SNS COLLEGE OF PHYSIOTHERAPY

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COURSE NAME :ELECTROTHERAPY

SUBJECT CODE : 6282

TOPIC Production of Short Wave

(Short Wave Diathermy – SWD)

Definition

Production of Short Wave

Short wave diathermy (SWD) is a therapeutic modality that produces high-frequency electromagnetic waves.
These waves generate deep heating in body tissues.

Frequency used: 27.12 MHz (medical standard).

Heat is produced due to oscillation of ions and dipole rotation within tissues.

Used mainly for pain relief, muscle relaxation, and improved circulation

Empathize

Patients with chronic pain, muscle spasm, stiffness often need deep heating

Superficial heat modalities may not reach deeper tissues effectively

SWD helps patients who:
Have joint stiffness
Suffer from musculoskeletal injuries
Need non-invasive pain management
Therapist empathy ensures:
Proper dosage
Patient comfort
Safety and effectiveness

Ideate

Idea behind SWD:

Deliver deep, uniform heat without direct skin contact

Advantages:

Reaches muscles, ligaments, and joints

Covers large treatment areas

Helps in:

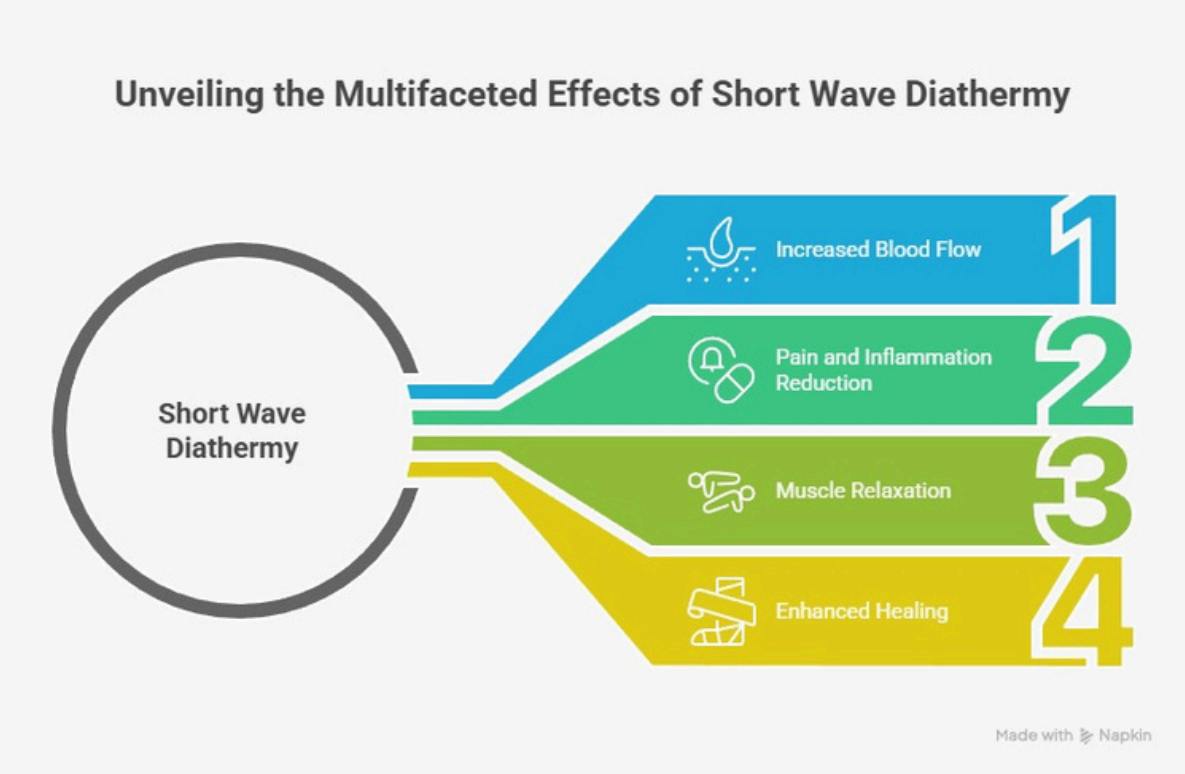
Increasing blood flow

Reducing pain

Improving tissue extensibility

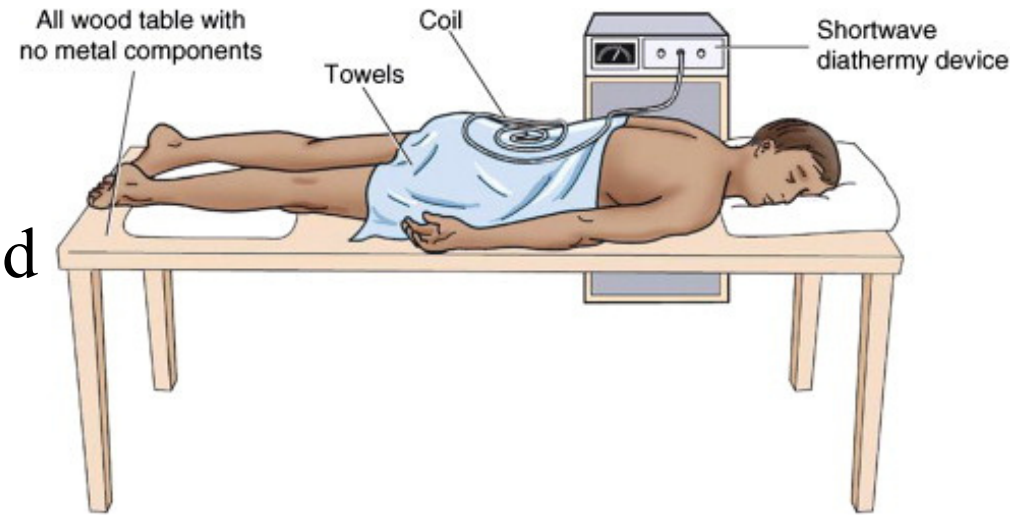
Innovative use in rehabilitation and sports physiotherapy

Flow Chart


Unveiling the Multifaceted Effects of Short Wave Diathermy
Short Wave Diathermy
Increased Blood Flow
1
Pain and Inflammation Reduction
2
Muscle Relaxation
3
Enhanced Healing
4
Made with Napkin

Techniques and Methods of Production

Two main techniques:
Capacitor (Condenser) Field Method
Inductor Field Method
Selection depends on:
Treatment area
Tissue type
Depth of heating required

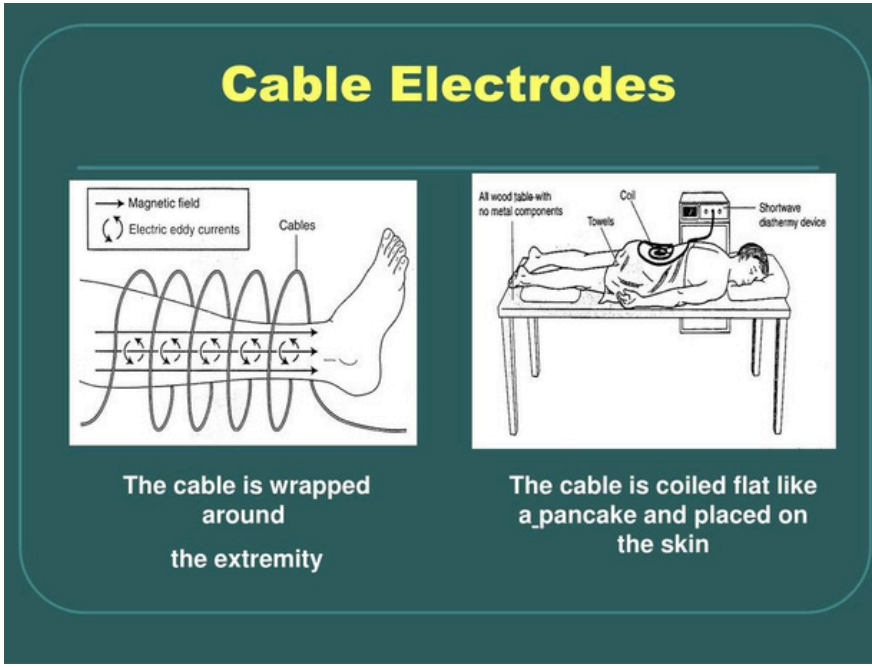


Capacitor Field Method

Patient's body acts as a dielectric medium.
Two electrodes placed on either side of the body part.
Electric field passes through tissues.
Heat production is greater in:
Tissues with low conductivity (fat, skin)
Used commonly for superficial and moderately deep tissues.

