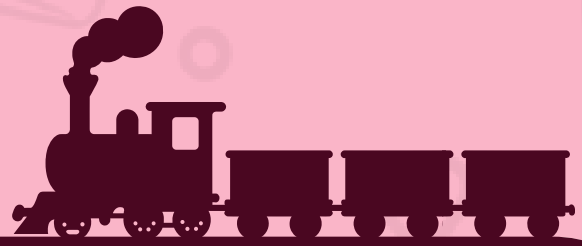




**HISTORY
TAKING
SERIES**



APPROACH TO PALPITATIONS



**MUM
IM'S**

DEFINITION

A subjective symptom; an unpleasant awareness of a forceful, rapid or irregular beating of the heart.

Palpitations can be **BENIGN** or **LIFE-THREATENING!**

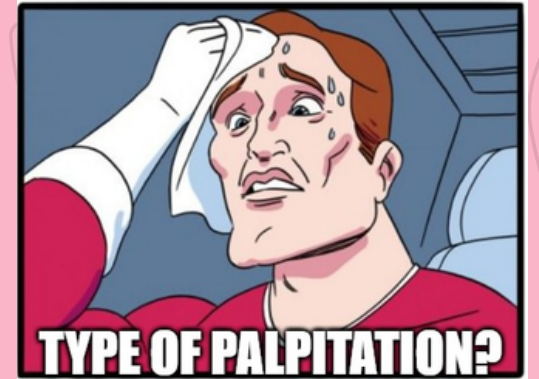
'Heart racing'

'Pounding'

Patients may describe

'Fluttering'

'Skipping beats'



Categories of Causes	Examples of Conditions
Cardiac causes 	Arrhythmias Atrial fibrillation (AFib), Premature supraventricular (PSVT) or Ventricular contractions (VT/VF)
	Non-arrhythmias Intracardiac shunt, Valvular disease
Extra-cardiac causes	Endocrine & Metabolic Hyperthyroidism, Hypoglycemia
	Hematological Anaemia
	Drugs & Medications Substance use, Caffeine, Alcohol, Sympathomimetic agents
	Psychiatric Anxiety disorder, Panic attacks
	Others Fever, Normal pregnancy, Exercise, Spinal dysfunction, Vasovagal syndrome, UTI (especially in the elderly)

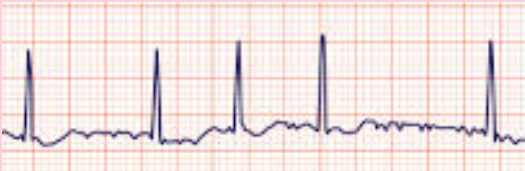
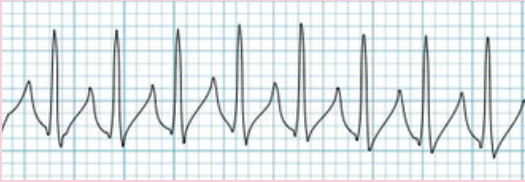
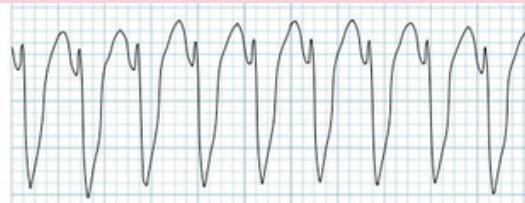
DDX DIFFERENTIAL DIAGNOSIS

CARDIAC CAUSES

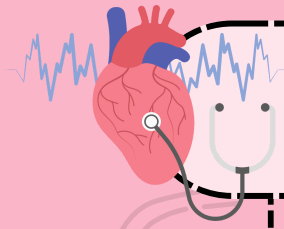
- **Arrhythmias**

! LIFE-THREATENING ARRHYTHMIAS

- Acute coronary syndrome (ACS)
- Ventricular tachycardia
- Atypical ventricular tachycardia (Torsades de Pointes)
- Sick sinus syndrome (SSS)
- Complete heart block



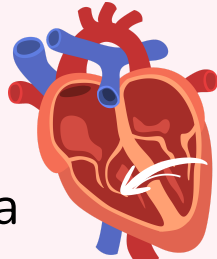

Condition	Characteristics/Associations
<p>AFib →</p> 	<ul style="list-style-type: none"> • Palpitations before collapse • Chest pain, dyspnea, pre-syncope or syncope • Irregularly irregular pulse • History of cardiovascular disease (eg. heart failure)
 <p>↑ SVT or VT →</p> 	<ul style="list-style-type: none"> • Both <ul style="list-style-type: none"> ◦ Very fast, regular heartbeats ◦ Abrupt onset & termination • SVT: <ul style="list-style-type: none"> ◦ Palpitations terminated by vagal maneuvers (AV-node-dependent SVTs) • VT: <ul style="list-style-type: none"> ◦ Severe dizziness/syncope ◦ Often associated with structural heart disease/heart failure
Premature beats	<ul style="list-style-type: none"> • Occur randomly, episodic, last for an instant

