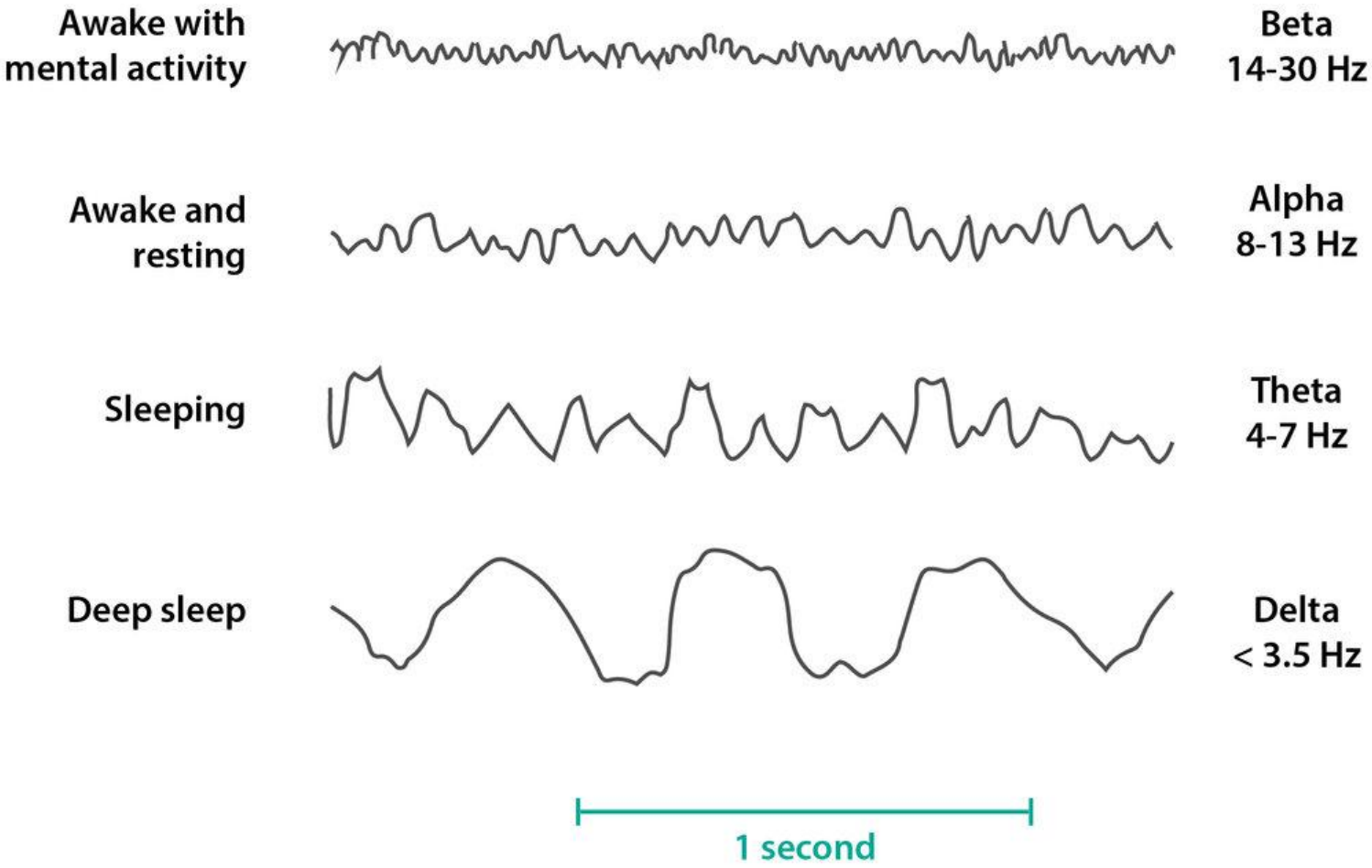
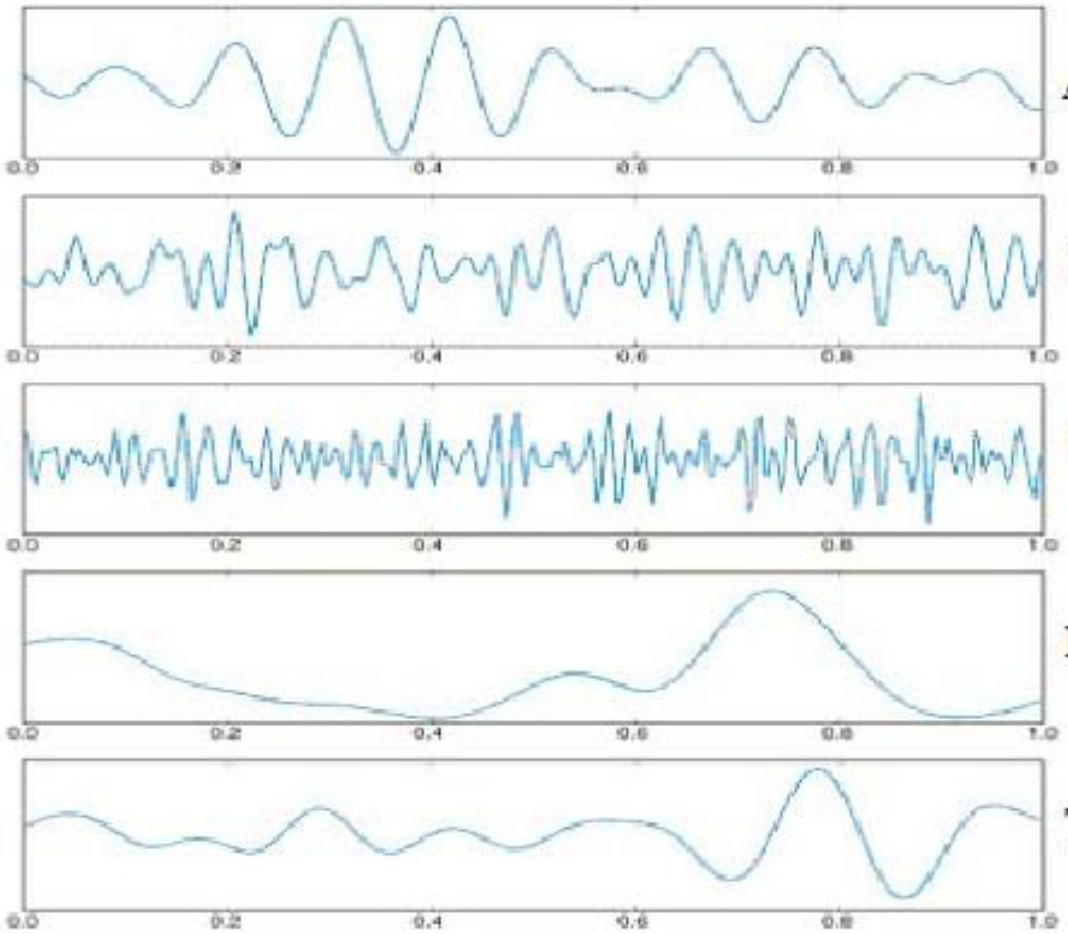
EEG-ANALYSIS