Condenser (Capacitor) Explained

Condenser consists of:
Two metal plates
Insulating material in between
In SWD:
Electrodes act as condenser plates
Body tissues act as dielectric
Proper spacing and insulation are important to:
Avoid burns
Ensure uniform heating



In class assessment

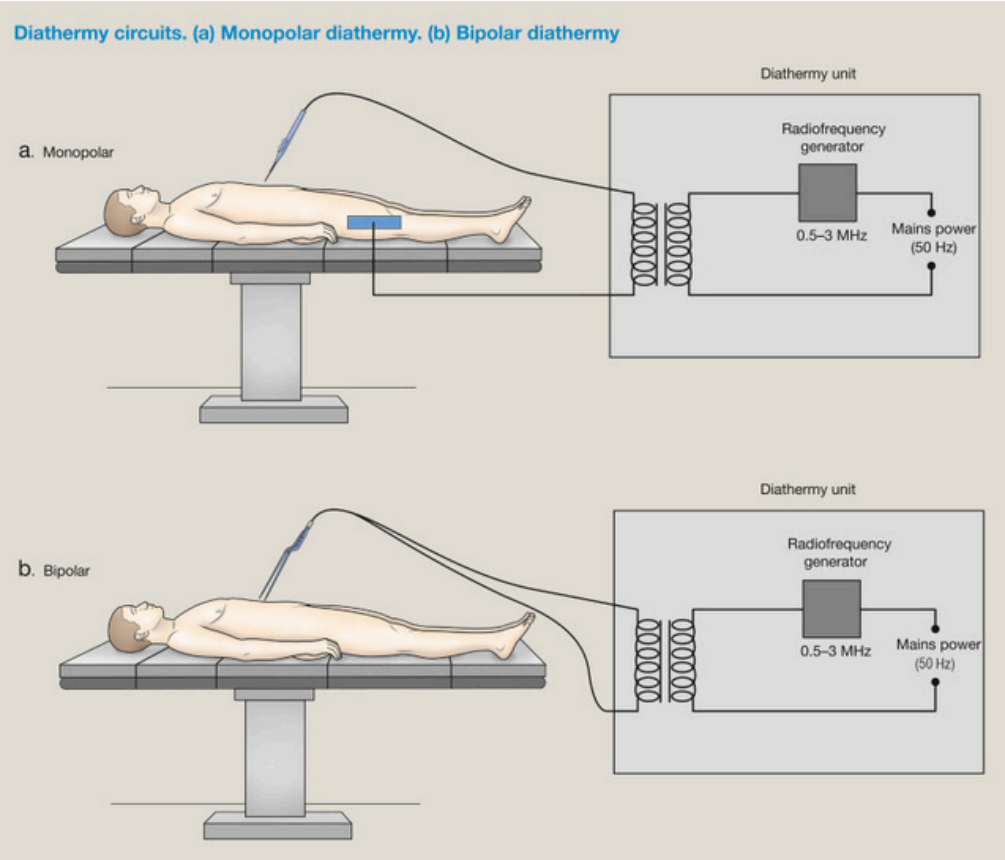
1. Define short wave diathermy.
2. What is the standard frequency used in SWD?
3. Explain the principle of production of short waves.
4. List two advantages of short wave diathermy.
5. Name the two main techniques of SWD.

In class assessment

1. What is the capacitor field method?
2. Which tissues heat more in the capacitor method and why?
3. What is meant by condenser in SWD?
4. Mention two safety precautions during SWD.
5. Differentiate briefly between capacitor and inductor field methods.

ELECTROTHERAPY/Production Of SW/MRS.B.MURSHIDHA

Thank you


Diathermy circuits. (a) Monopolar diathermy. (b) Bipolar diathermy
a. Monopolar
Diathermy unit
Radiofrequency generator
0.5–3 MHz
Mains power (50 Hz)
b. Bipolar
Diathermy unit
Radiofrequency generator
0.5–3 MHz
Mains power (50 Hz)