SNS COLLEGE OF PHYSIOTHERAPY

AffiliatedToTheTamilNaduDr.MGRMedicalUniversity,Chennai
Coimbatore– 641035

COURSE NAME :ELECTROTHERAPY

SUBJECT CODE : 6282

TOPIC :Practical Application of Ultrasound Therapy

Definition

Ultrasound therapy is a deep heating modality using high-frequency sound waves

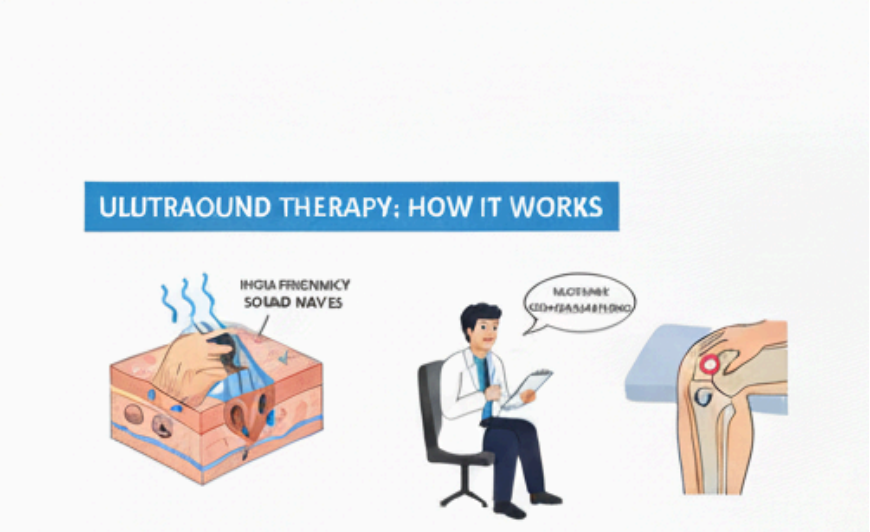
Practical application refers to the correct method of delivering ultrasound safely and effectively

Used to promote:

Pain relief

Tissue healing

Reduction of inflammation

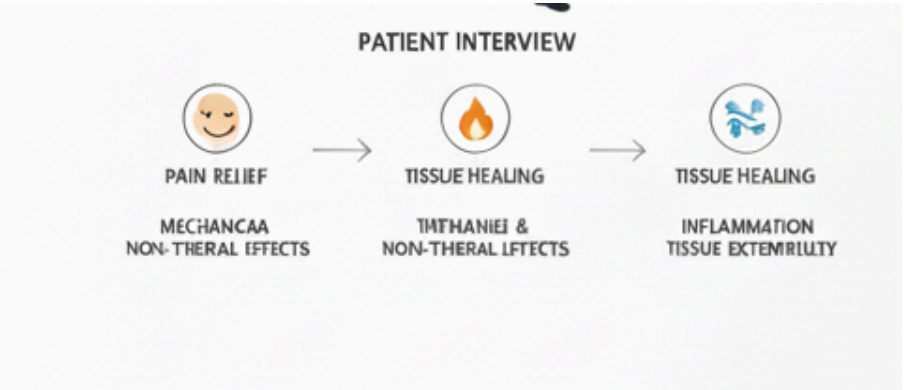


Empathize

Incorrect application can cause:

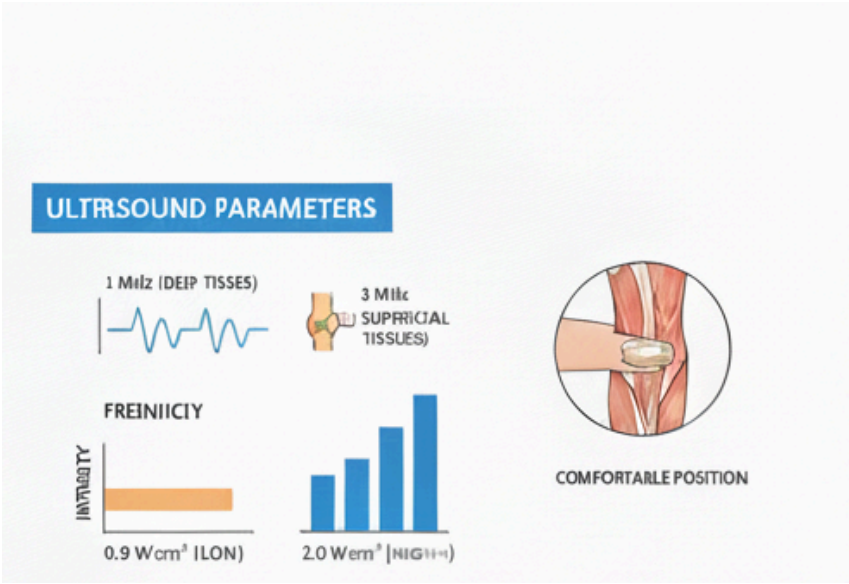
- Ineffective treatment
- Patient discomfort
- Tissue damage
- Proper technique ensures:
- Maximum therapeutic benefit
- Patient safety and comfort
- Commonly used in:
- Sports injuries