TYPE OF WAVES

are shown in figure 1.



OMD551- BASICS OF BIOMEDICAL INSTRUMENTATION

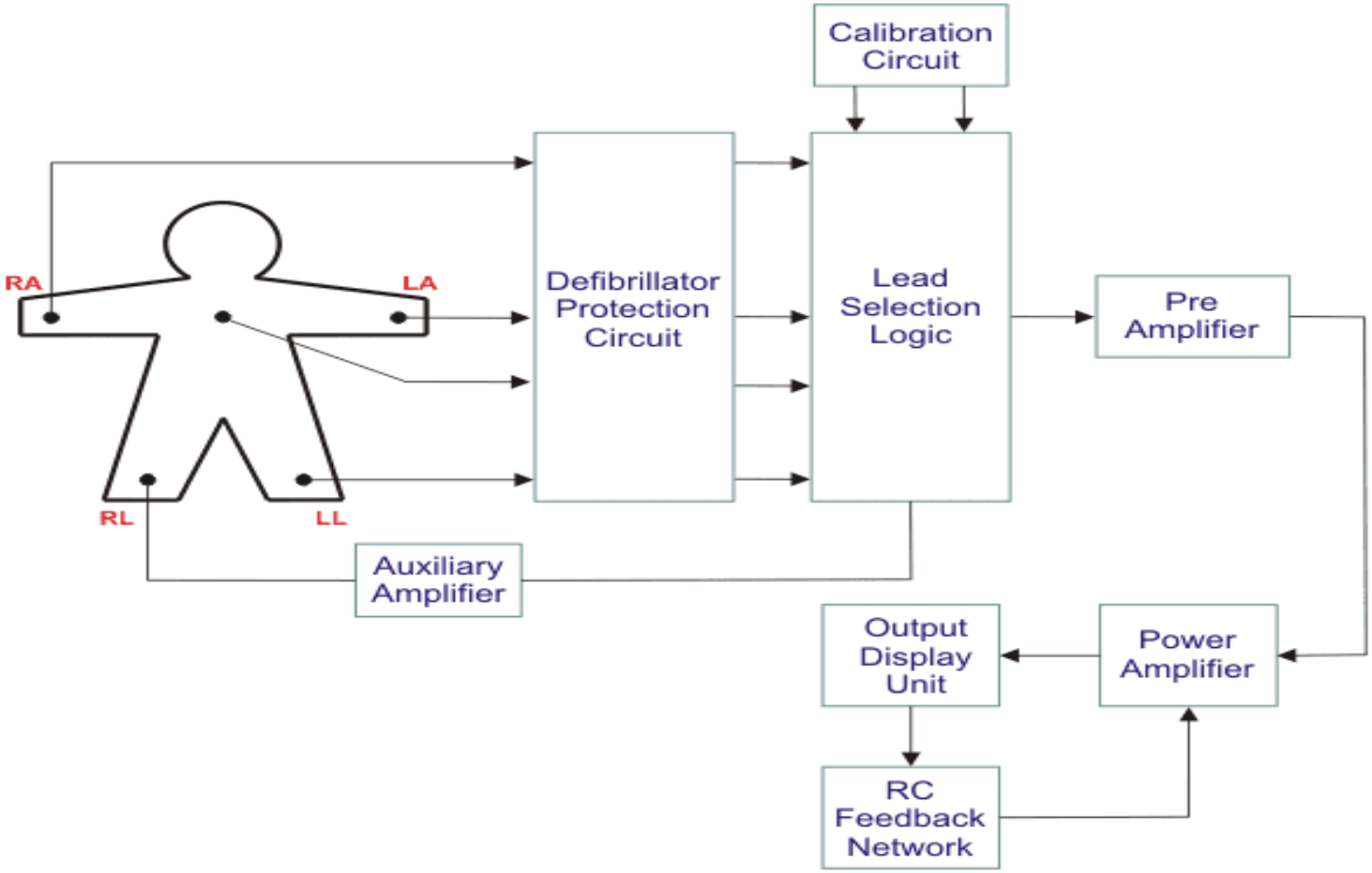
PRESENTED BY
Mr.K.JAYAPRAKASAM
AP/ECE/NPRCET

