

12 lead EKG

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Disclosures

- I have no disclosures

Objectives

- At the conclusion of this presentation the participant will be able to
 - Outline a systematic approach to 12 lead ECG interpretation
 - Dysrhythmias
 - Demonstrate the process for determining axis
 - List criteria for LVH, RVH, RAE, LAE LBBB, RBBB, Bifascicular and trifascicular block, acute and chronic MI changes
 - Define QTc significance

5 Finger approach

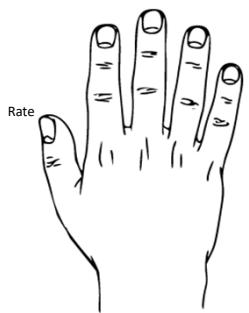


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5 Finger approach

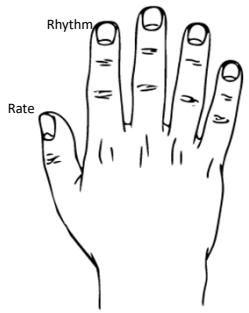


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5 Finger approach



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5 Finger approach

A diagram of a human hand with the fingers spread. The index finger is labeled 'Rhythm', the thumb is labeled 'Rate', the middle finger is labeled 'Axis', the ring finger is labeled 'Hypertrophy', and the pinky finger is labeled 'The "I's and "others"'. Arrows point from each label to its corresponding finger.

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5 Finger approach

A diagram of a human hand with the fingers spread. The index finger is labeled 'Rhythm', the thumb is labeled 'Rate', the middle finger is labeled 'Axis', the ring finger is labeled 'Hypertrophy', and the pinky finger is labeled 'The "I's and "others"'. Arrows point from each label to its corresponding finger.

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5 Finger approach

A diagram of a human hand with the fingers spread. The index finger is labeled 'Rhythm', the thumb is labeled 'Rate', the middle finger is labeled 'Axis', the ring finger is labeled 'Hypertrophy', and the pinky finger is labeled 'The "I's and "others"'. Arrows point from each label to its corresponding finger.

The "I's and "others"
Intervals
Ischemia
Injury
Infarct (acute)
others

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ECG Lead System

What we hope to cover

- Normal ECG
- Axis deviation
- Hypertrophy
- QRS interval/Bundle Branch Block
- Intervals
- Ischemia
- Injury
- Infarct
- Other

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Introduction

- Section 1
 - Normal ECG, laying the ground work
- Section 2
 - Dysrhythmias
- Section 3
 - Axis
- Section 4
 - Hypertrophy

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Introduction

- Section 5
 - BBB, Hemiblock, Bi and Tri block
- Section 6
 - Landscape of the I's
- Section 7
 - Other Cardiac conditions

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Section I

Normal ECG

Laying the ground work

Laying the ground work for 12 lead interpretation

- A tool, a sign, an extension of the history and physical examination
- Must take a sensible approach to analyze an ECG
- The ECG reflects the heart and all its functions

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Laying the ground work cont.

- The ECG language is not difficult, just different
- Practice, Practice, Practice
- Obtain good, easy to understand resources

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12 lead ECG

- A Normal ECG is dependent on intact plumbing, electrical, and structural components of the heart

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ECG Dependent Factors

- Plumbing
- Electrical
- Structural

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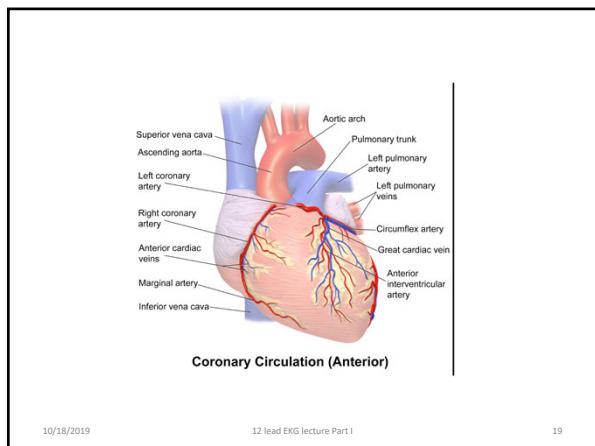
ECG Plumbing