Chronic musculoskeletal conditions

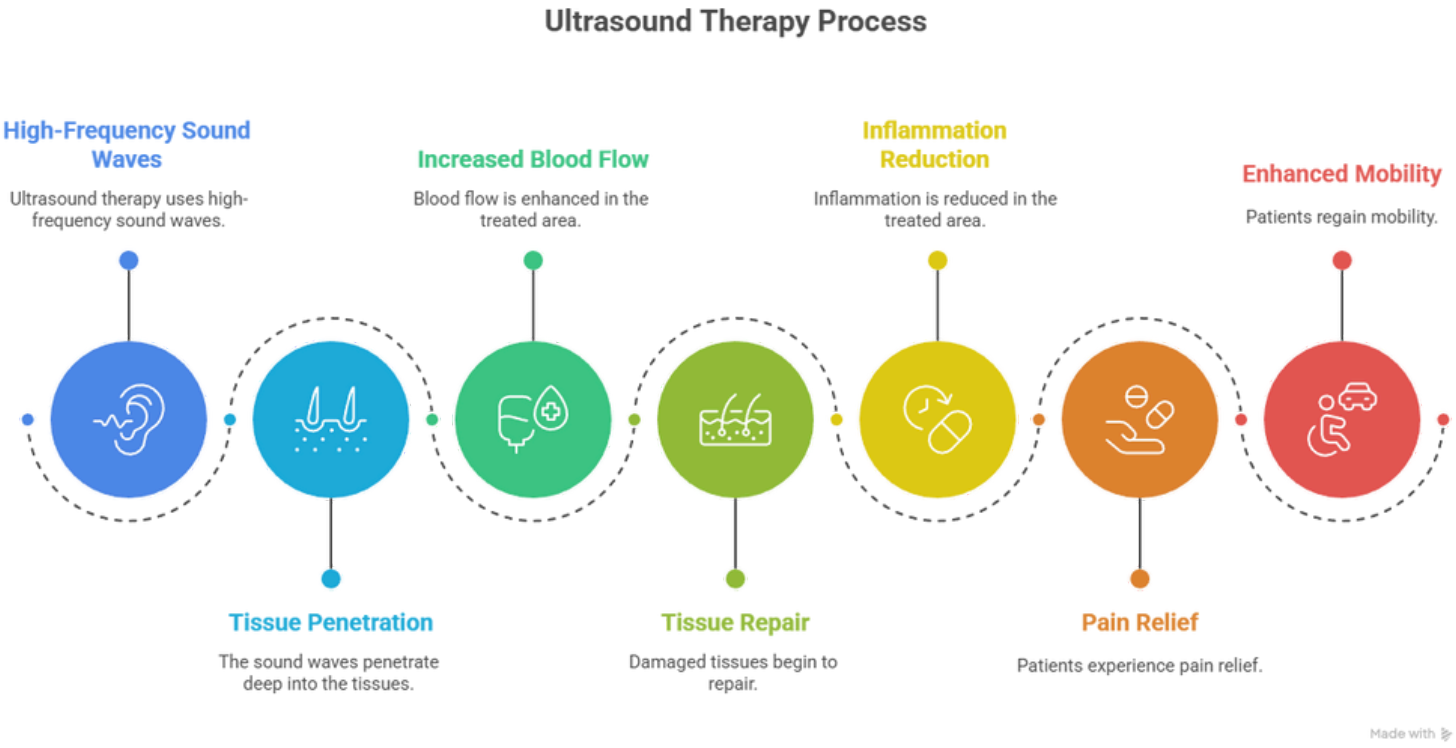


Ideate

Ultrasound waves cause:
Mechanical vibration of tissues
Thermal and non-thermal effects
Leads to:
Increased blood flow
Enhanced tissue extensibility
Accelerated healing
Correct application optimizes these effects



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

PRE-TREATMENT ASSESSMENT

Check:

Patient history

Contraindications

Explain procedure to patient

Inspect skin condition

Position patient comfortably

Select appropriate treatment area

TREATMENT PARAMETERS

Frequency:

1 MHz – deep tissues

3 MHz – superficial tissues

Intensity:

0.5–2.0 W/cm²

Mode:

