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# THE BASICS OF ECG

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# INTRODUCTION

- ECG or EKG
- ECG is essential for diagnosis
- Essential in management of cardiac rhythm
- Helps in diagnosis of chest pain
- Proper use of thrombolysis in treatment of MI depend upon it



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# HISTORY

- 1842- Italian scientist Carlo Matteucci realizes that electricity is associated with the heart beat
- 1872- French scientist Gabriel Lippmann , capillary electrometer which can measure electricity by  
utilizing mercury
- 1876- Irish scientist Marey analyzes the electric pattern of frog's heart



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# CONTD...

- 1895- William Einthoven , credited for the invention of EKG
- 1906 - using the string electrometer EKG,  
William Einthoven diagnoses some heart problems
- 1924 - the noble prize for physiology or medicine is given to William Einthoven for his work on EKG



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# MODERN ECG INSTRUMENT





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# ELECTRICITY OF HEART

- Contraction of any muscle is associated with electrical charges called depolarization
- These changes can be detected by electrodes attached to the surface of the body
- Although the heart has 4 chambers, from the electrical point it is having only 2



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# THE WIRING DIAGRAM OF THE HEART

- SA
- AV node
- Bundle of His
- Bundle branches (left and right)



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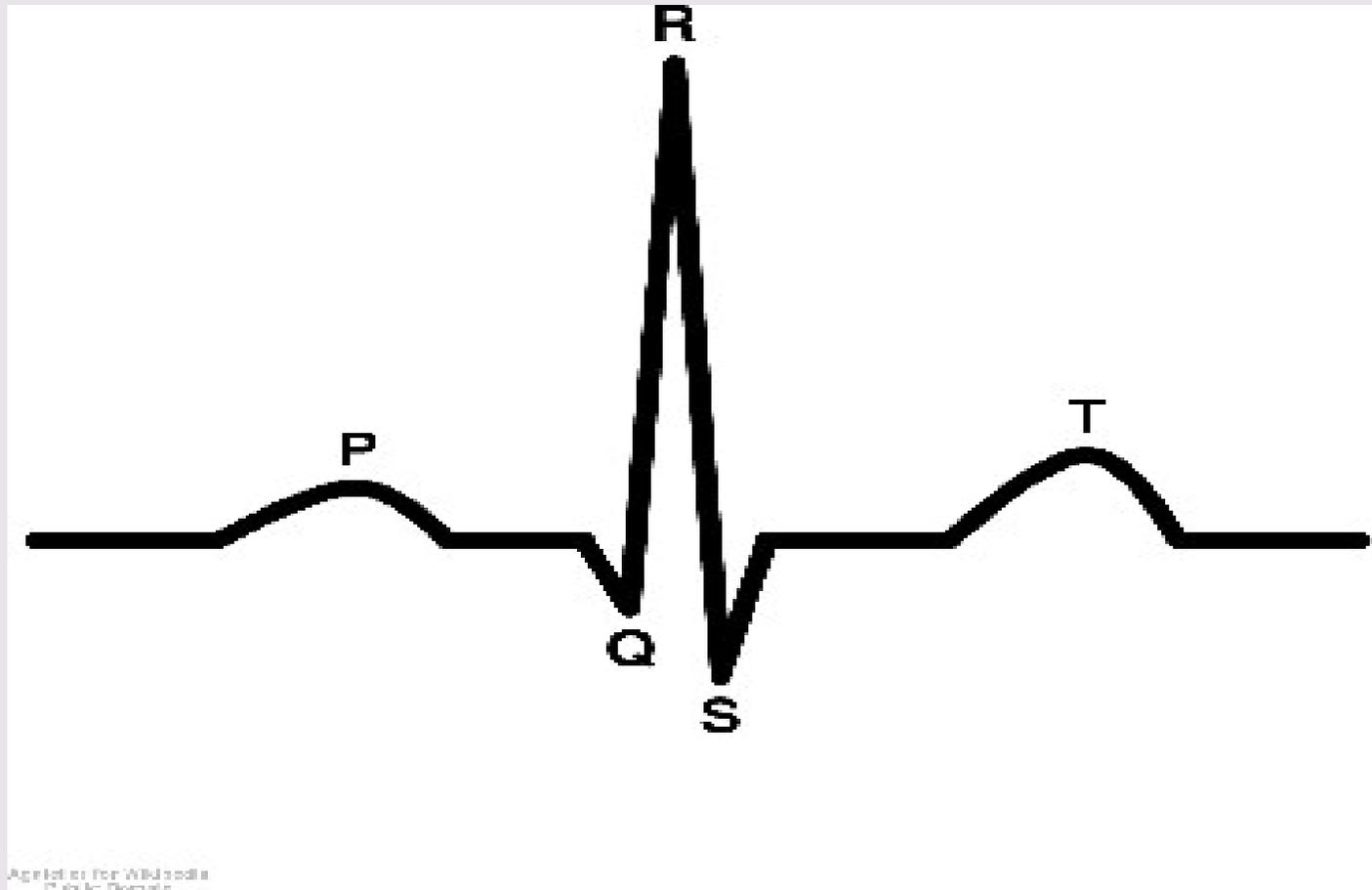
# THE SHAPE OF ECG

