single-unit recordings provide a method of measuring the electro-physiological responses of single neurons using a microelectrode system. When a neuron generates an action potential, the signal propagates down the neuron as a current which flows in and out of the cell through excitable membrane regions in the soma and axon. A microelectrode is inserted into the brain, where it can record the rate of change in voltage with respect to time. These microelectrodes must be fine-tipped, high-impedance conductors; they are primarily glass micro-pipettes or metal microelectrodes made of platinum or tungsten.

Microelectrodes can be carefully placed close to the cell membrane, allowing the ability to record extracellularly.

Single-unit recordings are widely used in cognitive science, where it permits the analysis of human cognition and cortical mapping. This information can then be applied to brain machine interface (BMI) technologies for brain control of external devices.

From: https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki** 

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=single-unit\_recording



Last update: 2024/06/07 02:56