

Chapter 2. Part 3. Treatment Modalities

Chapter 2 • Basic Concepts in Physiotherapy

Part 3 • Treatment Modalities

(A “modality” is simply any method or tool we use to help a patient recover.)

1 Therapeutic Exercise — *Using Movement as Medicine*

Question	Answer
What is it?	A planned set of movements that we prescribe just like a doctor prescribes tablets. The goal is to restore strength, flexibility, endurance, balance or coordination.
Why does it work?	Regular, graded movement tells muscles, bones and the nervous system to adapt. Muscles get thicker (hypertrophy), joints stay lubricated, blood flow improves and the brain relearns better movement patterns.
How do we choose an exercise?	We match the exercise to what the patient lacks. <ul style="list-style-type: none"> • Weak muscle? → Strength exercise. • Short muscle? → Stretching. • Poor balance? → Balance drills.
How hard, how often?	Use the FITT rule: F requency (how many days per week), I ntensity (how hard), T ime (how long each session), T ype (which movement). Start low and increase slowly <ul style="list-style-type: none"> • Wall push-ups for shoulder strength. • Static calf stretch 30 s × 3 for tight Achilles. • 5-minute brisk walk for heart fitness.
Simple examples	
Safety checks	Skip or modify exercise if the patient has severe pain, fever, dizziness, very high blood pressure, a fresh wound or a doctor’s restriction.

2 Electrotherapy — *Using Controlled Energy to Help Healing*

Tool	What it Feels Like	What it’s For	Typical Settings (for reference)	Do NOT use when...
TENS (small battery box with sticky pads)	Gentle tingling on the skin	Temporary pain relief (low back pain, knee arthritis, labour pain)	Fast pulse (80-120 Hz), comfy intensity, 20 min	Pacemaker in chest, numb skin, over the throat
NMES / FES (stronger current)	Visible muscle twitch / contraction	Waking up very weak or “shut-off” muscles after surgery or stroke	35-50 Hz, on:off 1:3, comfy level	Fresh fracture, deep vein clot, open stitches
Ultrasound (moving metal head with gel)	Mild warmth deep inside	Speeding tendon or ligament healing, softening scar	1 MHz for deep tissue, 3 MHz for shallow, 0.8-1.5 W/cm ² , 5 min	Over eyes, pregnant belly, cancer area
Infra-red / Laser	Gentle warmth or none (low-level)	Reducing swelling, helping wounds close	4-10 J/cm ² , 2-3 sessions/week	Same CIs as ultrasound plus thyroid area
Interferential (IFC)	Deeper buzzing (crossing currents)	Deep joint or back pain, swelling	Beat 80-100 Hz (pain) or 20-50 Hz (muscle)	Same as TENS

Easy rule to remember: Electrotherapy *reduces pain and prepares tissue*, but does **not replace** active exercise. Always combine the two.

3 Manual Therapy — Helping with Skilled Hands

Group	What the Therapist Does	Why It Helps	Typical Feel for the Patient
Joint Mobilisation	Small, rhythmic glides or gentle sustained pulls on a stiff joint (e.g., shoulder capsule)	Frees up tight joint surfaces; stimulates joint lubricant (synovial fluid)	Feels like a stretch, often “looser” afterward
Manipulation (HVLA “thrust”)	A quick, small movement at the joint end-range (often makes a pop)	Resets local muscles, reduces pain via nervous system	Sudden but usually painless “click” and relief
Soft-Tissue Techniques	Slow strokes, kneading, trigger-point pressure, instrument scraping (IASTM)	Breaks minor adhesions, improves blood flow, calms over-active muscles	Mild soreness during, relaxed feeling after
Neural Glides	Guiding a limb so that a nerve slides smoothly (e.g., sciatic slump-slider)	Reduces nerve tension, tingling, pain	Gentle pull that eases as nerve moves
Muscle Energy Techniques (MET)	Ask patient to push gently against resistance, then relax and stretch	Uses the muscle’s own reflex to lengthen it safely	Light effort then deeper stretch

Key safety check: Stop manual therapy if the patient has sharp pain, numbness spreading, severe osteoporosis, infection or if the joint is unstable.

4 Putting It All Together — A Simple Treatment Recipe

- Warm-up the area**
 - 5 minutes of heat pack or light cycling to increase blood flow.
- Manual therapy (if joint or muscle is stiff)**
 - Gentle joint glide or massage to prepare tissue.
- Main therapeutic exercise**
 - Strength or stretch that corrects the identified problem.
 - Follow the FITT progression—add only **one** variable each session (e.g., a little more weight **or** more reps, not both).
- Electrotherapy (optional adjunct)**
 - Short TENS session if pain is high, or NMES if the muscle cannot contract well yet.
- Cool-down & home advice**
 - Easy range movements, ice if swollen.
 - Give 1-2 simple home exercises and a pain/effort diary.

5 Example Case Walk-Through

Step	Action	Reason
Assessment	55-year-old with knee pain, quadriceps weak, knee bends only 90°.	Need to gain strength and range.
Session Plan	1. Heat pack 5 min. 2. Patellar mobilisations (Grade I-II). 3. Wall sits 3×10 s at pain-free depth. 4. NMES on quads 10 min. 5. Static quad stretch 30 s × 3.	Heat warms tissues → easier mobilisations; mobilisations improve glide; wall sits load quads safely; NMES adds extra muscle work; stretching maintains new range.
Home Work	Seated knee extensions with light band, 2×15; ice after activity.	Continues strength at home and controls swelling.



6 Common Questions Students Ask

Question	Simple Answer
“Which should I do first, manual therapy or exercise?”	Usually manual first to reduce stiffness/pain, then exercise to lock-in the new movement.
“Is electrotherapy outdated?”	No, but it is <i>adjunctive</i> . Use it to control pain or activate a very weak muscle, then move on to active rehab.
“How fast do I progress exercises?”	Increase one variable (load, reps, complexity) when the current dose is comfortable and there is no increase in next-day pain or swelling.
“What if a patient hates one modality?”	Respect their preference; choose another evidence-based option. Many paths lead to the same goal.

7 Safety Checklist Before Any Treatment

1. **Review contraindications** (open wounds, pacemaker, unstable vitals, etc.).
 2. **Explain and get consent** in simple language.
 3. **Check equipment:** clean pads, correct settings, timer on.
 4. **Stay within pain limit:** mild discomfort is okay; sharp pain is not.
 5. **Monitor throughout:** ask how it feels; watch skin colour and breathing.
 6. **Document:** what you did, dosage, patient response, and next plan.
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8 Key Take-Home Messages

- **Exercise is the core treatment**—everything else supports it.
 - **Manual therapy prepares; electrotherapy modulates; exercise changes tissue for good.**
 - **Start simple, progress gradually, reassess often.**
 - **Safety and patient comfort always come first.**
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