DDX DIFFERENTIAL DIAGNOSIS



CARDIAC CAUSES






Non-arrhythmias

Condition	Characteristics/Associations
Acute coronary syndrome (ACS)	<ul style="list-style-type: none"> Angina, sweating, nausea & vomiting, severe retrosternal pain, pain in left arm and/or jaw, shortness of breath (SOB), fatigue
Mitral valve prolapse (MVP)	<ul style="list-style-type: none"> Late systolic crescendo murmur with midsystolic click Risk factor: Marfan syndrome, Ehlers-Danlos syndrome, Rheumatic fever
Pericarditis	<ul style="list-style-type: none"> Sharp pleuritic chest pain, relieved by sitting up & leaning forward Friction rub <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Pain worse lying down, inspiration</p> </div> <div style="text-align: center;">  <p>Pain relief sitting up, leaning forward</p> </div> </div>
Congenital heart disease	<ul style="list-style-type: none"> VSD: Holosystolic, harsh-sounding murmur, loudest at tricuspid area ASD: Soft midsystolic murmur at pulmonic area 
Aortic stenosis (AS)	<ul style="list-style-type: none"> SAD: Syncope, Angina, Dyspnea Ejection systolic murmur Signs of left heart failure 
Congestive heart failure (CHF)	<ul style="list-style-type: none"> Paroxysmal nocturnal dyspnea (PND), orthopnea Peripheral edema

DDX DIFFERENTIAL DIAGNOSIS



EXTRACARDIAC CAUSES

Condition	Characteristics/ Associations
 Hyperthyroidism	<ul style="list-style-type: none">• Heat intolerance, tremors, unintentional weight loss, goitre
Hypoglycemia 	<ul style="list-style-type: none">• Tremors, diaphoresis, weakness, confusion
Anaemia 	<ul style="list-style-type: none">• Causes: Blood loss, malabsorption, gastric surgery• Fatigue, dizziness, SOB, reduced exercise tolerance
 Drugs & Medications	<ul style="list-style-type: none">• Alcohol, sympathomimetic agents, vasodilators, anticholinergic drugs, beta-blockers withdrawals
Anxiety 	<ul style="list-style-type: none">• Pounding, forceful heartbeat• Relatively fast (90-120 mins)• Often diagnosed after a negative evaluation for ischemic heart disease
Panic attack	<ul style="list-style-type: none">• Sweating, anxiety• Often diagnosed after a negative evaluation for ischemic heart disease



HISTORY TAKING

CHARACTERISTICS OF PALPITATION

1. ONSET & OFFSET

- Sinus tachycardia: **Gradual** onset & offset
- PSVT: **Abrupt** onset & offset

2. REGULARITY OF RHYTHM

- **Regular:** SVT/VT (monomorphic)/sinus tachycardia
- **Irregular:** Ectopic beats/atrial fibrillation
- **Regular with occasional 'missed' beats:** PACs/PVCs

3. DURATION OF EACH EPISODE

- Occasional **skipped beat:** PVCs/PACs
- **Sustained** (minutes or longer): Supraventricular or ventricular arrhythmias

4. AGE OF ONSET



- Episodes of rapid palpitations since **childhood:** SVT (AVRT or AVNRT)




- **Older** onset: Atrial tachycardia, atrial fibrillation, atrial flutter

5. POSITION

- **AVNRT:**
 - Precipitated by standing up after bending over → terminated when recumbent
- **Premature supraventricular or ventricular beats:**
 - Precipitated by lying supine or left lateral decubitus

6. PRECIPITATING FACTORS

- Activity/exertion – Coronary heart disease, SVT, VT, sinus tachycardia
- Emotional distress – Psychiatric causes 

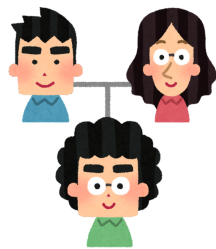
7. ASSOCIATED FEATURES

- **Chest pain** – ACS, aortic stenosis 
- **SOB** – Anxiety, mitral stenosis, heart failure 
- **Dizziness or syncope** – Severe arrhythmias eg SSS, complete heart block and VT, structural heart disease eg. aortic stenosis 

HISTORY TAKING

PAST MEDICAL/FAMILY HISTORY

- Coronary or valvular heart disease
- Rheumatic fever
- Panic attacks or anxiety disorder
- Thyroid disorder
- Family history of sudden cardiac death
- Long QT syndrome (heritable!)



