Basic Rules for ECG Interpretation

Rhythm	Regularity	Rate	P Wave	PRI	QRS
Normal Sinus	Regular, constant R-R	A/V rate = between 60-100	Ps uniform. One P for every QRS	Between .12-.20 & constant	QRS < or = .12
Sinus Bradycardia	Regular	A/V rate = < 60 bpm	Ps uniform. One P for every QRS	Between .12-.20 & constant	QRS < or = .12
Sinus Tachycardia	Regular	A/V rate = > 100 bpm, usually between 100-160 bpm	Ps uniform. One P for every QRS	Between .12-.20 & constant	QRS < or = .12
Sinus Arrhythmia	Irregular, R-R interval varies with respiration	A/V rate = usually between 60-100 bpm but can be slower	Ps uniform. One P for every QRS	Between .12-.20 & constant	QRS < or = .12
Atrial Flutter	Usually Regular, Ventricular rate will be regular if A/V node conducts in consistent pattern	Atrial 250-350 bpm. Ventricular will vary based on impulses conducted	Seen as "Flutter" waves, have sawtooth appearance	Cannot be measured	QRS < .12
Atrial Fibrillation	Grossly Irregular	If ventricular rate < 100 bpm rhythm said to be "controlled", if > 100 bpm considered rapid ventricular response	No discernable P waves, fibrilatory waves or grossly chaotic undulations of baseline	Cannot be measured	QRS < .12
Premature Atrial Contraction	Usually regular except ectopic beat	Depends on underlying rhythm	P wave of premature beat will have different morphology of others. Usually notched or flat. May be lost within T wave of preceding complex	Between .12-.20 but can be prolonged. PRI of ectopic will be different from PRI of other complexes	QRS < .12
Premature Junctional Contraction	Ectopic interrupts the underlying rhythm's regularity, R-R will be irregular	Depends on underlying rhythm	P waves may be before, after or hidden by QRS complex, if visible will be inverted	If precedes QRS then < .12. If behind or during QRS no PRI measurement can be given.	QRS < .12
Junctional Escape Rhythm	Regular, R-R constant.	A/V rates = Rate =inherent junction rate 40- 60 bpm	P waves may be before, after or lost in QRS complex, if visble will be inverted	If precedes QRS then < .12. If behind or during QRS no PRI measurement can be given.	QRS < .12
Accelerated Junctional Rhythm	Regular, R-R constant.	A/V rates = Usually between 60-100. Not a true tachycardia because not > 100 bpm	P waves may be before, after or lost in QRS complex, if visble will be inverted	If precedes QRS then < .12. If behind or during QRS no PRI measurement can be given.	QRS <. 12
Junctional Tachycardia	Regular, R-R constant.	A/V rates = Usually between 100-180 bpm.	P waves may be before, after or hidden by QRS complex, if visble may be inverted	If precedes QRS then < .12. If fals behind or during QRS no PRI measurement can be given.	QRS < .12
Premature Ventricular Contraction	Ectopic beat interrupts the regularity of underlying rhythm	Depends on rate of underlying rhythm	Ectopic not preceded by P wave. May see coincidental P near PVC but is dissociated	No PRI	At least .12, configuration different from underlying QRS complexes. T wave frequently opposite direction from QRS complex
1st degree block Not a true block because each impulse conducted through vent.	Based on underlying rhythm	Depends on rate of underlying rhythm	P waves upright & Uniform with every P wave followed by QRS complex	PRI will always be constant across strip & > .20	QRS < .12
2nd degree block Type I, Mobitz I or Wenckebach	R-R irregular Cyclic pattern of grouped beats	Atrial rate usually normal. Ventricular rate may be bradycardia range.	P waves upright & uniform and always more P waves than QRS complexes.	PRI gets progressively longer, until one P wave not followed by QRS. After blocked beat cycle repeats.	QRS < .12
2nd degree block Type II, Mobitz II	If conduction consistent, R-R will be regular. If conduction varies, R-R will be irregular	Atrial rate usually normal. Ventricular rate may be bradycardia range.	P waves upright & uniform and always more P waves than QRS complexes.	PRI on conducted beats constant & may be longer than .20	QRS < .12
3rd degree or CHB	P-P regular & R- R regular but not related	Atrial usually normal range. Ventricular will be slower	P waves upright & uniform and always more P waves than QRS complexes	Totally inconsistent. No relationship between P waves & QRS	QRS < .12 if focus junctional, QRS .12 or > if focus ventricular
Atrial Tachycardia	Regular, R-R constant	Usually 150-250 bpm	P wave in front of every QRS, the configuration may be flattened or notched. P waves can be lost in the T waves	Between .12-.20 & constant. Difficult to measure if P obscured by T wave	QRS < .12
Ventricular Tachycardia	Usually Regular, but may be slightly irregular	Atrial cannot be determined. Ventricular range 150-250 bpm considered slow VT. > 250 bpm called Ventricular flutter	None seen	No PRI	Often difficult to differentiate the QRS from the T wave. Measures @ least .12 or >
Ventricular Fibrillation	Cannot determine regularity. Baseline chaotic	Cannot be determined with no discernible complexes to measure	No discernible P waves	No PRI	No discernible QRS complex
Idioventricular	Usually regular, slows as heart dies	Ventricular rate usually 20-40 but may drop below 20 bpm	No P waves	No PRI	QRS is wide measuring @ least .12 or >
Asystole	Cannot determine	No rate	No P waves	No PRI	Straight line no QRS complexes