

# SNS COLLEGE OF PHYSIOTHERAPY

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

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**COURSE NAME** : Basic physics and biomechanics

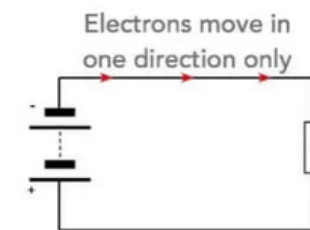
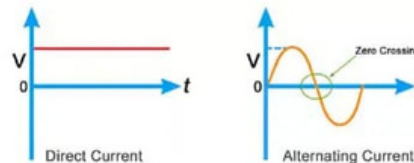
**SUBJECT CODE** : 6273

**TOPIC** : DC CURRENT AND CIRCUITS

# Understanding the Patient: Why DC Currents?

- Denervated muscle → flaccidity & wasting
- Chronic pain needing non-drug relief
- Non-healing ulcers → poor circulation
- Sensory loss limits AC use
- Empathy stage: Identifies patient needs where DC currents are clinically indicated.

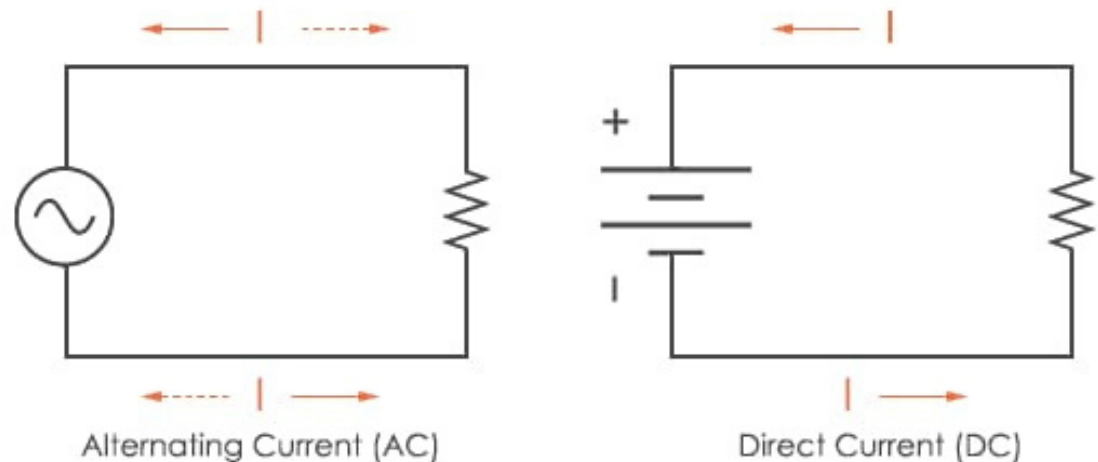
## What is DC Current?



Electrical 4 U

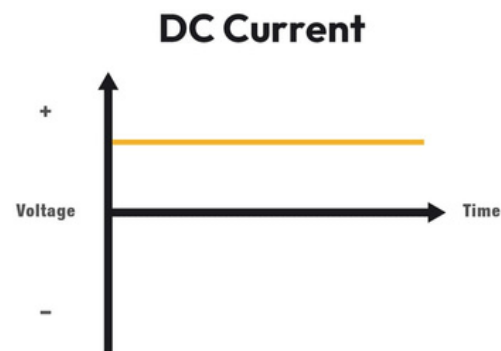
# Clinical Scenarios Requiring DC

- LMN lesions Post-polio residual paralysis
- Peripheral nerve injury Chronic edema & ulcers DC currents are preferred when AC currents fail to excite tissues.



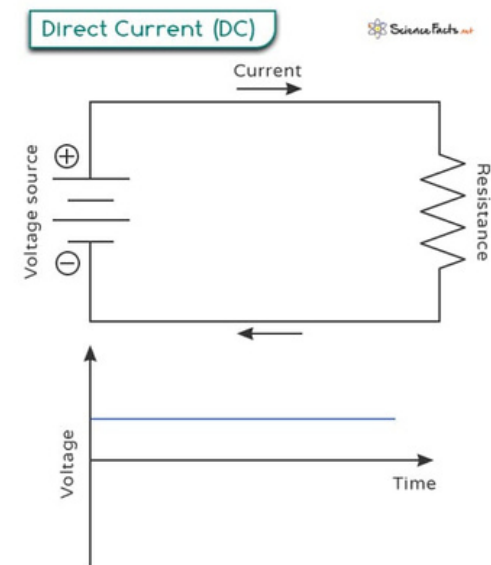
# Problem Definition in Electrotherapy Practice

