

SNS COLLEGE OF PHYSIOTHERAPY

**Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai
Coimbatore– 641035**

COURSE NAME : BASIC AND APPLIED PHYSICS

SUBJECT CODE : 6273

TOPIC : AC CURRENT

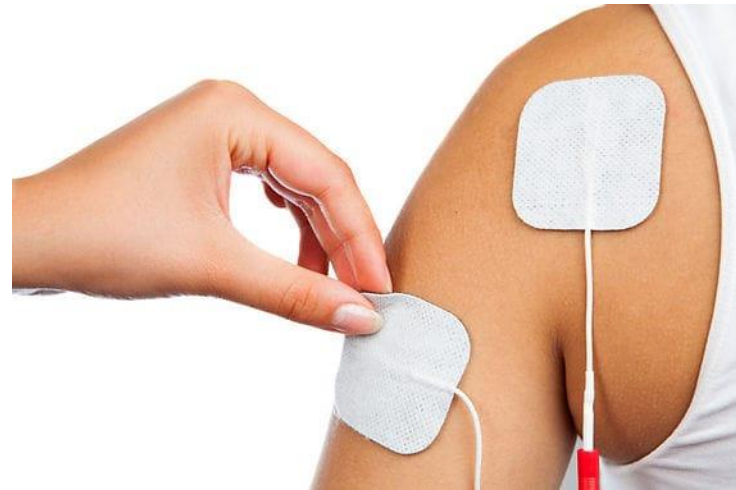
Empathize: Clinical Need of AC Current

- Pain modulation in musculoskeletal cases
- Muscle re-education post immobilization
- Need for safe alternating stimulation
- Reduced skin irritation vs DC
- Understanding patient comfort and therapeutic need is the first step.



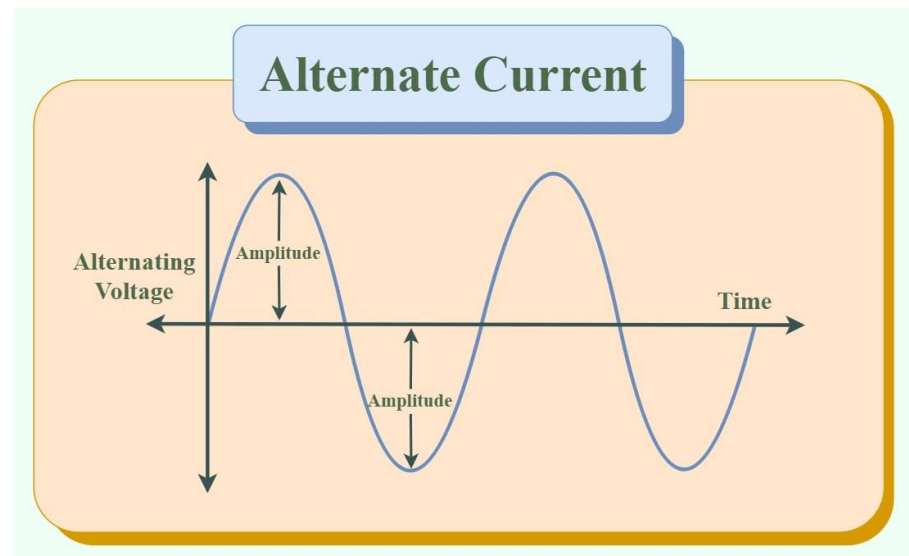
Empathize: Patient Experience with Electrotherapy

- Fear of electrical modalities
- Sensitivity to current intensity
- Need for rhythmic, non-fatiguing stimulation
- AC current offers smooth, alternating flow improving tolerance.



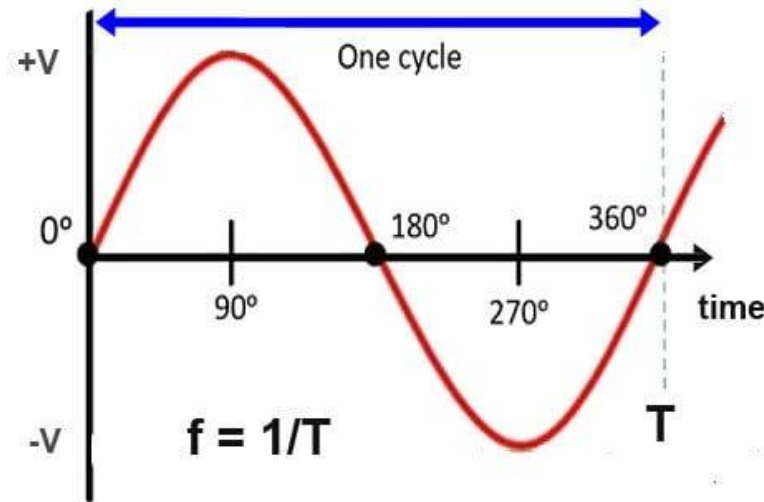
Define: What is AC Current?

