

# **SNS COLLEGE OF PHYSIOTHERAPY**

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

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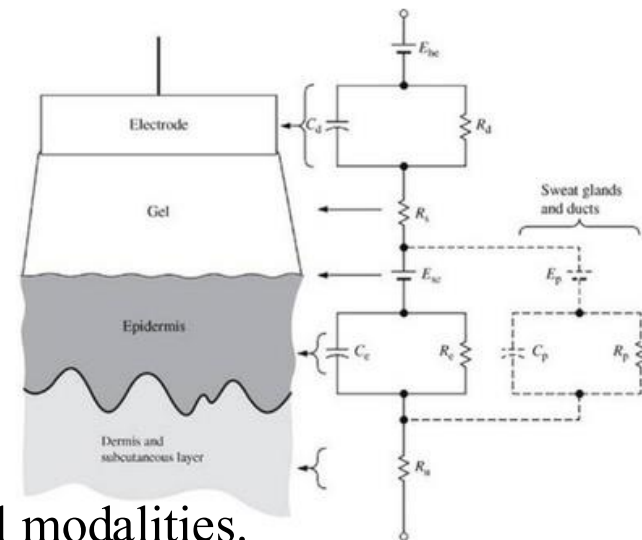
**COURSE NAME : Basic physics and biomechanics**

**SUBJECT CODE : 6273**

**TOPIC : TISSUE PHYSICAL PROPERTIES**

# Empathize: Clinical Problem

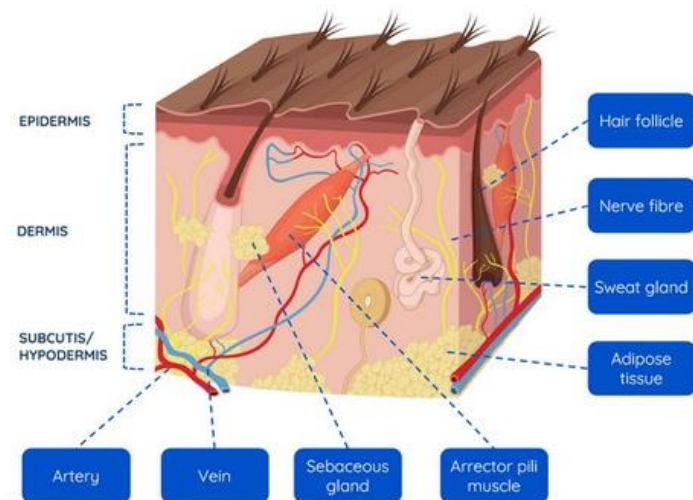
- Patient with pain during electrotherapy
- Variable skin resistance Poor treatment
- outcome Discomfort complaints



Understanding patient experience with electrical modalities.

# Empathize: Tissue Factors

- Dry skin increases resistance
- Adipose tissue  $\uparrow$  impedance
- Edema  $\downarrow$  resistance
- Temperature effects

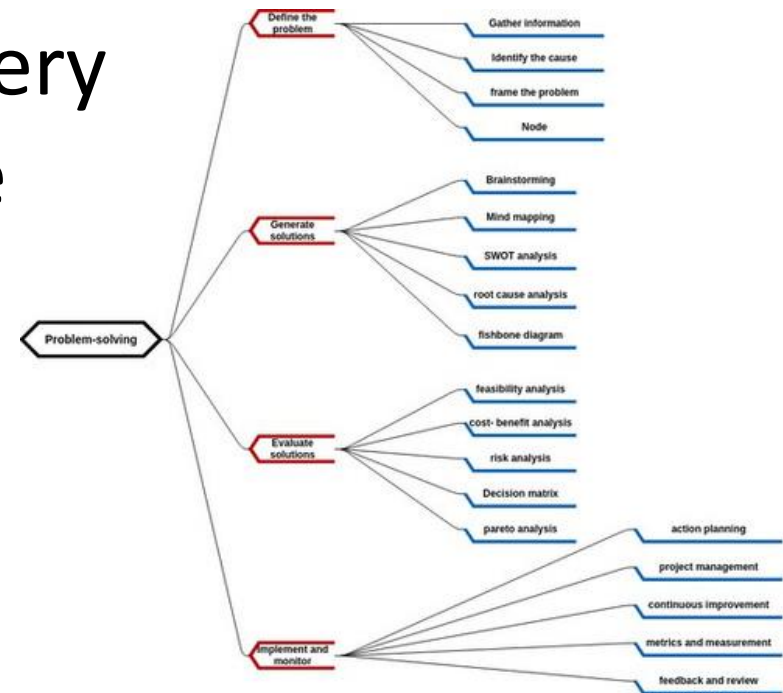


Clinical observation of tissue behavior affecting current flow.