Lecture 1

EcG Recording system

- **Recording the ECG trace**
- Turn the **ECG** machine on and ensure **ECG** paper has been loaded into the machine.
- Double-check all the electrodes are attached in the appropriate locations.
- Politely ask the patient to remain still and not talk during the recording as muscle activity can interfere with the **ECG** trace.

Recording system



OMD551- BASICS OF BIOMEDICAL INSTRUMENTATION

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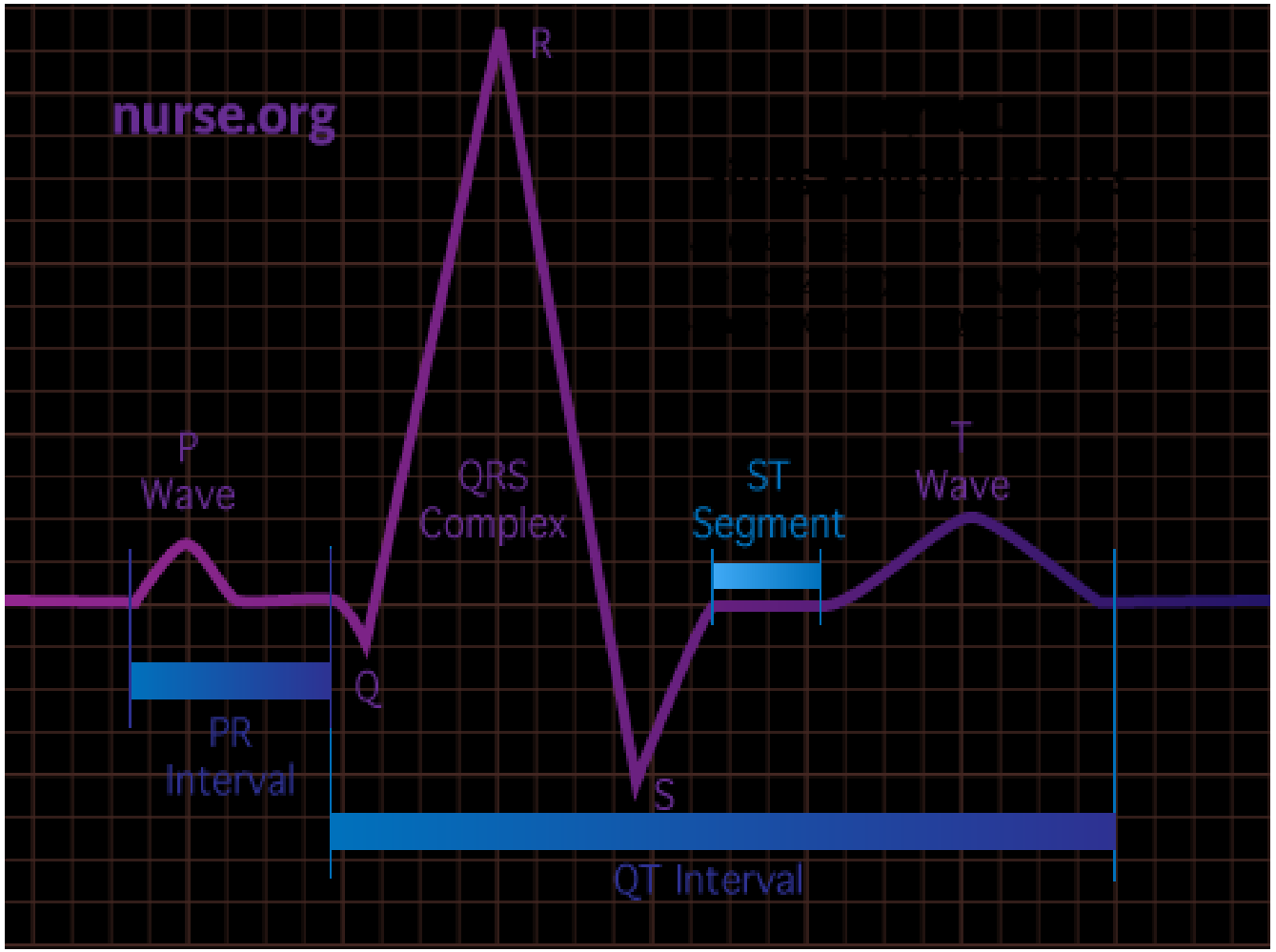
Lecture 5