- No response to faradic current Rapid
- muscle atrophy Persistent pain Delayed
- wound healing Defines why DC currents
- are selected as treatment.
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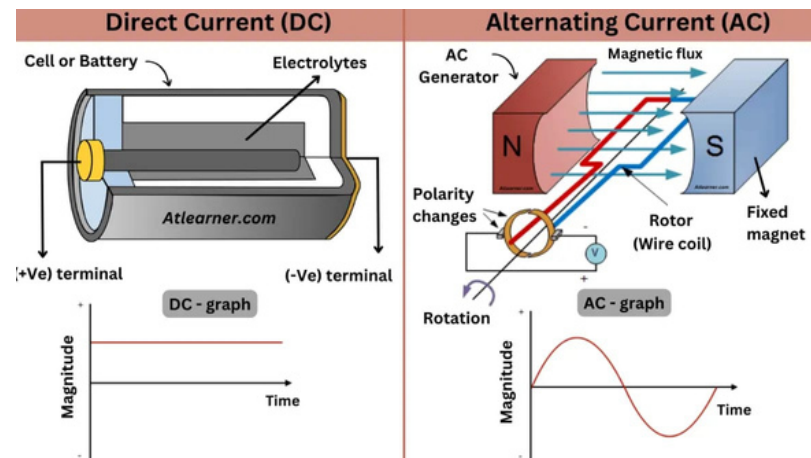
# Therapeutic Goals Using DC Currents

- Prevent fibrosis & contracture Maintain
- muscle nutrition Pain reduction Improve
- circulation Goals guide correct modality
- and dosage.
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# Choosing the Right DC Modality

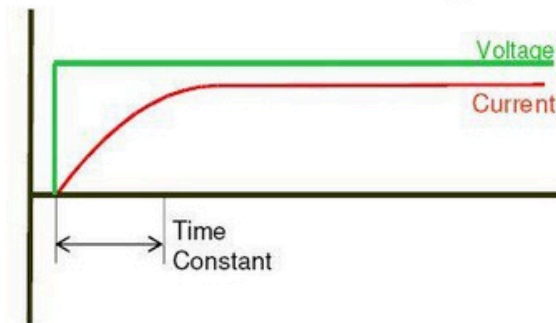
- Interrupted galvanic → denervated muscle
- Continuous galvanic → pain & ulcers
- Iontophoresis → drug delivery Polarity-based
- effects Ideation focuses on selecting the
- optimal DC modality.



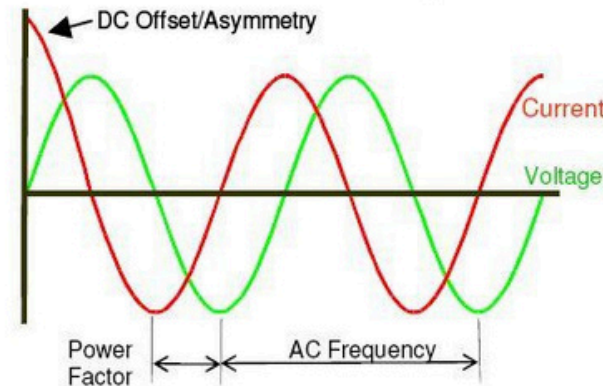
# Treatment Planning: Parameters & Technique

- Pulse duration: 100–300 ms Intensity: visible contraction
- Small active electrode Cathode for stimulation
- Correct parameters ensure effectiveness and safety.

- **DC Power Signal**



- **AC Power Signal**



# Setting Up DC Current Treatment

- Inspect skin Pad electrodes properly
- Increase intensity gradually Monitor
- comfort Prototype phase translates
- theory into practice.
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# Case Application: Denervated Muscle

- Case: Peroneal nerve injury Muscle:
- Tibialis anterior Current: Interrupted
- galvanic Slow visible contraction Case-
- based application improves clinical
- reasoning.

# Evaluating Treatment Effectiveness

- Increased muscle bulk Pain reduction
- (VAS) Improved granulation Functional
- improvement Testing validates
- therapeutic outcomes.
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# Reflection, Safety & Exam Pearls

- Prevent chemical burns Check
- contraindications DC = choice for
- denervation Polarity effects are viva
- favorites Reflection reinforces safety
- and exam- oriented learning.