# Define: Core Problem

- Inconsistent current delivery
- Unpredictable impedance
- Risk of burns Ineffective dosage

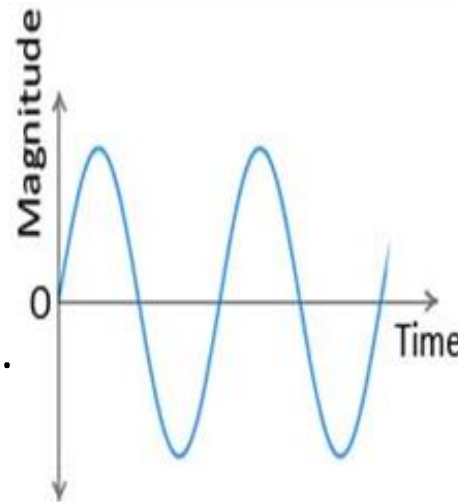
Clearly defining why therapy outcomes vary.



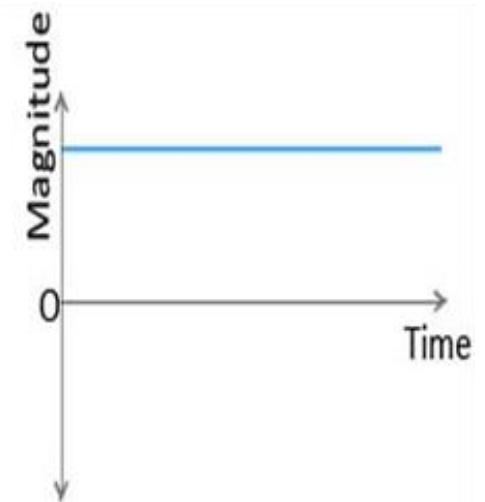
# Define: Learning Need

- Understand resistance vs impedance
- Frequency dependence Clinical
- relevance Exam importance

Clarifies academic and clinical gaps.