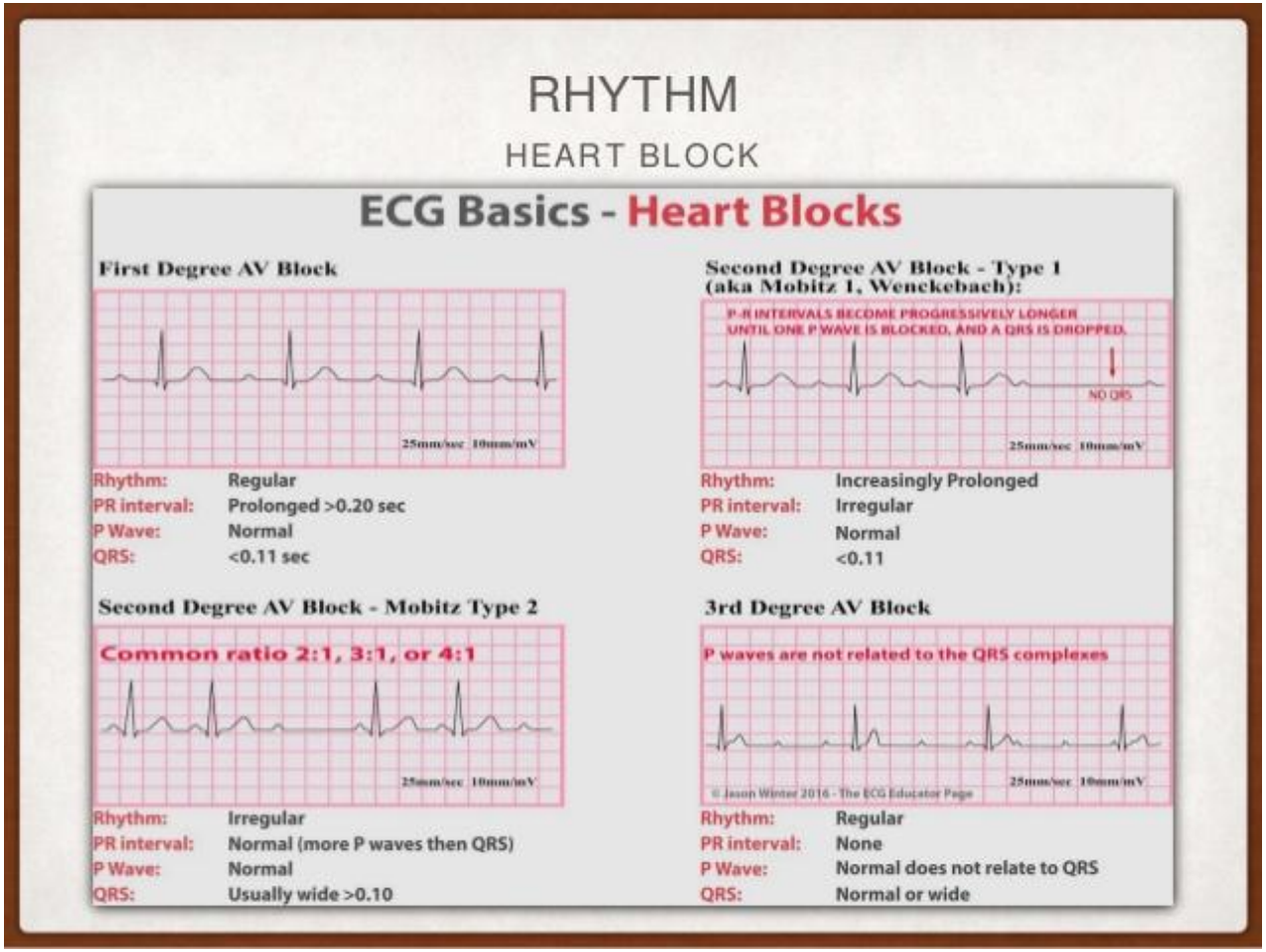
Analysis of ECG



Analysis of ECG

Analysis content	Normal	Abnormal
Heart rate	60–100 per minute	<60 per minute >100 per minute
Heart rhythm	Regular	Irregular
P wave	Sinus P wave	Non-sinus P wave
PR interval period	0.12–0.20 seconds	<0.12 seconds >0.20 seconds
QRS wave	Normal QRS wave	Abnormal voltage Abnormal electric axis QRS duration augmentation Pathological Q wave
ST segment	Normal ST segment	Elevation and depression of ST segment
T wave	Normal T wave	Tip, flat, or inverted T wave
Other issues		U wave Abnormal electrolyte-related ECG Drug-related ECG