- Coronary Arteries
 - Right coronary
 - Left Main Coronary
 - Left anterior descending
 - Circumflex artery

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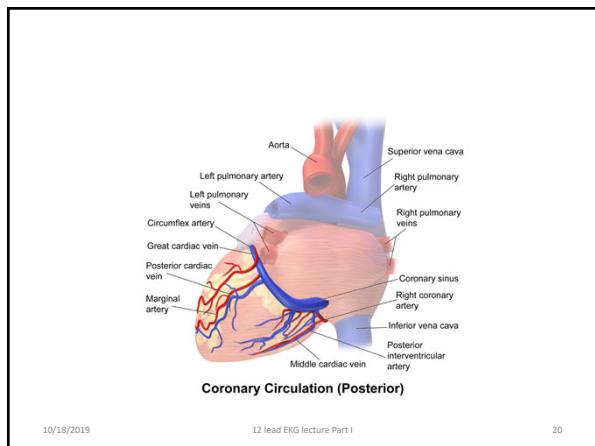
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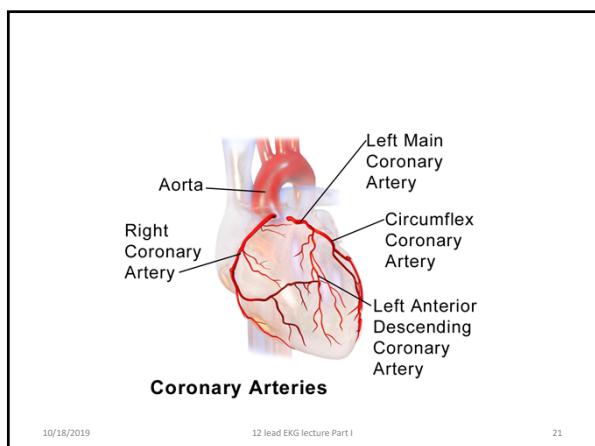
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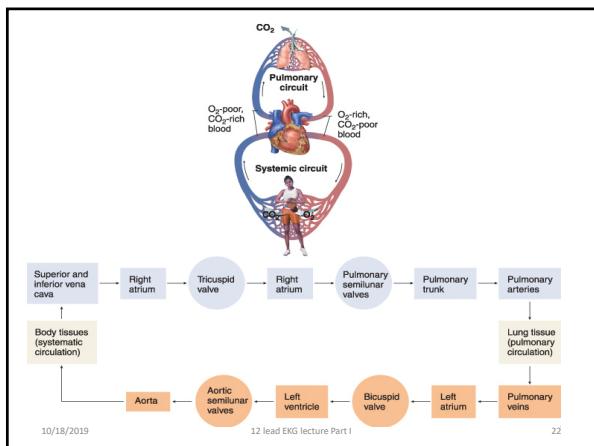
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ECG Electrical

- **SA node:** major electrical pacemaker
Blood supply: Right coronary artery
- **AV node:** initiates ventricular contraction
Blood supply: Right coronary artery and or circumflex

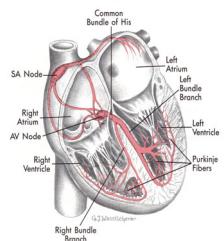
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ECG Electrical

- **Bundle of HIS:** ventricular contraction
Blood supply: Left anterior descending
- **Purkinje fibers:** ventricular contraction
Blood supply: Left anterior descending

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Electrical

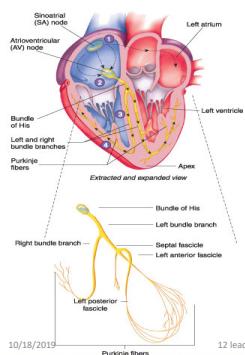


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Electrical



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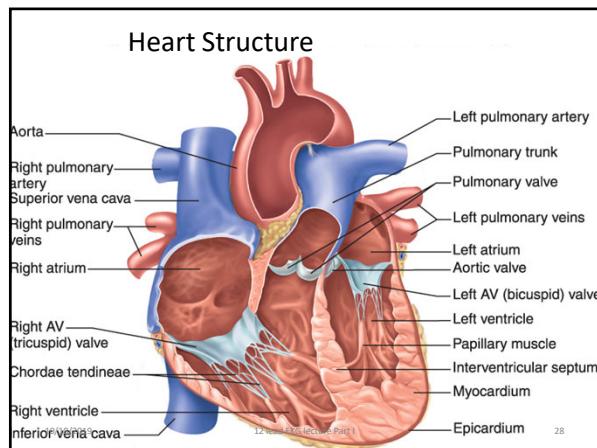
Structural

