

Chapter: Short Wave Diathermy – Techniques & Methods of Application

1. You enter the SWD room to treat the first patient of the day. Write the exact sequence of THREE mandatory steps you perform on the machine before touching the patient.
2. After switching ON, you keep the machine running for 3–5 minutes with no patient connected. What is the clinical name of this step and its purpose? (one line)
3. The two fundamental techniques of applying SWD are: (A) _____ method (B) _____ method (write full technical names)
4. You are treating a patient with knee osteoarthritis. Which method (condenser or cable) allows you to treat the entire circumference of the knee in one go without moving electrodes?
5. Condenser field method – electrodes: Name the two types of electrodes commonly supplied with SWD machines (0.5 mark each).
6. A patient complains of burning sensation under one pad electrode even at low intensity. Most common cause related to electrode size selection?
7. Rule of electrode spacing: In condenser field method, the distance between the two active electrodes should NEVER be less than the _____ of the patient part (fill the blank).
8. Wide spacing vs Narrow spacing in condenser field: Write one clinical situation where you deliberately choose WIDE spacing (> patient part diameter).
9. Write the exact positioning terminology for the following: (a) Both electrodes on the same side of the limb (e.g., both on anterior thigh) → _____ (b) Electrodes on opposite sides (one anterior, one posterior) → _____ (c) One electrode active, the other is a large indifferent pad on the back → _____
10. You are treating chronic cervical spondylosis. Which special electrode positioning technique do you use to heat the entire neck thoroughly? (one term)
11. Cable method application: Name the two types of cables supplied with most SWD machines (0.5 mark each).
12. In the cable method, when you wrap the cable around the limb: (a) The heating is due to predominantly _____ field (electrostatic / magnetic) (b) The strongest heating occurs in tissues with high _____ (one property)
13. Biggest advantage of the cable method over the condenser method in day-to-day clinical practice (one short sentence).
14. Dosage in cable method is different from pad method. Classical spacing between cable turns and recommended treatment time for moderate heating?

15. Final safety question: While applying SWD with pads, you see small sparks and the patient shouts “burning!” Immediate three actions in correct sequence (½ mark each action).

ANSWER KEY:

1. (i) Switch ON mains → (ii) Warm-up time → (iii) Tune the patient circuit to resonance with dummy load or air tuning.
2. “Warming-up” or “Filament warming” – to stabilise valves/transistors and prevent sudden high output.
3. (A) Condenser / Capacitor field method (B) Cable / Inductance / Inductothermy / Magnetic field method
4. Cable method (circumferential wrapping).
5. (i) Flexible rubber pad electrodes (Schweder pads) (ii) Rigid circular/disc metal-in-glass electrodes (Kettering type)
6. Active electrode smaller than the treated part → current density too high → burns.
7. Diameter (or width) of the patient part.
8. When you want to heat deeper structures and reduce skin heating (e.g., hip joint, shoulder).
9. (a) Coplanar (b) Contraplanar (or opposite) (c) Monoplanar (or monode)
10. Cross-fire technique (treat anterior–posterior first, then right–left lateral).
11. (i) Monocord / Monode cable (ii) Diplode / Cable pair
12. (a) Magnetic field (b) High electrical conductivity (muscle, tendon, blood vessels)
13. Cable method produces negligible electrostatic field → minimal risk of burns even in thin patients or bony areas.
14. Spacing = 2–3 cm between turns; moderate heating = 15–20 minutes.
15. Immediate actions:
 1. Switch OFF intensity knob immediately
 2. Remove the electrode causing spark
 3. Check for air gap / apply more gel / use felt spacing pad.