Analysis of ECG



OMD551- BASICS OF BIOMEDICAL INSTRUMENTATION

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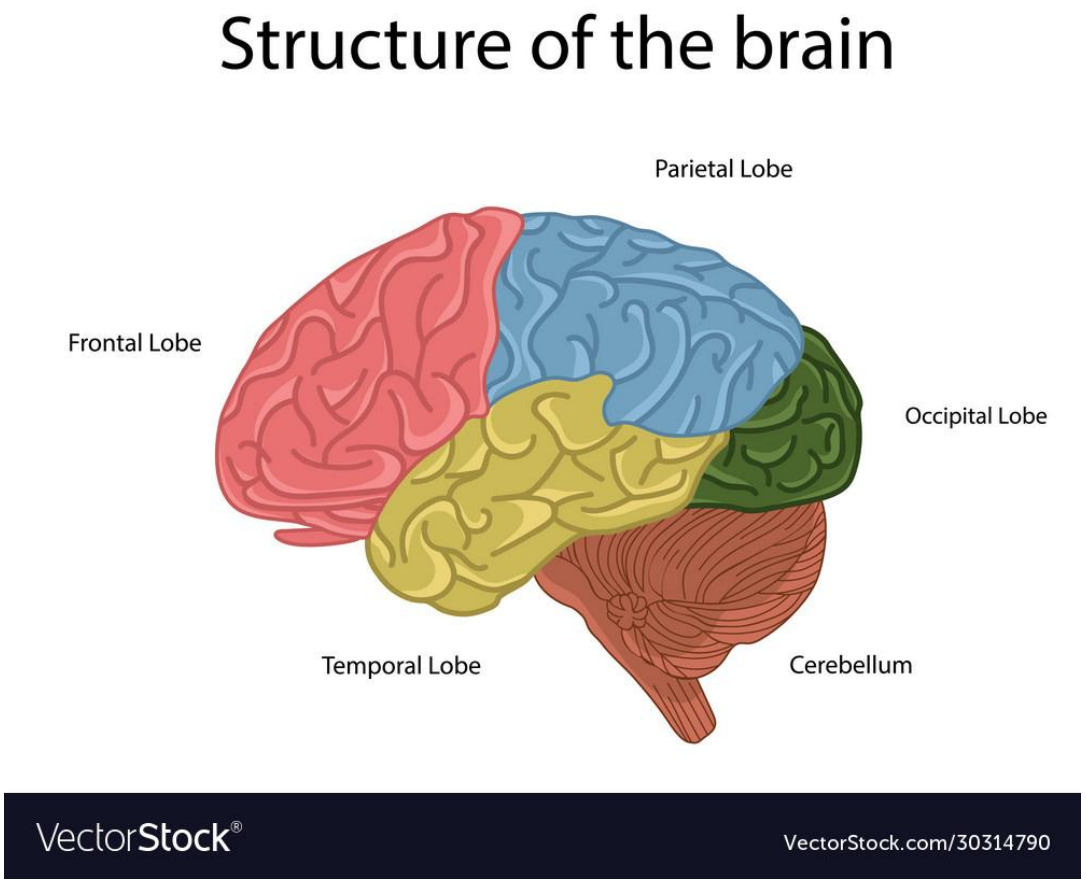
Lecture 6

EEG

- An **electroencephalogram** (**EEG**) is a test that detects electrical activity in your brain using small, metal discs (electrodes) attached to your scalp. Your brain cells communicate via electrical impulses and are active all the time, even when you're asleep

STRUCTURE


Structure of the brain
Parietal Lobe
Frontal Lobe
Occipital Lobe
Temporal Lobe
Cerebellum
VectorStock®
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PARTS OF THE BRAIN