DRUGS HISTORY

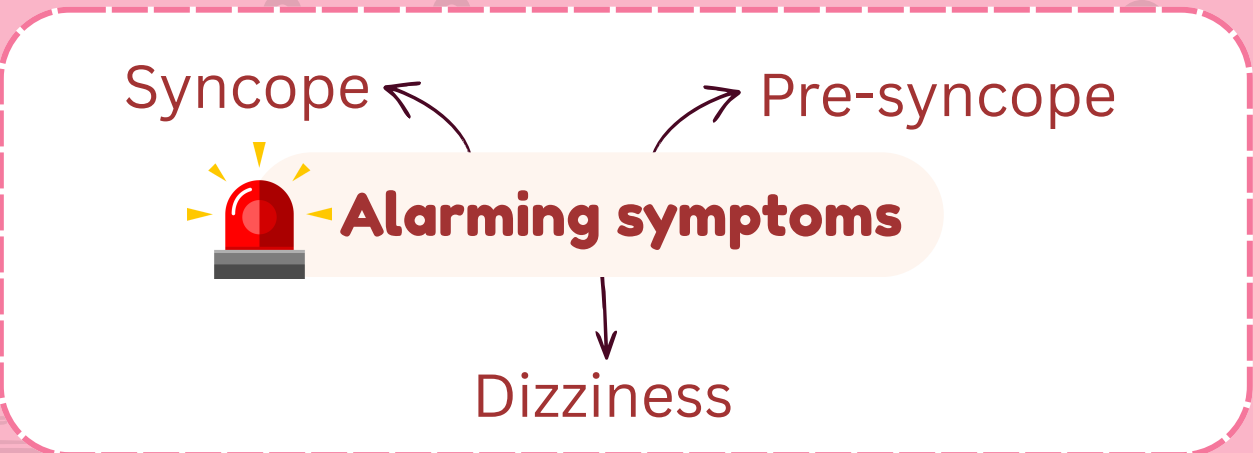
- Thyroxine
- Digitalis
- Decongestants (pseudoephedrine)
- Beta-agonists
- Recreational drugs (eg. cocaine)
- Alcohol
- Tobacco
- Caffeine







**SERIOUS DISORDERS
NOT TO BE MISSED**

- Myocardial infarction/angina
- Arrhythmias (eg. atrial fibrillation)
- Long QT syndrome
- WPW syndrome
- Electrolyte abnormalities (hypokalemia, hypomagnesemia, hypoglycemia)



Ask patients to tap out on the desk the rhythm & rate of the heartbeat they experienced!

<p>Irregular tapping 'all over the place'</p> <p>↓</p> <p>Atrial fibrillation</p> <p>'dum...dumdum.....dum'</p> 	<p>Isolated thump followed by a definite pause on a background of regular pattern</p> <p>↓</p> <p>Premature beats (ectopics)</p> <p>'dum...dum...dumDUM.....'</p> 
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PHYSICAL EXAMINATION

