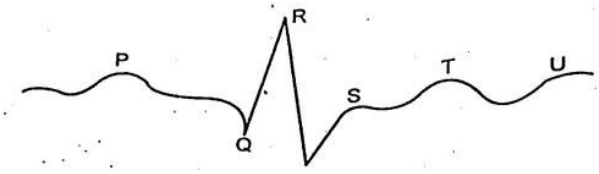
EEG

An EEG is a test that detects abnormalities in your brain waves, or in the electrical activity of your brain. During the procedure, electrodes consisting of small metal discs with thin wires are pasted onto your scalp. The electrodes detect tiny electrical charges that result from the activity



of your brain cells. The charges are amplified and appear as a graph on a computer screen, or as a recording that may be printed out on paper. Your healthcare provider then interprets the reading. During an EEG, your healthcare provider typically evaluates about 100 pages, or computer screens, of activity. He or she pays special attention to the basic waveform, but also examines brief bursts of energy and responses to stimuli, such as flashing lights.

Evoked potential studies are related procedures that also may be done. These studies measure electrical activity in your brain in response to stimulation of sight, sound, or touch.

The PQRS and T waves normal values and amplitude, duration of important ECG parameters are shown below.

Description	Origin	Amplitude mV	duration sec
P wave	Artial depolarisation(or) contraction	0.25	0.12to 0.22 (P-R interval)
R wave (QRS Complex)	Repolarisation of the atria and the depolarisation of the verticles.	1.60	0.07 to 0.1
T Wave	Ventricular repolarisation (Relaxation of myocardium)	0.1 to 0.5	0.05 to 0.15 (S-T interval)
S-T interval	Ventricular Contraction	-	-
U Wave	Slow repolarisation of the intra ventricular system	< 0.1	0.2 (T-U interval)

To record an electrocardiogram, a number of electrodes are affixed to the body of the patient. The electrodes are connected to the ECG machines by the same number of electrical wires. Usually surface electrodes are used with jelly as electrolyte between the skin and electrodes.

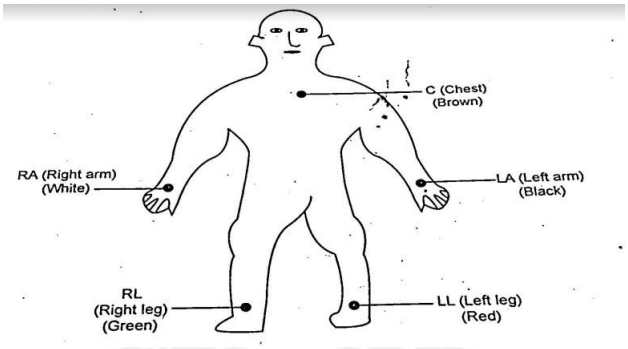


Fig: Color codes used for ECG electrodes

The potentials generated in the heart are conducted to the body surface. The potential distribution changes in a regular and complex manner during each cardiac cycle. Therefore, to record electrocardiogram we must choose electrodes in a standard position.

Each electrode has separate colour, it used to identify the placement of electrodes the above figure shows that. The early electrocardiograph machine employed with three electrodes, of which only two were used at one time.

ECG Lead System:

The tracing of voltage difference at any two sides due to electrical activity of the heart is called Lead. There are four types of lead systems used in electrocardiograms. Types of leads

Bipolar limb leads or standard leads

- Augmented unipolar limb leads
- Modified chest leads or Unipolar chest leads
- Frank lead system or corrected orthogonal leads

Bipolar Limb Leads:

Bipolar limb leads are also called as standard leads bipolar limb lead system is first introduced by “Einthoven”. In this lead system the potentials are trapped from Four locations of our body, they are right arm, left arm, right leg and left leg.