SNS COLLEGE OF PHYSIOTHERAPY

Affiliated To The TamilNadu Dr.MGR MedicalUniversity, Chennai
Coimbatore– 641035

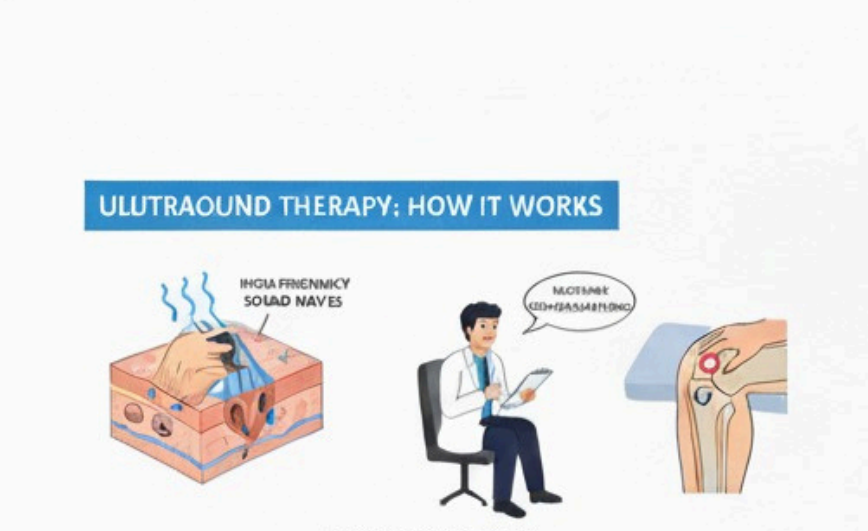
COURSE NAME :ELECTROTHERAPY

SUBJECT CODE : 6282

TOPIC :Condenser (Capacitor) Field Method of ShortWave Diathermy (SWD)

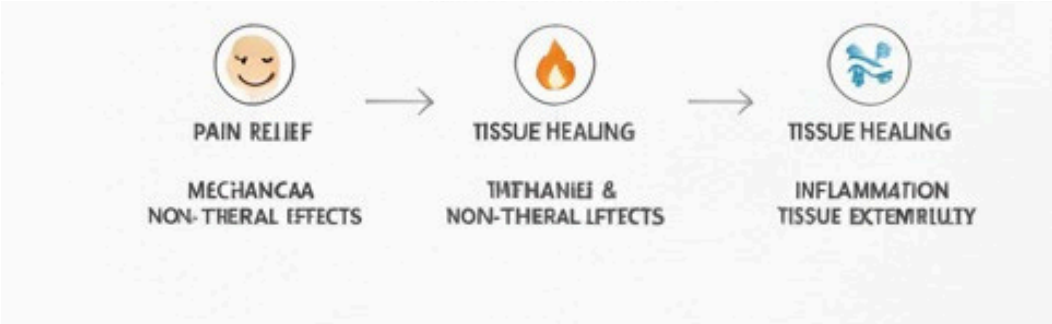
Definition

- The condenser field method, also called the capacitor field method
- It is one method of applying short wave diathermy (SWD)
- The body part acts as a dielectric medium between two electrodes Produces heat due to dielectric losses