Alternating Current

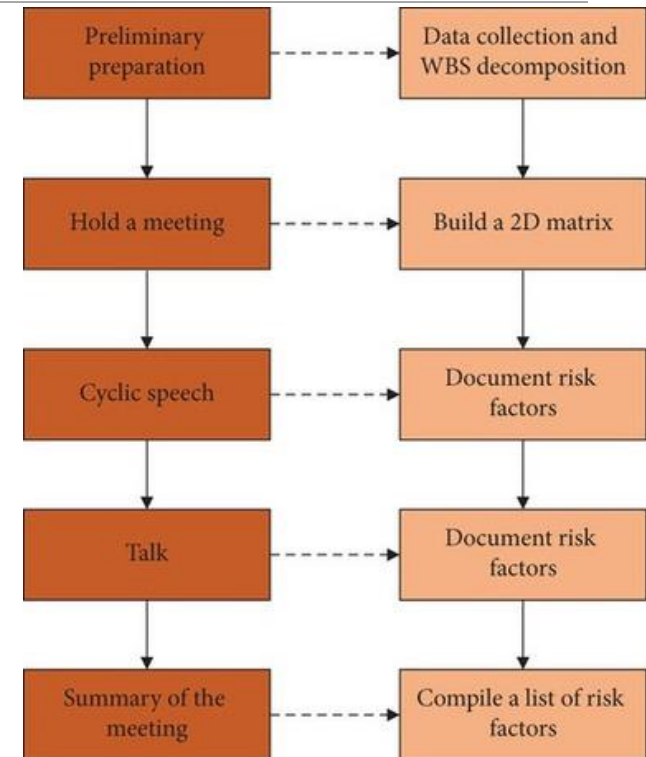


Direct Current

# Ideate: Clinical Solutions

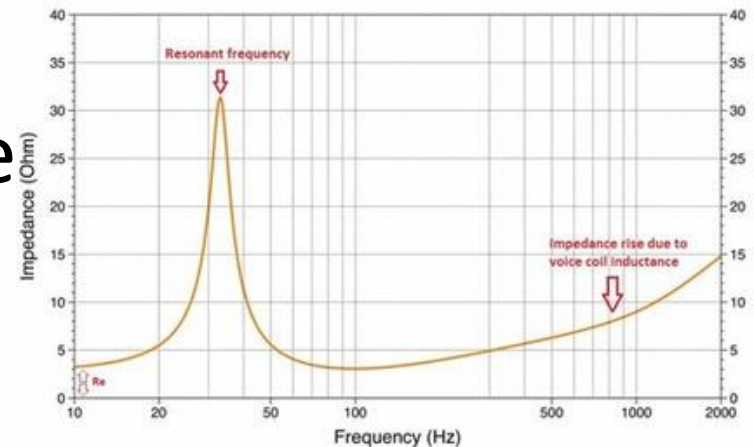
- Skin preparation
- Electrode size selection
- Use of coupling media
- Current modulation

Generating practical physiotherapy solutions.



# Ideate: Modality Selection

- Low freq → high resistance
- Medium freq ↓ impedance
- IFT advantage Case-based
- choice



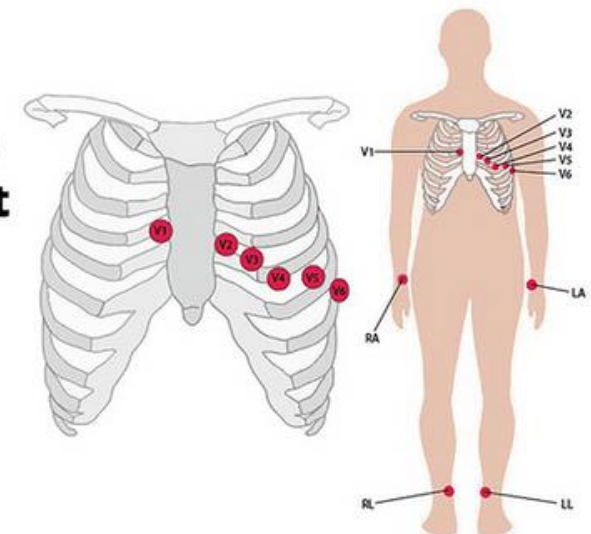
Choosing modality based on tissue impedance.

# Prototype: Application Strategy

- Warm-up tissue Optimal
- electrode placement Gradual
- intensity rise Patient
- feedback

Testing structured application method.

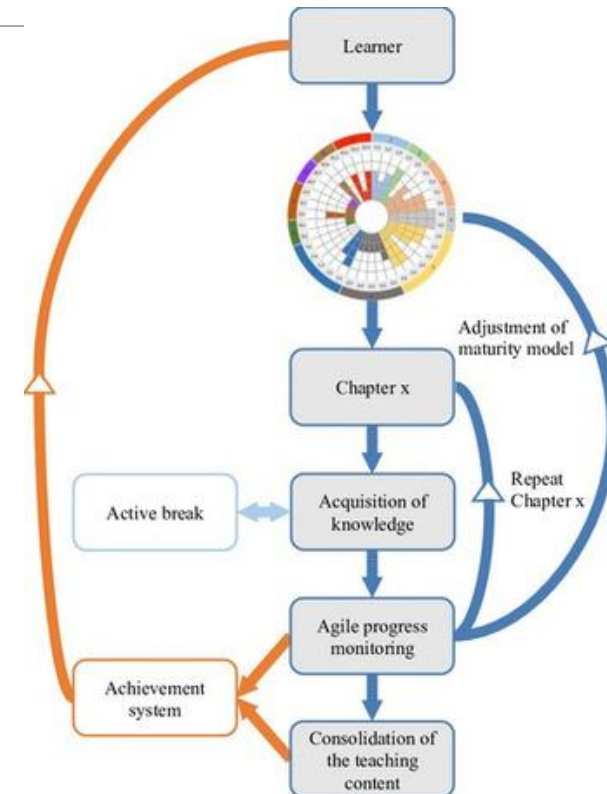
## 12-Lead EKG Electrode Placement



# Prototype: Teaching Model

- Case vignette
- MCQ framing
- Viva points
- Clinical correlation

Converting concept into teachable model.



# Test: Clinical Outcome

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- Improved comfort
- Consistent current
- Reduced burns
- Better results

Evaluating effectiveness in patient care.

# Test: Exam & Practice Integration

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- Case-based answers
- Flow diagrams
- Clinical reasoning
- PG-level clarity

Reinforcing learning through testing and reflection.