Direction of flow changes periodically
 Characterized by frequency and amplitude
 Commonly used in physiotherapy devices



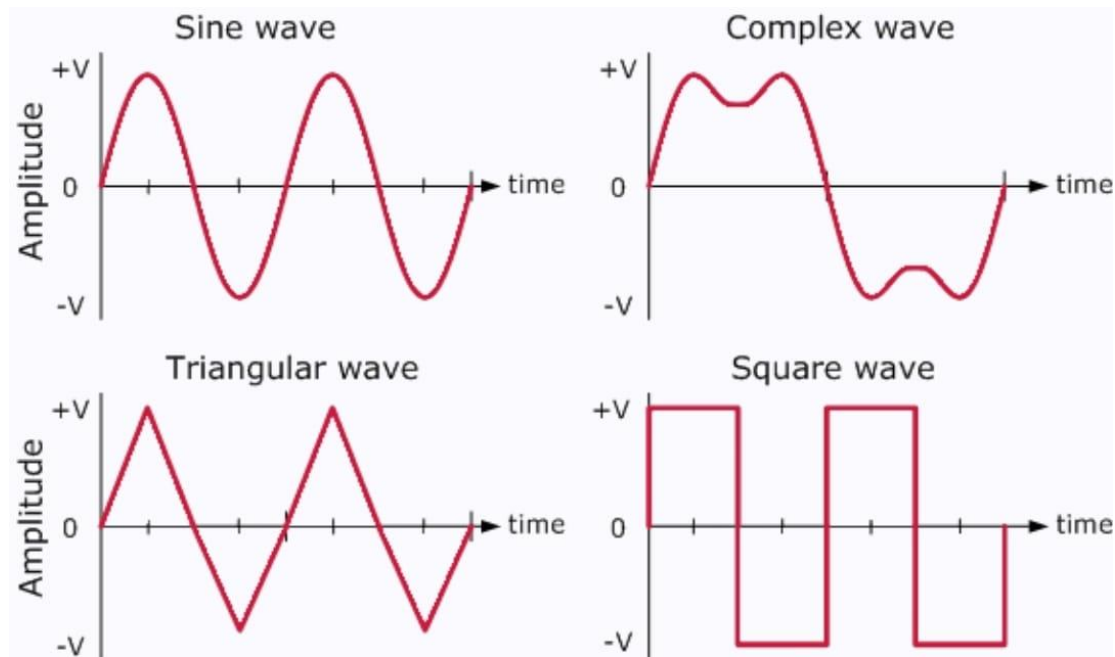
Define: Key Parameters of AC Current

Frequency (Hz)
 Amplitude (mA)
 Phase and cycle
 Waveform type



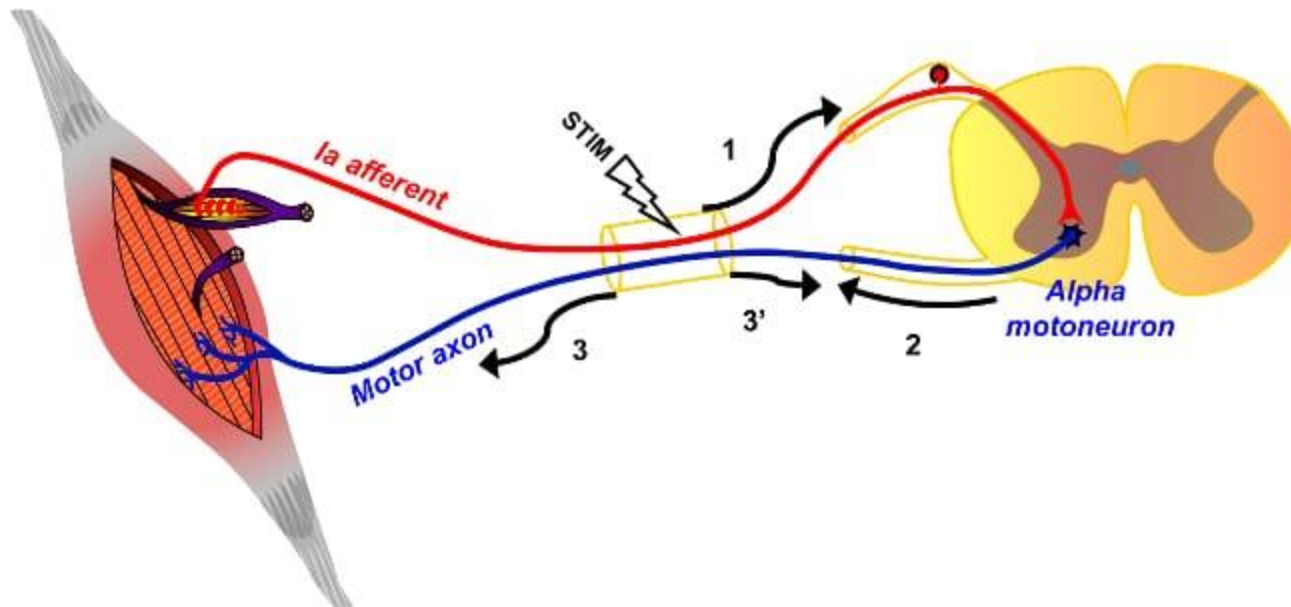
Ideate: Types of AC Used Clinically

- Sinusoidal current Faradic type current Russian current (medium frequency)
- Different AC forms are selected based on treatment goals.



Ideate: Physiological Effects

- Sensory nerve stimulation
- Motor nerve activation
- Improved circulation
- Pain gating effect

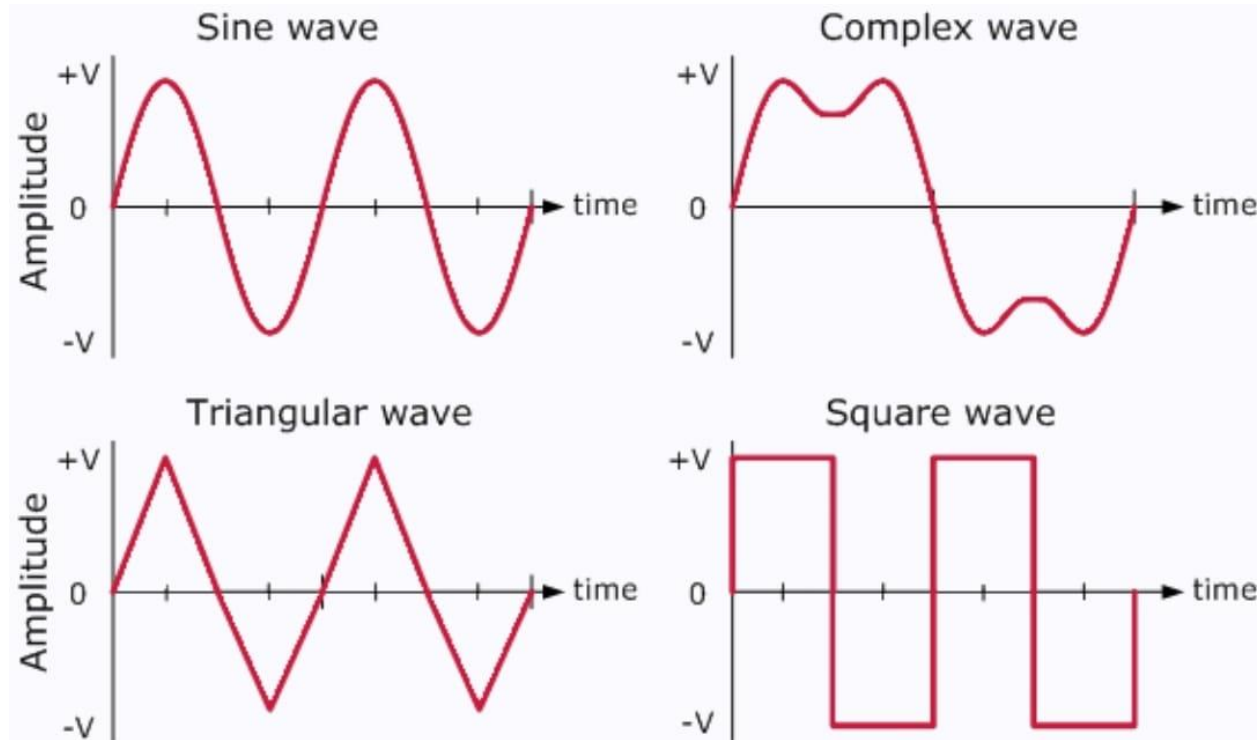


Prototype: Basic AC Circuit Concept

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- Power source
 - Conducting electrodes
 - Patient tissue as resistance

Prototype: AC Waveform Representation

- Positive and negative phases
- Zero mean current
- Smooth periodic pattern



Test: Clinical Application Example

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- Quadriceps strengthening post-surgery
 - Low frequency AC for muscle contraction
 - Monitor patient feedback

Testing ensures effectiveness and patient comfort.

Test: Exam & Viva Pearls

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- Define AC current
 - State advantages over DC
 - Draw labeled waveform diagram
 - Mention one clinical use