Approach to Palpitations

CARDIOVASCULAR

43%

KEY DECISION RULE
Modified Valsalva (REVERT)[8]
of SVTs converted to sinus rhythm, vs 17% with standard Valsalva

Awareness of a fast, forceful or irregular heartbeat → 12-lead ECG in symptoms: QRS width, regularity; delta wave, long QT, Brugada[1,10] → K, Mg, CBC, TSH, glucose; review drugs, caffeine, stimulants[3,10] → **Arrhythmia causing instability?**

Yes →

Unstable: synchronized cardioversion now[9,10]

- Hypotension or signs of shock
- Acutely altered mental status
- Ischemic chest pain
- Acute heart failure, pulmonary edema
- Sinus tach: treat cause, no shock

→ **Pads, sedation; pulseless or polymorphic VT: defibrillate**

If stable: what does the ECG show?

	Narrow, regular SVT	**Narrow, irregular** mostly AF	**Wide QRS (≥120 ms)** treat as VT	**Sinus or ectopy** find the cause
CAUSES	• AVNRT, orthodromic AVRT • Atrial flutter 2:1 (rate ~150) • Focal atrial tachycardia	• Atrial fibrillation • Flutter with variable block • MAT (COPD), frequent PACs	• **VT; less often SVT with aberrancy** • **Pre-excited AF (WPW)** • **Torsades: long QT, low K or Mg**	• PACs, PVCs • **Sinus tach: bleed, PE, sepsis, thyroid[10]** • Psychiatric, e.g. panic (31% overall)[6]
CLUES	• Abrupt onset and offset[1] • Neck pounding: AVNRT (LR 177)[5] • Delta wave on baseline ECG: WPW[1]	• Irregularly irregular; no P waves • Alcohol, thyroid, OSA, infection[3]	• Prior MI or low EF: VT likely[4] • AV dissociation, fusion beats[7] • Syncope; FHx of sudden death[4]	• Skipped beat, then a thump • Episodes <5 min: LR 0.38 for arrhythmia[5] • Syncope, exertion, FHx SCD: high risk[4]
WORKUP	• Find P waves; compare with baseline • Adenosine unmasks flutter, AT[1]	• TSH, creatinine, CBC; echo[3] • CHADS-65 for stroke risk[3]	• If any doubt, it is VT[4] • Echo, ischemia workup; QTc[4] • Rule out high K, TCA, Na blockers[10]	• Holter, patch or loop by frequency[5] • Echo: murmur, syncope, frequent PVCs[4]
MANAGE	• Modified Valsalva, legs raised[8] • Adenosine 6 mg rapid push, then 12 mg[1] • Fails: IV β-blocker or diltiazem; ablation[1]	• β-blocker; diltiazem if EF >40%[2,3] • OAC if CHADS-65 positive; DOAC first[3] • <12 h, no stroke/TIA: cardiovert, no OAC[3]	• Stable VT: procainamide; HFrEF: amio[4,10] • Pre-excited AF: procainamide; no nodal/amio[1,2] • Torsades: IV Mg; stop QT drugs[4]	• Sinus tach: treat cause, not rate[1,10] • Symptomatic PVCs: β-blocker[4] • Reassure once rhythm–symptom match

Stethopedia
stethopedia.ca/approach/palpitations

Evidence [1] Page 2016, J Am Coll Cardiol [2] Joglar 2024, Circulation [3] Andrade 2020, Can J Cardiol [4] Al-Khatib 2018, Circulation [5] Thavendiranathan 2009, JAMA [6] Weber 1996, Am J Med [7] Brugada 1991, Circulation [8] Appelboam 2015, Lancet [9] Wigginton 2025, Circulation [10] Manual 2024–25, pp. 4, 8–10