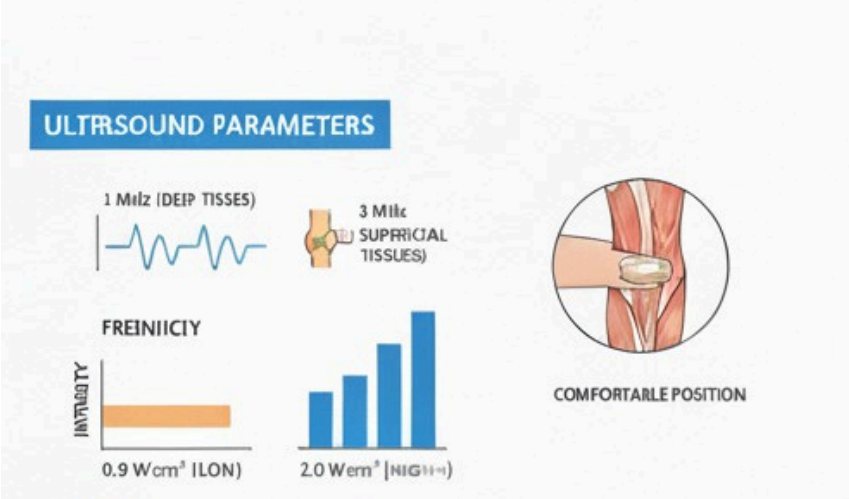
Empathize

- Used for patients with:
- Deep-seated pain
- Muscle spasm
- Joint stiffness
- Provides comfortable and uniform heating
- Suitable for areas with irregular contours
- Commonly used in physiotherapy departments

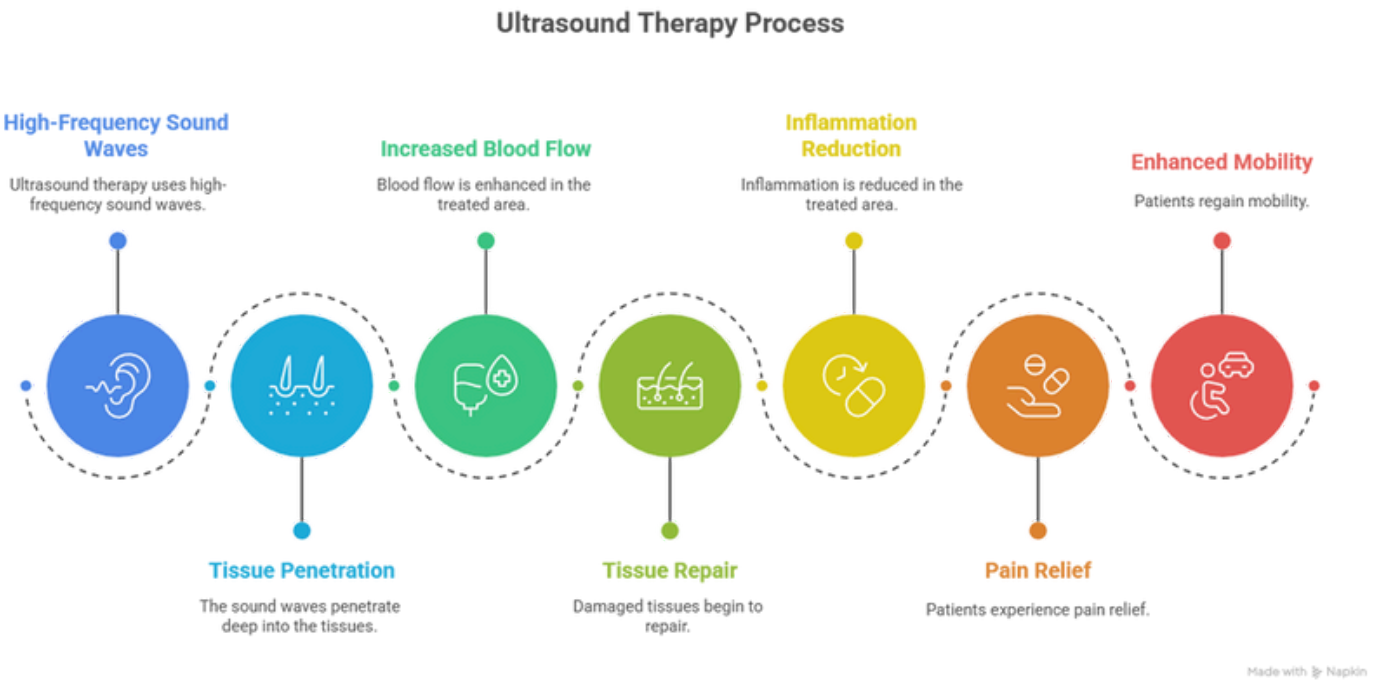


Ideate

- Based on the principle of capacitor Alternating electric field passes through tissues.
- Tissues resist the field causing Molecular vibration Heat production Fat and skin heat more than muscle