- Contraction of atria - P wave
- Ventricular depolarization - QRS complex
- Ventricular repolarization - T wave



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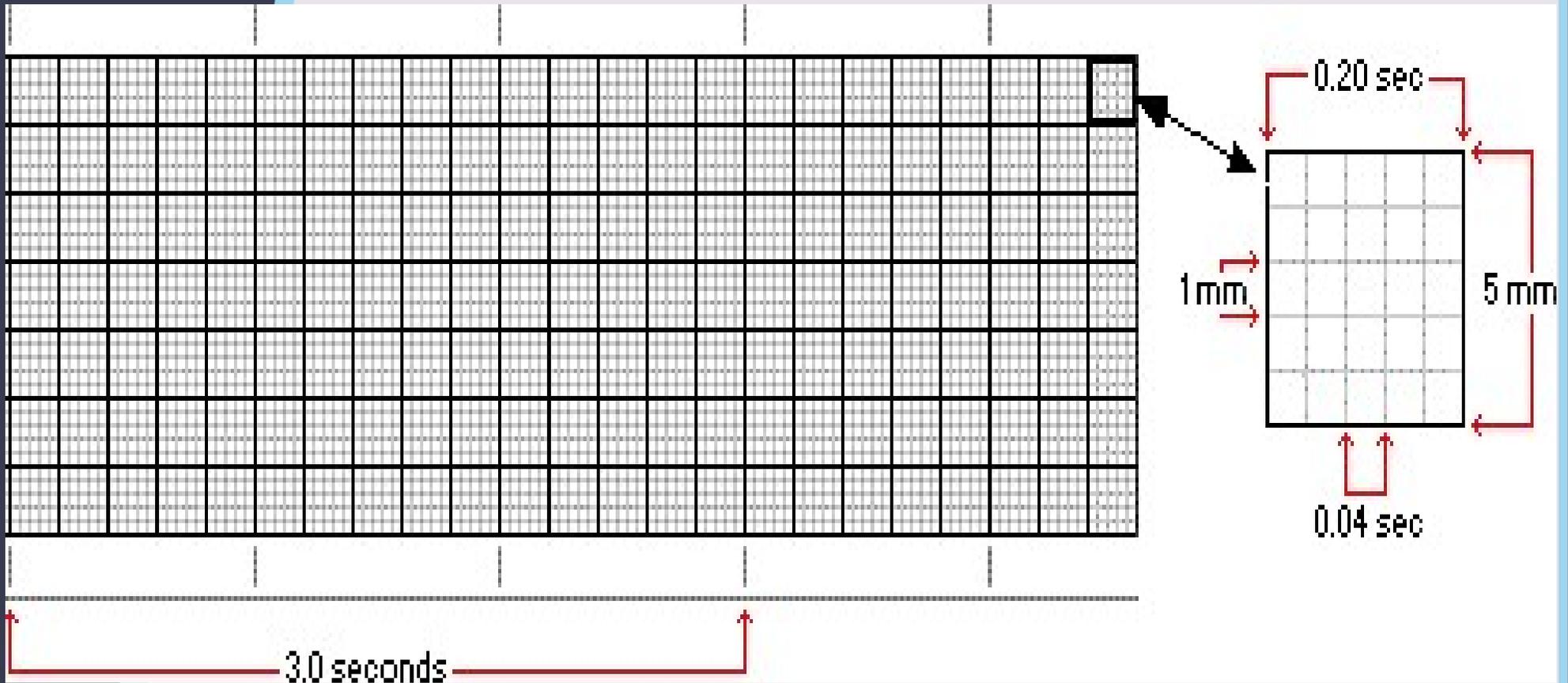
# NORMAL ECG





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# ECG INTERPRETATION





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# RELATIONSHIP BETWEEN THE NUMBER OF LARGE SQUARES COVERED BY R-R INTERVAL AND THE HEART RATE

<b>R-R INTERVAL (large squares)</b>	<b>HEART RATE (beats/min)</b>
1	300
2	150
3	100
4	75
5	60
6	50