

Arrhythmia characteristics

Rhythm	P wave rate (bpm)	P wave rhythm	P wave configuration	QRS complex rate	QRS complex rhythm	QRS configuration	P-QRS relationship
Sinus	Normal	Regular	Normal	Same as <i>P</i>	Regular	Normal	1:1
Sinus bradycardia	<Normal	Regular	Normal	Same as <i>P</i>	Regular	Normal	1:1
Sinus tachycardia	>Normal	Regular	Normal	Same as <i>P</i>	Regular	Normal	1:1
Sinus arrhythmia	Normal	Regularly Irregular	Normal or wandering	Same as <i>P</i>	Irregular	Normal	1:1
Accelerated idioventricular rhythm	Normal	Regular	Normal (often buried in QRS)	70-150	Fairly regular; may be irregular	Wide	Dissociated; more QRSs than Ps
Atrial flutter	>350	Regular	Positive (sawtooth)	Less than <i>P</i> wave rate	Regular or irregular	Normal	More Ps than QRSs
Atrial fibrillation	>500	Irregularly Irregular	None to baseline undulation (f waves)	Less than <i>P</i> wave rate (100-280)	Irregular	Normal	No <i>P</i> waves; more undulations than QRSs
Atrial standstill	absent	absent	absent	Escape rate	regular	Normal if AV node escape	No <i>P</i> waves
Hyperkalemia	Normal if present	regular or absent	Tall and spiked if present, may be absent	70-150	Fairly regular; may be irregular	Wide	No or missing <i>P</i> waves
Left Bundle Branch Block	normal	regular	normal	normal	normal	Wide, tall R	1:1
Pre-excitation re-entry	>200	Regular	Short PR interval	>200	regular	Slurring of R wave (up)	1:1
Right Bundle Branch Block	normal	regular	normal	normal	regular	Wide, deep S wave	1:1
SA block	<normal	Regularly Irregular (skipped <i>P</i> waves multiple of PP interval)	Normal when present	Less than <i>P</i> wave rate (no QRS when <i>P</i> is skipped)	Regularly Irregular	Normal	More QRS than <i>P</i>
Second-degree AV block	Normal	Regular	Normal	< <i>P</i> wave rate	Irregular	Normal or wide	More Ps than QRSs
Sick Sinus Syndrome	Periods <normal, periods >normal	Grossly Irregular	normal	Variable from asystole to tachycardia	Grossly Irregular	normal	1:1 most of the time, may be escape rhythms
Sinus arrest	absent	absent	absent	absent	absent	absent	Followed by escape beat, or death

Rhythm	P wave rate (bpm)	P wave rhythm	P wave configuration	QRS complex rate	QRS complex rhythm	QRS configuration	P-QRS relationship
Supraventricular tachycardia	>Normal	Regular	Positive, negative, absent, or buried	Same as P	Regular	Normal	1:1
Third-degree AV block	Normal	Regular	Normal	20-60	Regular	Normal or wide	Dissociated; more Ps than QRSs; irregular P-R interval
Ventricular fibrillation	Normal	Regular	Not discernible	>400	Grossly Irregular	No QRS complexes	Dissociated; no QRSs
Ventricular flutter	Normal	Regular	Not discernible	>350	Regular	Sine wave	Dissociated; more QRSs than Ps
Ventricular Premature Contractions	absent	absent	absent	variable	variable	Wide and bizarre. Deep S wave then upright T wave from RV; tall R wave then inverted T wave from LV.	Dissociated; onset prior to normal P wave; followed by compensatory pause.
Ventricular tachycardia	Normal	Regular	Normal (often buried in QRS)	150-350	Regular or Irregular	Wide	Dissociated; more QRSs than Ps

The Lown grading system for ventricular arrhythmias

Grade Criteria

- 0 No VPCs
- 1 <30 VPCs/hr
- 2 >30 VPCs/hr
- 3 VPCs with more than one configuration (multiform)
- 4A Two consecutive VPCs (pair or couplet)
- 4B Three or more consecutive VPCs (ventricular tachycardia)
- 5 R on T (fast rate)