Flow Chart

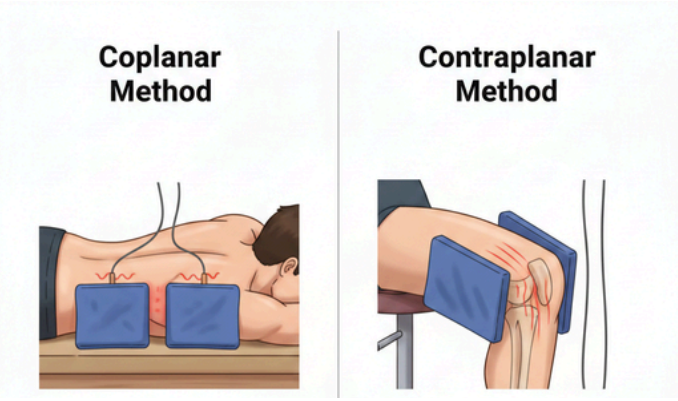

Ultrasound Therapy Process
High-Frequency Sound Waves
Ultrasound therapy uses high-frequency sound waves.
Tissue Penetration
The sound waves penetrate deep into the tissues.
Increased Blood Flow
Blood flow is enhanced in the treated area.
Tissue Repair
Damaged tissues begin to repair.
Inflammation Reduction
Inflammation is reduced in the treated area.
Pain Relief
Patients experience pain relief.
Enhanced Mobility
Patients regain mobility.
Made with Napkin

ELECTRODE PLACEMENT

- Two metal plate electrodes are used
  Covered with: Felt pads Towels

- Placement methods:
  - Contraplanar
  - Coplanar

- Equal distance maintained from skin



HEATING CHARACTERISTICS

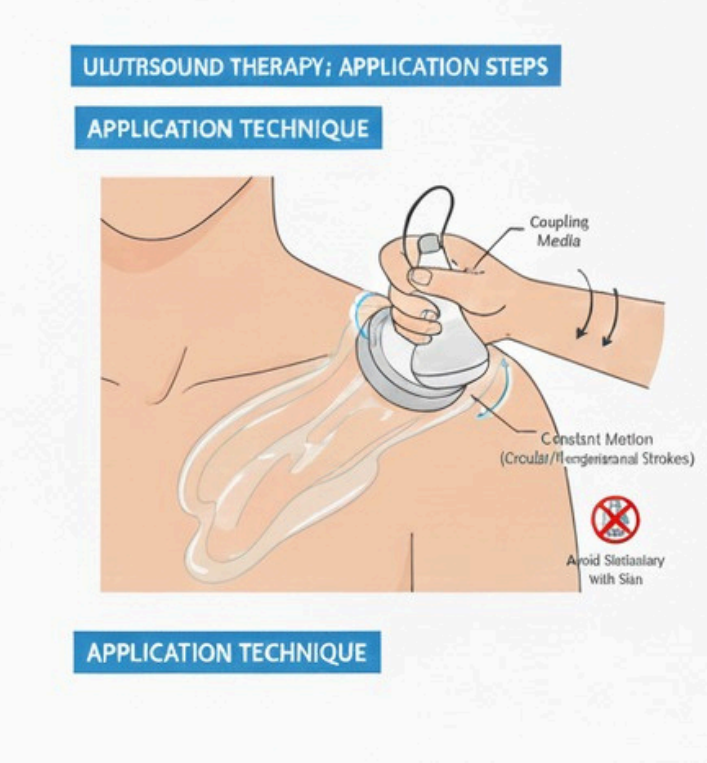
- Maximum heating in Skin
- Subcutaneous fat Less heating in Muscle Blood

Heating depends on:

1. Tissue resistance
2. Distance between electrodes
3. Risk of superficial overheating if improperly applied

INDICATIONS & CONTRAINDICATIONS

- Apply coupling media Keep transducer head In constant motion Circular or longitudinal strokes Maintain firm contact with skin Avoid stationary application Monitor patient feedback continuously



In class assessment

1.Define ultrasound therapy.