- CEREBRUM
- CEREBELLUM
- MEDULLA OBELONGATA
- SPINALCHORD

EEG-ANTERIOR-POSTERIOR

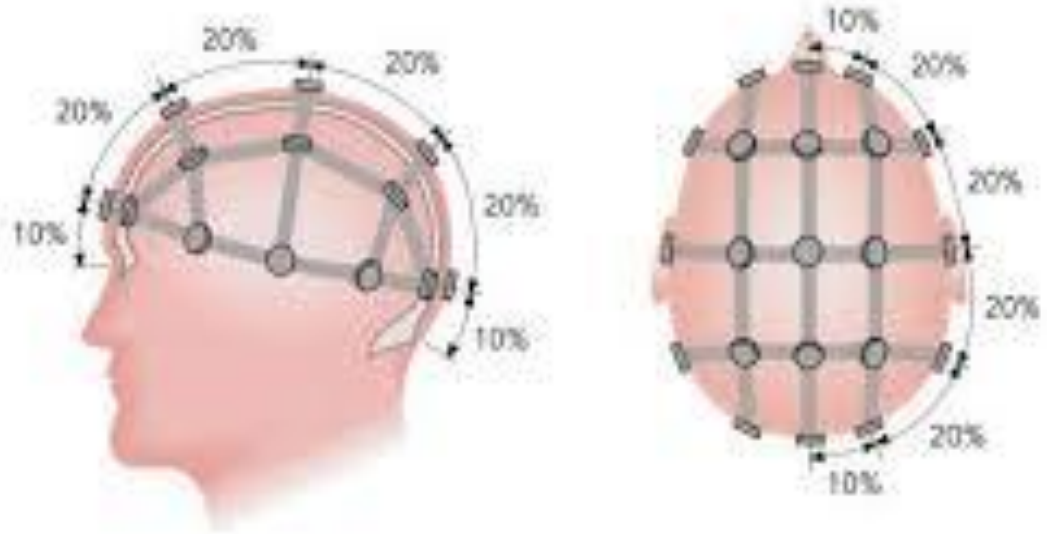


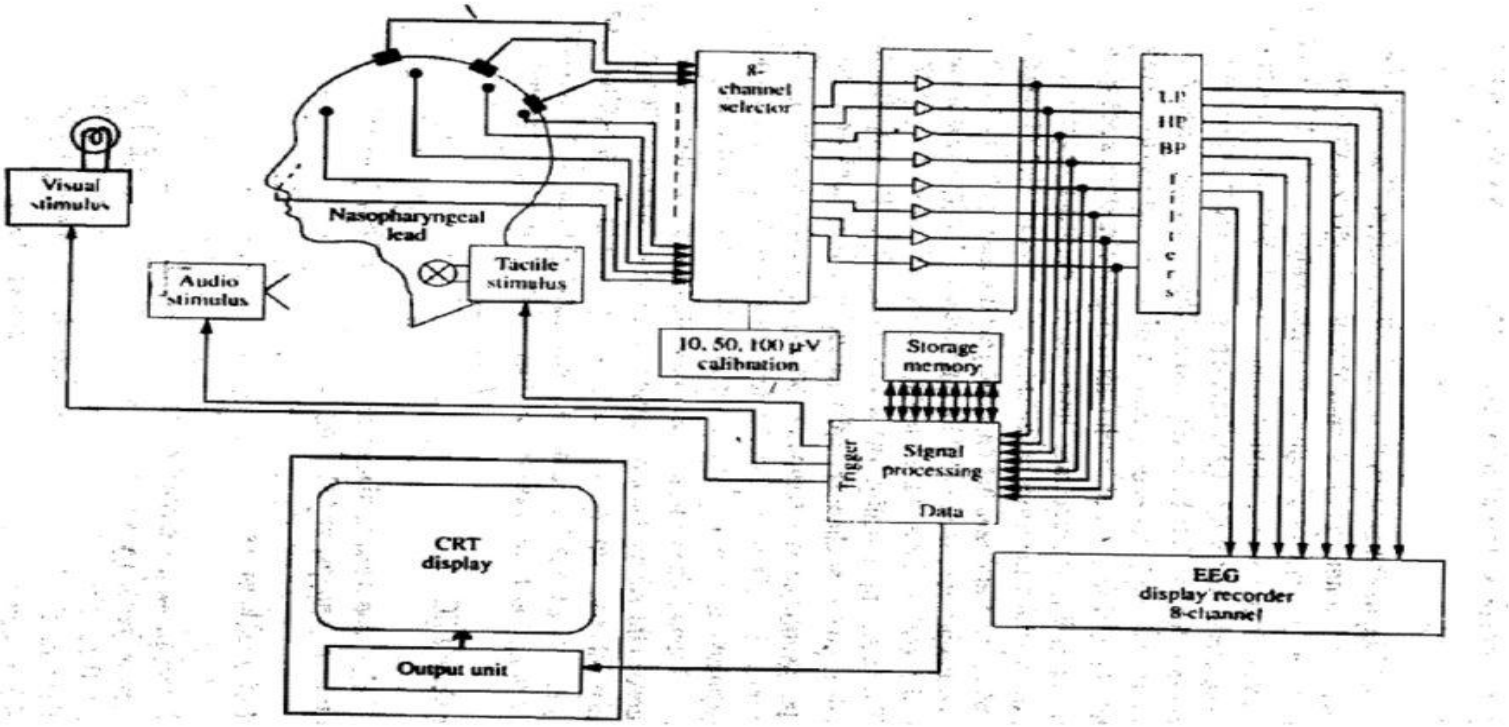
Figure 6-18 EEG electrode placement

- LATERAL MEASUREMENT

