Bradycardia	normally in athletes at rest Vagal stimulation	Normal but low HR
Sinus Arrhythmia (benign) Normally; heart rate increases with inspiration & decreases with expiration	R-R interval variation (deviation exceeds 0.12 sec)	R-R interval variation
Phenomenon of Re-entry	dilated hearts (prolonged pathway) blockage of the Purkinje system, ischemia of the muscle or high blood potassium levels (Decreased rate of conduction) Drugs (shortened refractory period)	
Ventricular Fibrillation	Sudden electrical shock of the heart Ischemia of the heart or conduction system or both arrhythmia Reentry phenomenon	Bizarre no regular rhythm of any type
Atrial fibrillation	atrial enlargement	either no P waves are seen or only a fine, high frequency, very low voltage wavy record QRS-T complexes are normal in shape but are irregular
Atrial flutter	re-entry circuit within the right atrium	P waves are strong (saw tooth appearance) QRS-T complex follows an atrial P wave only once for every two to three beats of the atria, giving a 2:1 or 3:1 rhythm
Atrioventricular (AV) Block	Ischemia Compression by scar tissue or by calcified portions Inflammation Extreme stimulation of the heart by the vagus nerve	
First Degree Heart Block	coronary artery disease, acute rheumatic carditis,	the PR interval increases to greater than 0.22

	digoxin toxicity or electrolyte disturbances	second
Type I (Wenckebach periodicity)	abnormality of the A-V node	Pattern: Progressive lengthening of the PR interval and then failure of conduction of an atrial beat (dropped) followed by a conducted beat with a shorter PR interval and then a repetition of this cycle
Type II (Fixed ratio blocks)	abnormality of the bundle of His-Purkinje system	fixed number of non-conducted P waves for every QRS complex beats (2:1), or one conducted atrial beat and then two (3:1) or three (4:1) non-conducted beats
Third degree block	acute phenomenon in patients with myocardial infarction or it may be chronic, usually due to fibrosis around the bundle of His	<ol style="list-style-type: none"> 1. Regular P-P interval 2. Regular R-R interval 3. Lack of an apparent relationship between the P waves and QRS complexes 4. Atrial rate is higher than ventricular rate
Stokes- Adams Syndrome	The total block comes and goes Detected by: Holter monitor	
Axis Deviation	<p>Conditions that cause left angulation of the heart and left axis deviation:</p> <ol style="list-style-type: none"> 1. Deep expiration 2. Lying down 3. Obesity <p>Conditions that cause right angulation of the heart and right axis deviation:</p> <ol style="list-style-type: none"> 1. Deep inspiration 2. Standing up <p><u>Pathology</u> <u>Hypertrophy of One Ventricle</u> the axis of the heart shifts toward the hypertrophied ventricle</p>	Prolonged QRS + high voltage QRS (HYPERTROPHY)
Left bundle branch block	Branch block	left axis deviation and widening of the QRS

		complex
Right bundle branch block	Branch block	right axis deviation and widening of the QRS complex
MI		ST segment changes but not permanent changes
Angina		ST segment changes may be induced by making the patient exercise (effort angina)
Pathological Q wave	ongoing or prior myocardial infarction	Q waves: >.04 sec >2 mm deep >25% of depth of QRS complex