2. What is the purpose of coupling media?

3. Name two frequencies used in ultrasound therapy.

4. Mention one indication of ultrasound therapy.

5. State one precaution during ultrasound application.

In class assessment

1. Explain the steps of practical application of ultrasound therapy.

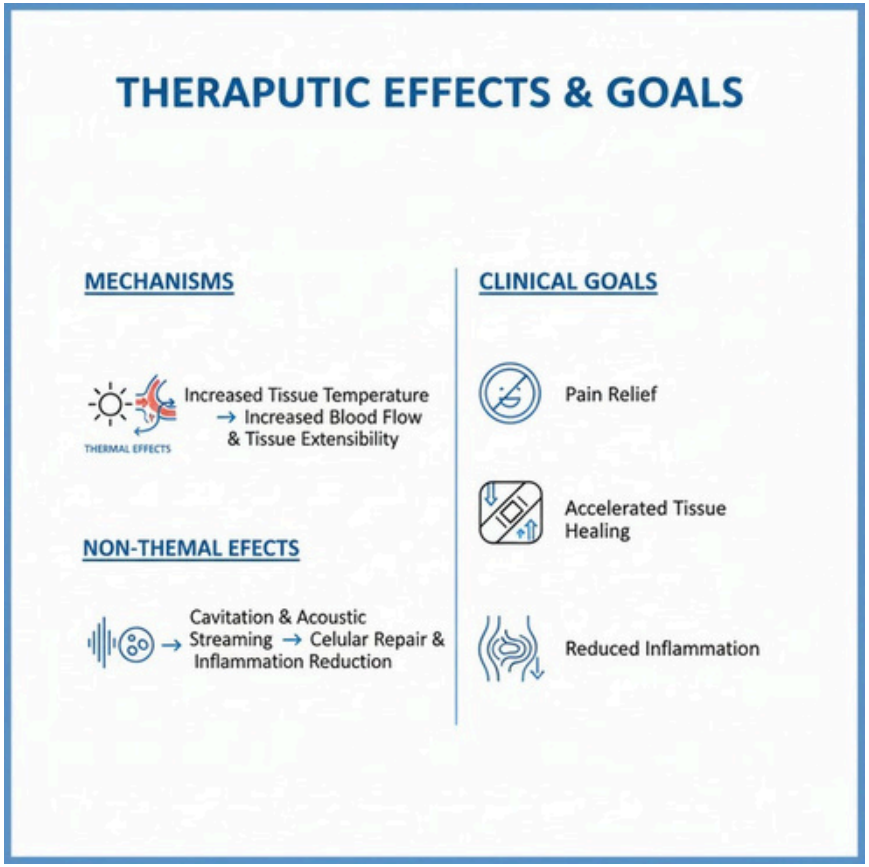
2. Differentiate continuous and pulsed ultrasound.

3. What are contraindications of ultrasound therapy?

4. Why should the transducer be kept in motion?

5. Mention therapeutic effects of ultrasound therapy.

Thank you


THERAPUTIC EFFECTS & GOALS
MECHANISMS
THERMAL EFFECTS
Increased Tissue Temperature → Increased Blood Flow & Tissue Extensibility
NON-THEMAL EFECTS
Cavitation & Acoustic Streaming → Celular Repair & Inflammation Reduction
CLINICAL GOALS
Pain Relief
Accelerated Tissue Healing
Reduced Inflammation