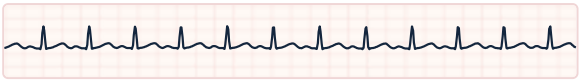
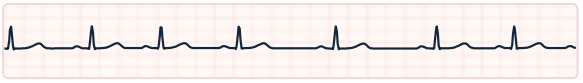
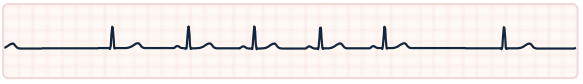
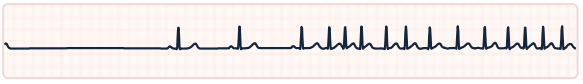
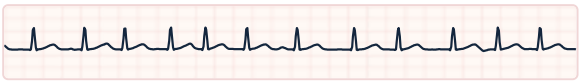
Rhythm recognition

● Draft — pending owner review

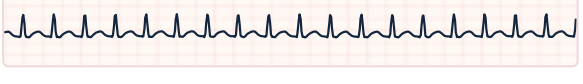
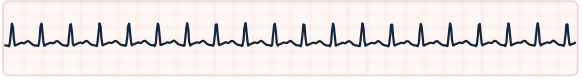
SINUS

Normal sinus rhythm		The rate is 60–100/min and regular, with an upright P wave and a constant normal PR before every narrow QRS.
Sinus bradycardia		Normal upright P waves precede every narrow QRS with a constant PR, but the rate is below 60/min.
Sinus tachycardia		Upright P waves precede every narrow QRS with a constant PR, and the regular rate is above 100/min.
Sinus arrhythmia		Identical sinus P waves with a constant PR precede every QRS while the P–P interval waxes and wanes cyclically.
Sinus pause / arrest		An entire P–QRS–T is missing and the gap is not an exact multiple of the underlying P–P interval.
Sick sinus syndrome (tachy-brady) DRAFT		Slow sinus beats alternate with bursts of atrial fibrillation, and each burst ends in a long pause before the next sinus beat.

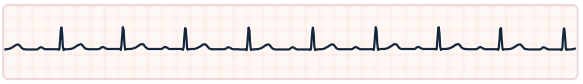
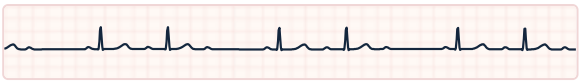
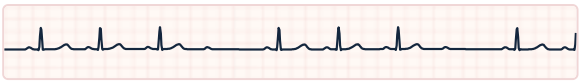
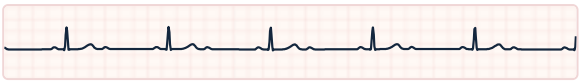
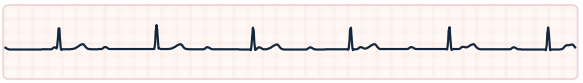
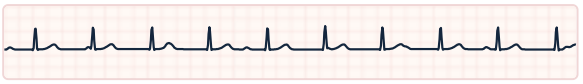
ATRIAL

Premature atrial complexes		An early, differently shaped P wave is followed by a narrow QRS and a less-than-compensatory pause.
Focal atrial tachycardia		A regular narrow tachycardia has an abnormal P wave before every QRS, with a flat baseline between P waves.
Multifocal atrial tachycardia		The rate exceeds 100/min, the rhythm is irregular, and there are at least three P-wave shapes with varying PR.
Atrial flutter, 2:1 conduction		The regular narrow rhythm sits at about 150/min with two sawtooth waves for every QRS.
Atrial fibrillation		The rhythm is irregularly irregular with no P waves, only a fibrillatory baseline, and narrow QRS complexes.

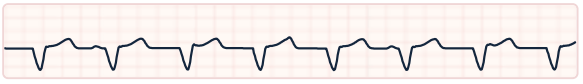
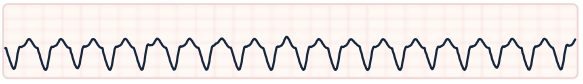
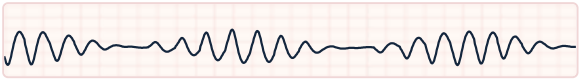
JUNCTIONAL & SVT

Junctional escape rhythm		It is regular at 40–60/min with narrow QRS complexes and no upright P wave before them.
AV nodal re-entrant tachycardia (AVNRT)		The narrow tachycardia is perfectly regular with the retrograde P wave buried at the very end of the QRS (RP under 90 ms).
Orthodromic AV re-entrant tachycardia (AVRT)		The regular narrow tachycardia has a retrograde P wave in the ST segment, with an RP over 90 ms but shorter than the PR.

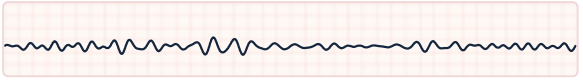
AV BLOCKS

First-degree AV block		Every P wave conducts, with a constant PR longer than 200 ms.
Second-degree AV block, Mobitz I (Wenckebach)		The PR interval lengthens progressively until a P wave is not followed by a QRS, then resets.
Second-degree AV block, Mobitz II		P waves are intermittently not conducted while the PR of the conducted beats stays constant.
2:1 AV block		Regular P waves outnumber QRS complexes two to one, with a constant PR on the conducted beats.
Third-degree AV block, junctional escape		P waves and narrow QRS complexes are each regular but completely unrelated, with more P waves than QRS.
AV dissociation (accelerated junctional rhythm)		Independent P waves march through a regular narrow rhythm that is faster than the atrial rate, and a well-timed P wave can still conduct.

VENTRICULAR

Premature ventricular complexes		The early beats are wide and bizarre with no preceding P wave, a discordant T wave and a full compensatory pause.
Accelerated idioventricular rhythm		The regular wide-complex rhythm runs at 40–110/min with no P waves linked to the QRS.
Monomorphic ventricular tachycardia		The tachycardia is regular with wide, uniform QRS complexes and atrial activity dissociated from the ventricles.
Torsades de pointes		The wide complexes twist around the baseline in spindles, the hallmark of polymorphic VT with a long QT.

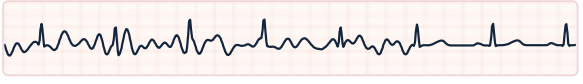
ARREST RHYTHMS

Ventricular fibrillation, coarse		The trace is chaotic with large irregular waves and no identifiable P waves, QRS complexes or T waves.
Asystole		There is a flat line with no P waves, no QRS complexes and no fibrillatory activity.

PACED

Ventricular paced rhythm		A pacing spike immediately precedes each wide, LBBB-like QRS at a fixed regular rate.

ARTIFACT

Artifact mimicking VT or VF DRAFT		Narrow QRS complexes keep marching through the noise at a steady rate, and the lead that does not use the moving electrode is clean.