

Electrodes Types

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- Microelectrodes
 - Metal Micro electrodes
 - Non metallic or Micropipette
- Surface Electrodes or Body surface Electrodes or skin surface Electrodes
 - Immersion Electrodes
 - Plate Electrode or Metal Plate Electrodes
 - Suction cup Electrodes
 - Floating Electrodes
 - Spray on Electrodes
 - Disposable Electrodes
 - Special Electrodes – Ear-clip Electrode, EEG scalp surface Electrode
- Needle Electrode

Non metallic or Micropipette Electrode

- The micropipette type of microelectrode is a glass micropipette with its tip drawn out to the desired size.
- It consists of glass micropipette of diameter 1 micrometer.
- The micropipette is filled with an electrolyte which should be compatible with the cellular fluids.
- Stem of Micropipet has a thin flexible wire made out of chloride silver, stainless steel or tungsten.
- One end of the Micropipet attaches to the rigid support and other free end rests on the cell.
- A micropipette is a small and extremely fine pointed pipette used in making microinjections.

Types of surface electrodes

- The types of surface electrodes are as follows
 - Immersion Electrodes
 - Plate Electrode or Metal Plate Electrodes
 - Suction cup Electrodes
 - Floating Electrodes
 - Spray on Electrodes
 - Disposable Electrodes
 - Special Electrodes – Ear-clip Electrode, EEG scalp surface Electrode

Plate or Metal plate Electrodes

- These electrodes were separated from subject's skin by cotton pads soaked in a strong saline solution.
- The plate electrodes have generally smaller contact area and they do not totally seal on the patient.
- The electrode slippage and displacement of plates were the major difficulties faced by these type of electrodes because they have a tendency to lose their adhesive ability as a result of contact with fluids on or near the patient.
- Since these types of electrodes were very sensitive, it led to measurement errors.

Floating electrodes

- Motion artifact occurs due to the motion at the interface between electrode and electrolyte.
- These types of electrodes can eliminate the movement errors (called artifacts) which is a main problem with plate electrodes.
- This is done by avoiding any direct contact of the metal with the skin.
- Here the conductive path between the metal and the skin is the electrolyte paste or jelly.
- The advantage of this type is the mechanical stability.