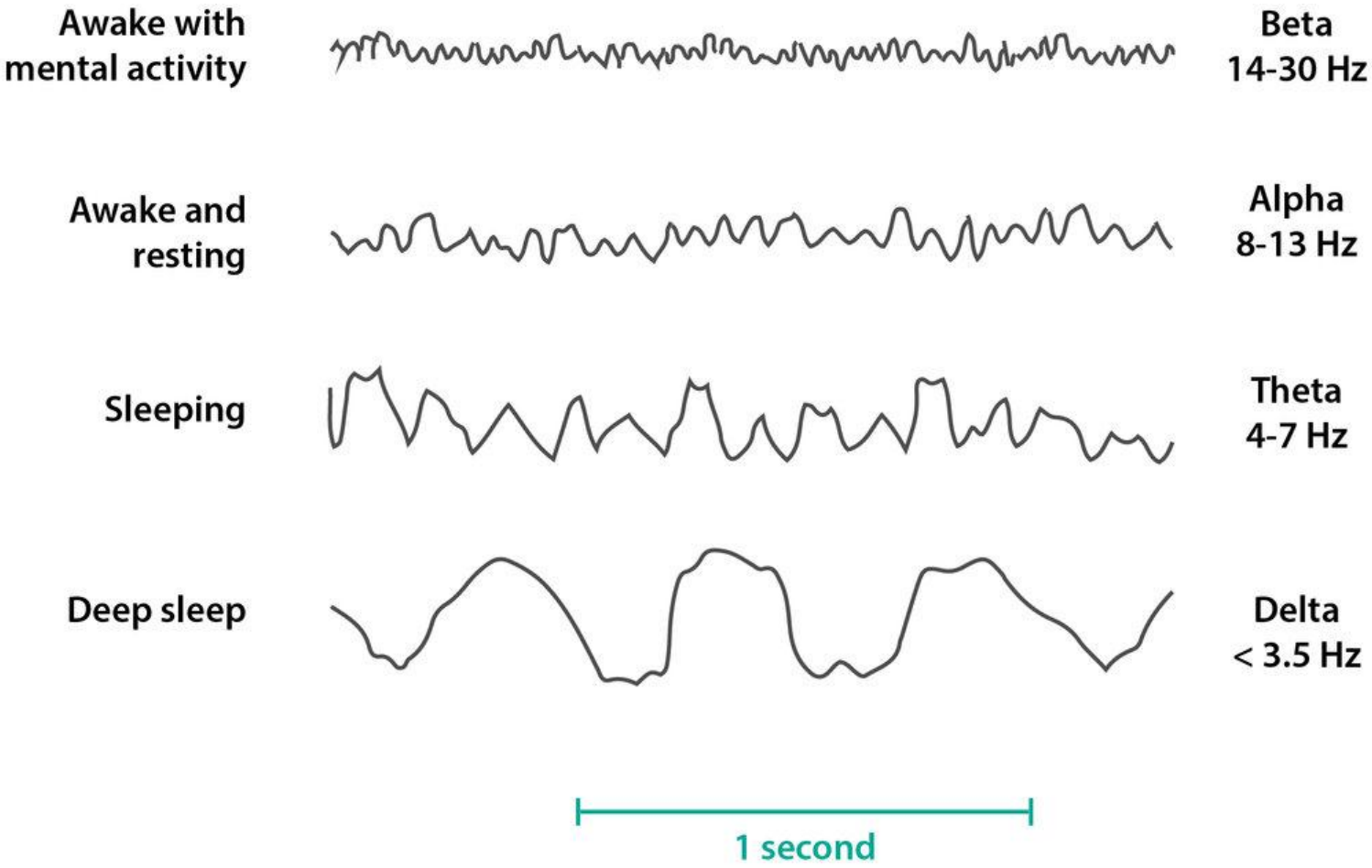
- 1.TEMPORAL PONTS (T)
- 2.CENTRAL POINT (C)

EEG-RECORDING

EEG Transducer(Recording set up)



EEG-ANALYSIS



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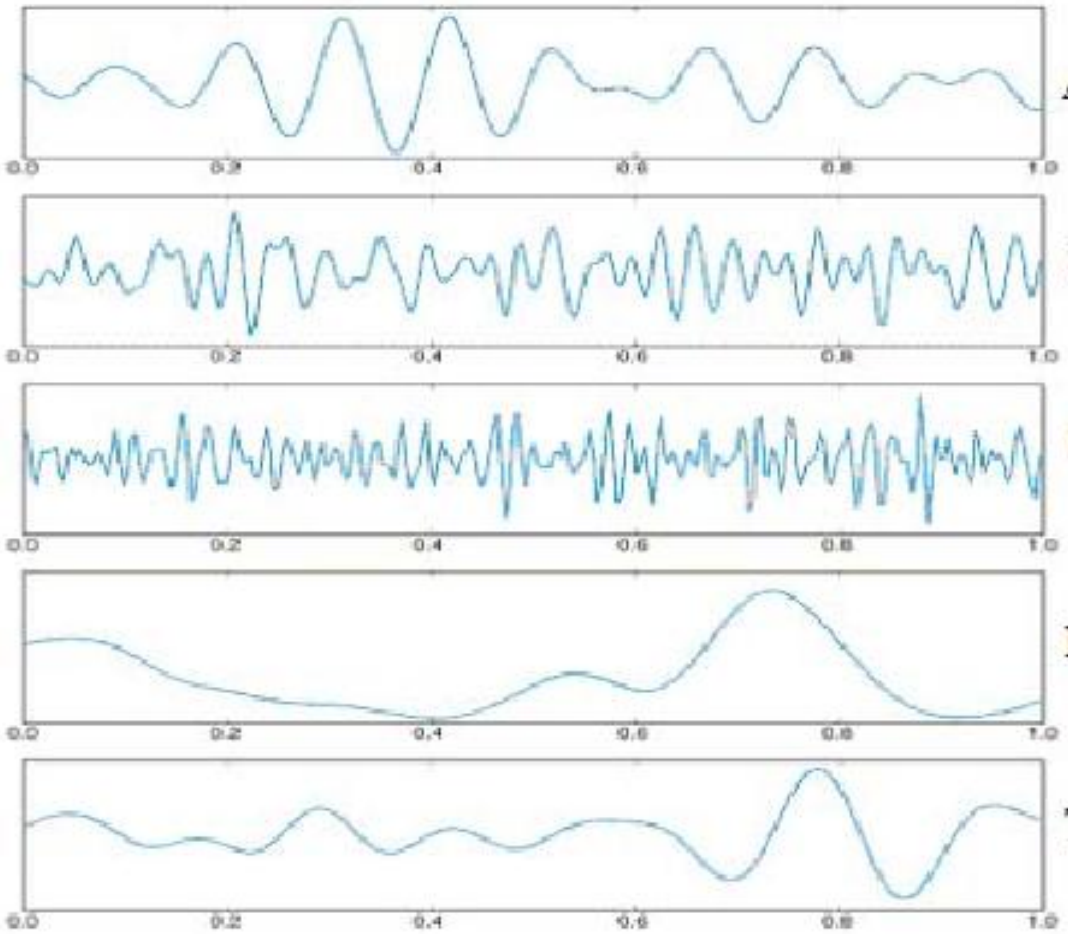


