

File:AC.png

The source of 60 Hz. pickup is the 60 Hz. current which supplies power to the electrical wall outlets. The 60 Hz. energy "radiates" from the electrical wiring in the patient's room and is received in the lead wires and by the patient. The source of radiation cannot be eliminated, but modern monitors can reduce 60 Hz. pickup by filtering and by an electronic technique called common mode rejection. This technique requires good skin contact by all electrodes. One or more electrodes with poor contact will result in the wide fuzzy baseline.

Alternating current (AC) describes the type of electricity that we get from the wall. In the United States, the 60 hertz. Many places in Europe use 50 Hz AC electricity. When an ECG machine is poorly grounded or not equipped to filter out this interference, you can get a thick looking ECG line. fig 1.

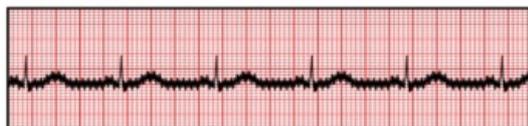


Fig 3 shows that when AC power to the electrical wall outlets.

❖ 2) Offset signals produced by the electrode itself:

An offset potential is a voltage that is stored by the electrode. This stored voltage will add to the ECG signal and interfere with it. The offset potential causes the disappearance of the ECG after defibrillation. The amount of offset potential and the length of time required for it to dissipate are determined by the materials used for the electrode and the gel. Certain combinations of metals and gels generate large voltages (up to 200 millivolts) with the ability to hold this voltage for long periods of time. Electrode materials such as silver-silver chloride do not allow significant build-up of offset potential, whereas stainless steel electrodes have poor offset characteristics. Most electrodes used for ECG monitoring today are made of silver-silver chloride. With the common use of the silver-silver chloride electrode, offset potentials are no longer considered to be a significant problem.



Fig 4. Shows that when offset potential voltage that is stored by the electrode.

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