Continuous – chronic conditions

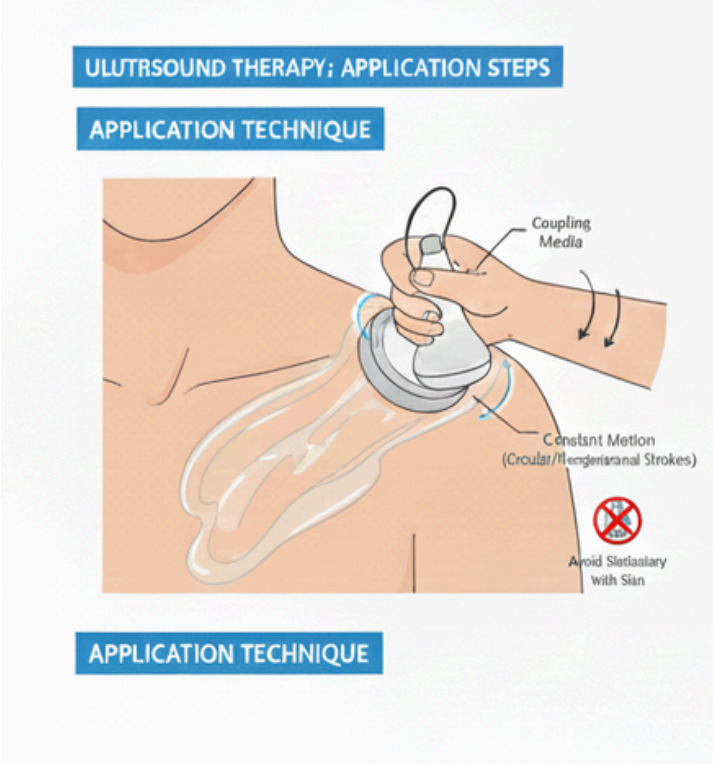
Pulsed – acute conditions

Duration:

5–10 minutes

APPLICATION TECHNIQUE

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



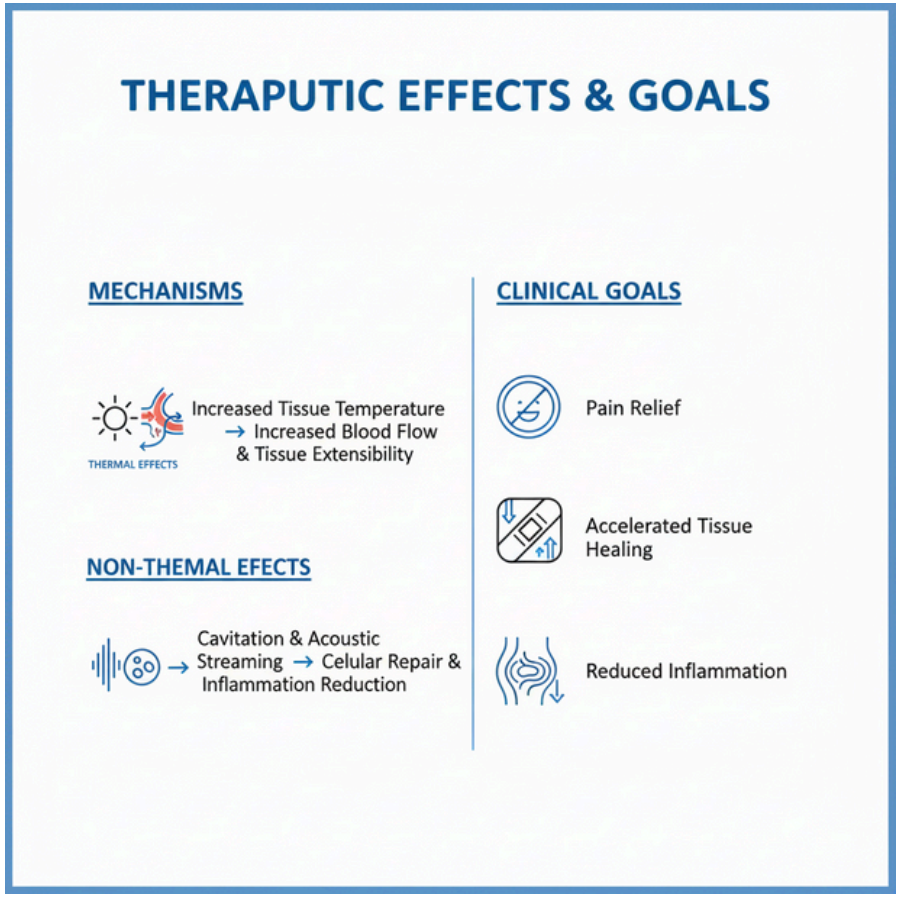
In class assessment

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