EMG

- Electromyography (**EMG**) is a diagnostic procedure that evaluates the health condition of muscles and the nerve cells that control them. These nerve cells are known as motor neurons. They transmit electrical signals that cause muscles to contract and relax.

- **MG** is performed using an instrument called an electromyograph to produce a **record** called an **electromyogram**. An electromyograph detects the electric potential generated by muscle cells when these cells are electrically or neurologically activated.

EMG RECORDING

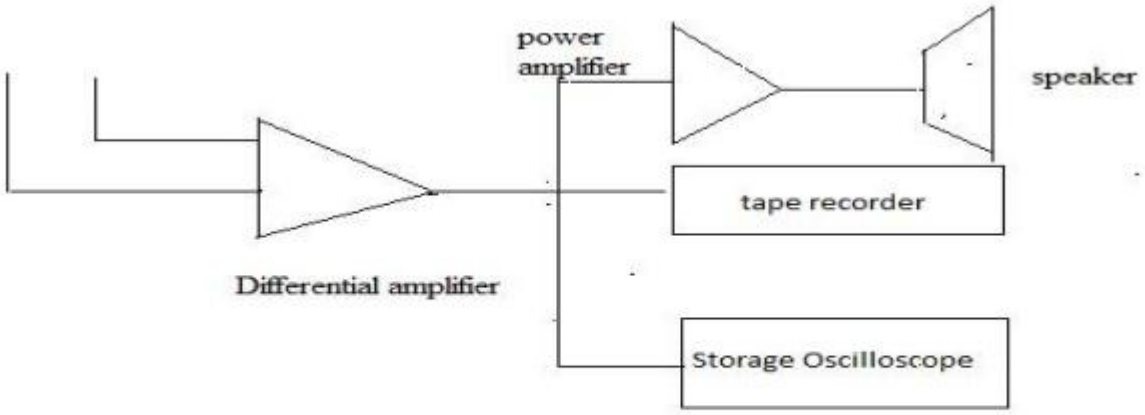
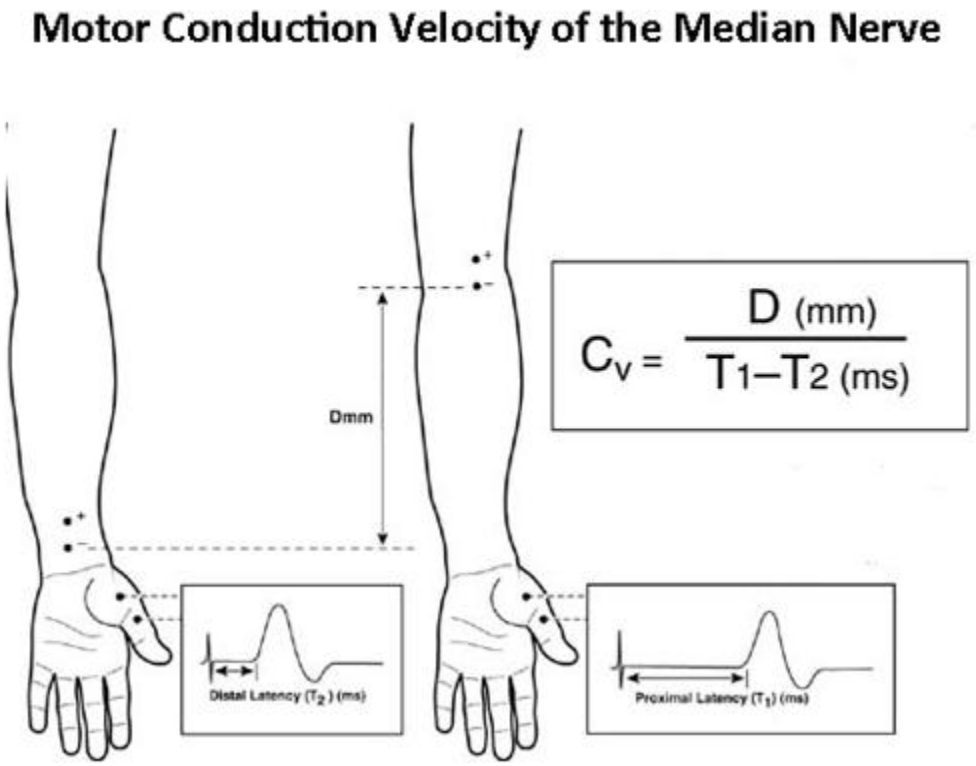


Figure 1.29 EMG Recording System

MEASUREMENT OF CONDUCTION VELOCITY