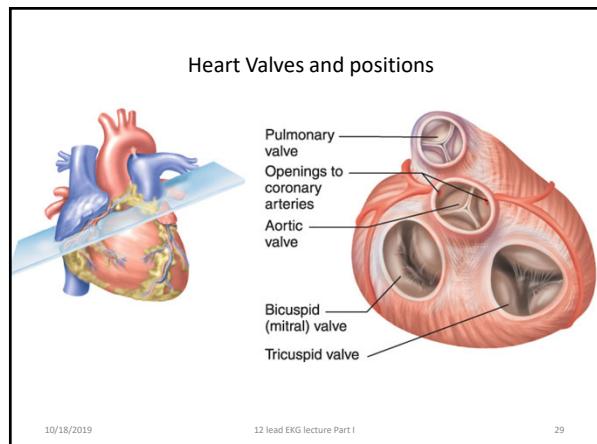
- Chambers
- Muscle
- Valves
- Nervous system
- Vascular
- Position of the heart and great vessels

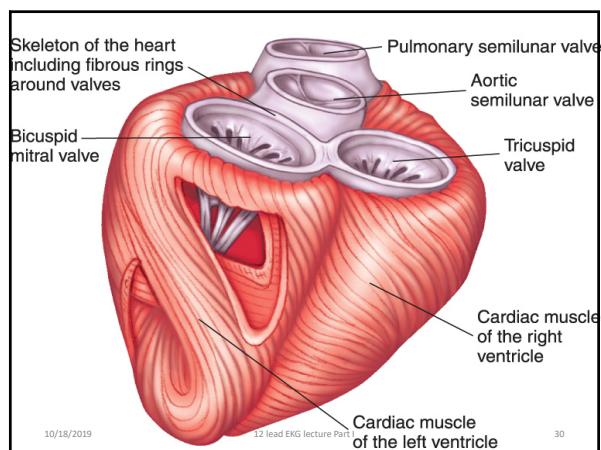
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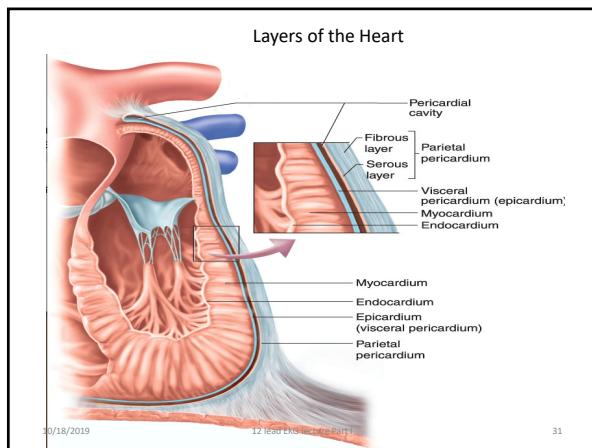
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12 lead ECG

- A Normal ECG is dependent on intact plumbing, electrical, and structural components of the heart

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Limb Leads

- View the frontal plane
- Include leads I, II, III, aV_R, aV_L and aV_F
- Provide inferior, superior, and lateral views of heart

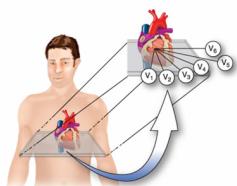
Frontal plane
Limb leads I, II, III, aV_R, aV_L, aV_F

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Precordial Leads

- View horizontal plane and include leads V_1 , V_2 , V_3 , V_4 , V_5 , and V_6
- Provide inferior, superior, and lateral views of heart

Horizontal plane
Precordial (chest) leads V_1 to V_6



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