

# The principles of electrosurgery

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Electric current is defined as the flow of charged particles through a circuit. Alternating current (AC), a type of current wherein current periodically changes direction, is solely employed in electrosurgery. The time taken to complete one positive and one negative alternation is called one cycle. Frequency, measured in Hertz (Hz), denotes the number of such cycles in 1 second; the more the cycles, the higher the frequency. Electrosurgical units (ESUs) work by converting electrical frequencies from the wall outlet (50–60 Hz) to high frequencies ranging from 500 to 3000 Hz. When current passes through a conductor at such high frequencies, energy is converted to heat, which is used to cut or coagulate tissue. It is important to bear in mind that human muscle and nerves are stimulated at frequencies below 10 Hz; therefore, ESUs must convert electrical frequency to a much higher frequency. The principles of electrosurgery

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