

Exercise Therapy

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Types of Stretching

Stretching techniques are classified according to how the stretching force is applied, the degree of patient participation, and the physiological principles used to facilitate muscle elongation.

1. Manual or Mechanical Stretching

Manual or mechanical stretching involves applying an external force to lengthen a shortened muscle–tendon unit and periarticular connective tissues by moving a restricted joint slightly beyond its available range of motion (ROM).

Manual stretching: The therapist applies the stretching force using their hands.

Mechanical stretching: An external device applies the stretching force.

The stretch may be sustained or intermittent, depending on the patient's condition and treatment objectives.

Types based on patient participation

A. Passive stretching: The patient remains as relaxed as possible while the therapist or a mechanical device applies the stretching force.

B. Assisted stretching: The patient actively assists the therapist in moving the joint through a greater range of motion.

Examples: Therapist-applied hamstring stretching, mechanical stretching devices, and therapist-assisted shoulder stretching.

2. Self-Stretching

Self-stretching refers to stretching exercises performed independently by the patient after appropriate instruction and supervision by a therapist.

- The patient controls the movement and intensity of the stretch.
- It can be incorporated into a home exercise program.
- It helps maintain or improve muscle flexibility and joint mobility.
- The terms self-stretching and flexibility exercises are often used interchangeably.

Example: A patient performs a doorway stretch independently to improve pectoral muscle flexibility. Active stretching is sometimes used as a synonym for self-stretching, although it can also refer to techniques involving active muscle contraction or neuromuscular facilitation.

3. Neuromuscular Facilitation and Inhibition Techniques

These techniques combine specific muscle contractions or neuromuscular procedures with stretching to facilitate muscle elongation. They are commonly associated with proprioceptive neuromuscular facilitation (PNF).

The patient performs a prescribed muscle contraction before or during the stretching procedure.

The therapist provides appropriate resistance and guides the movement.

The procedure aims to improve flexibility and range of motion.

Examples: Hold-relax, contract-relax, and contract-relax with agonist contraction.

4. Muscle Energy Techniques (MET)

Muscle energy techniques are manual therapeutic procedures in which the patient voluntarily contracts a muscle against a controlled counterforce applied by the therapist.

The therapist positions the affected joint or body segment at an appropriate point in the available range.

The patient performs a controlled isometric or other prescribed contraction against resistance.

The therapist then guides the body part into a new range, as appropriate.

These techniques are used to address muscle tightness and restricted joint mobility. Post-isometric relaxation is a related term commonly used for techniques involving relaxation after an isometric contraction.

Example: A patient performs an isometric hamstring contraction against the therapist's resistance, followed by gentle hamstring stretching.

References

1. Kisner C, Colby LA, Borstad J. Therapeutic Exercise: Foundations and Techniques. 7th ed. Philadelphia: F.A. Davis Company; 2017. Chapter 4: Stretching for Improved Mobility.
2. American College of Sports Medicine. ACSM's Guidelines for Exercise Testing and Prescription. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 2010.

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