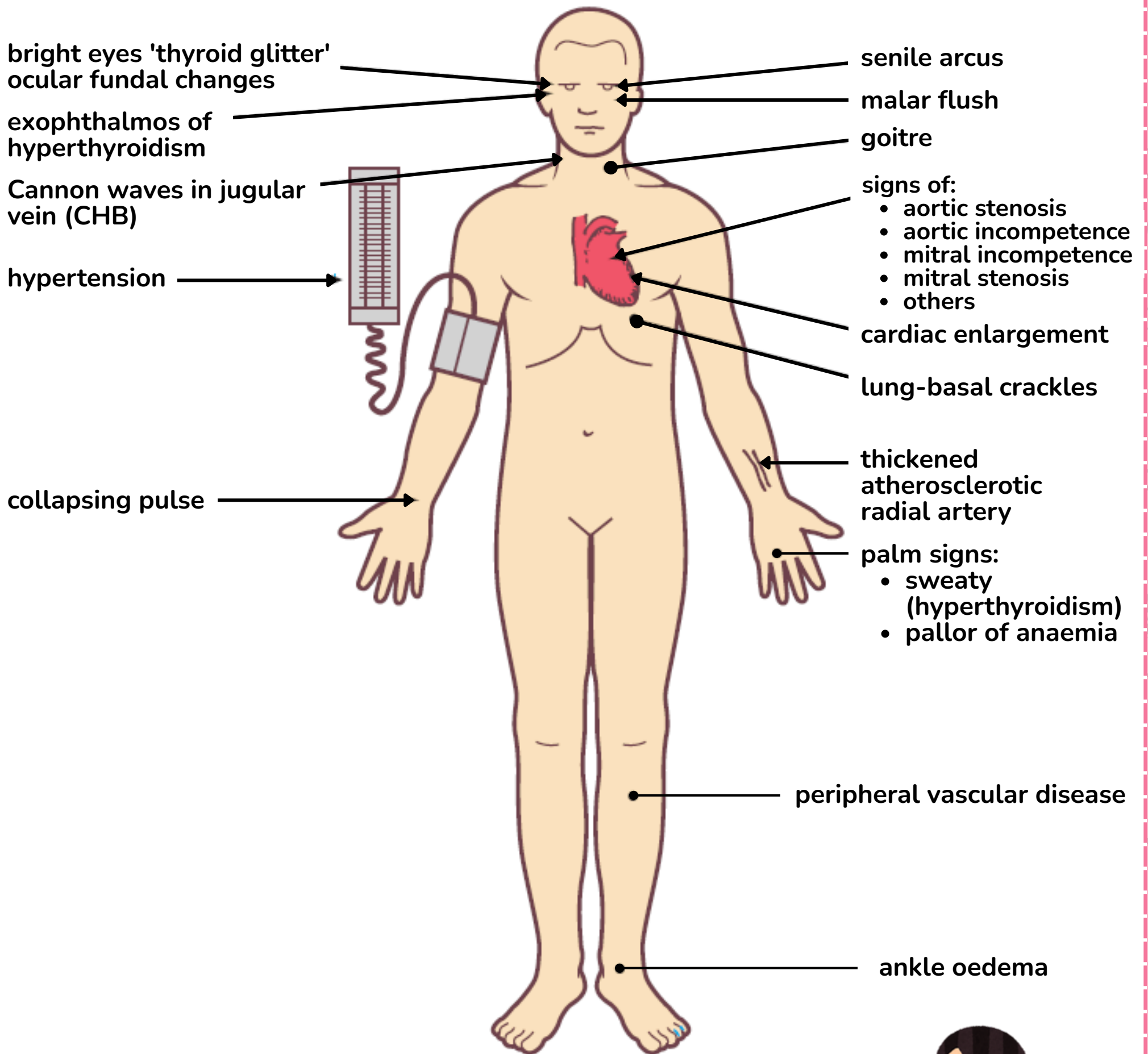


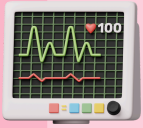
FIGURE 1: Signs to consider in a patient with palpitations.





INVESTIGATIONS

BEDSIDE



ECG (Should be included for all patients!)

Arrhythmia



Blood glucose

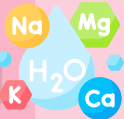
Hypoglycemia

LABORATORY TESTS



FBC

Anaemia, Infections



Electrolytes

Hypokalemia, Hypomagnesemia



Thyroid Function Test

Hyperthyroidism



Toxicology Test

Substance use or withdrawal

IMAGING



Chest X-Ray

Congestive Heart Failure



Echocardiogram

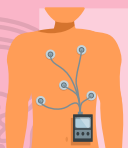
Structural heart disease

SPECIAL TESTS



Exercise Stress Test

Coronary artery disease



Holter's monitoring

Arrhythmias



Electrophysiologic testing

Arrhythmias

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TEST YOUR KNOWLEDGE!

1. A 21-year-old woman presents with palpitations, diarrhea, anxiety, and abdominal pain. She is tachycardic. She admits to taking her mother's medication for weight loss.

Which of the following most likely explains her presentation?

- A. Dobutamine
 - B. Iodide
 - C. Levothyroxine
 - D. Methimazole
 - E. Propylthiouracil
2. A 20-year-old woman develops palpitations and dizziness. Her BP is 100/70, pulse 140/min, and heart sounds are normal. She has had symptoms of palpitations for many years.

Which of the following is the most characteristic ECG finding?

- A. Prolonged PR Interval
- B. Broad-notched P wave in lead II
- C. Short QT interval
- D. Short PR interval



CHECK THE COMMENTS FOR THE ANSWERS →

