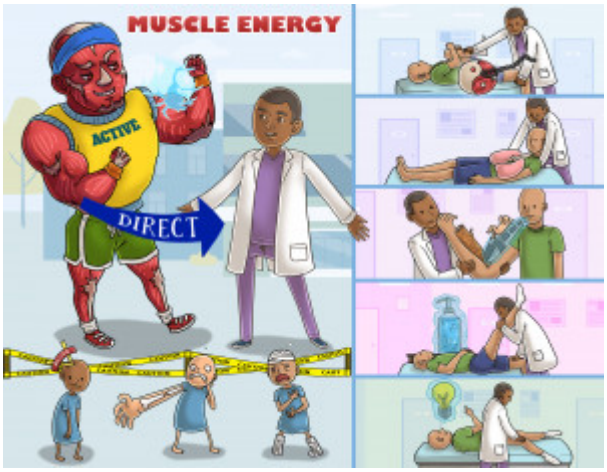
Muscle Energy

Muscle Energy is an Osteopathic Manipulative Treatment (OMT) technique in which the patient actively contracts their muscles against the physician's counter force. The patient attempts to move a body part towards freedom of motion, while the physician exerts a counter force towards the restrictive barrier. The barrier is engaged before each exertion and reset to normal by the treatment, i.e. the gap between the restrictive barrier and the physiological barrier is narrowed. Muscle Energy requires finesse by the physician, as the most effective treatment occurs when the very beginning of the restrictive barrier is engaged, sometimes called the "feather edge" of the barrier.



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Characteristics

Active
Active-gear
In a typical Muscle Energy treatment, the patient is contracting their muscles to assist with the treatment, which means this treatment is active.

Direct
Direct-route
In a typical Muscle Energy treatment, the physician will engage the restrictive barrier while the patient pushes into their freedom. The fact that the barrier is being engaged makes this a direct technique.

Types

Reciprocal Inhibition
Reciprocal-yin-yang in Inhibiting-chains
One type of Muscle Energy is referred to as reciprocal inhibition. In reciprocal inhibition, a spastic muscle (the agonist) is identified for treatment. The patient is instructed to contract that muscle's antagonist toward the restrictive barrier against resistance, which sends signals to the spinal cord to relax the spastic agonist muscle, thus completing the reciprocal inhibition reflex arc.

Respiratory Assistance
Lungs Assistant
One type of Muscle Energy is called respiratory assistance, where the physician uses the patient's voluntary respirations to restore normal range of motion. For example, a physician can exaggerate the movement of ribs during exhalation to treat an inhalation dysfunction.

Post-Isometric Relaxation
Post-ice-metro Relaxed
The most common type of Muscle Energy is Post-Isometric Relaxation. After diagnosing a somatic dysfunction (named for the freedom of motion), the physician then engages the restrictive barrier in all planes of motion by reversing the somatic dysfunction (e.g. a vertebra extended, rotated right and sidebent right must be engaged in a barrier that is flexed, rotated left and sidebent left). The patient contracts towards the freedom of motion and the physician applies a counterforce to prevent movement. A muscle contraction causing no change in muscle length is referred to as isometric. After 3-5 seconds of contraction the patient is instructed to hence "Post-Isometric Relaxation". This isometric contraction stimulates Golgi tendon organs to reduce the contracted muscle's tone. The next barrier is engaged and the cycle is repeated 2-3 more times.

Isotonic
Ice-tonic
Isotonic Muscle Energy is a technique in which patient contraction is greater than physician counter force, resulting in muscle shortening. This is used to strengthen weak or hypotonic muscles.

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Isolytic

Ice-light

Isolytic Muscle Energy is a technique in which physician counter force is greater than patient contraction, resulting in muscle lengthening. This is thought to break down fibrotic muscle changes.

Contraindications

Critically Ill

Critically Ill Patient

Post-surgical and ICU patients tend to have less physiologic reserve and are at increased risk of injury in the execution of a Muscle Energy technique.

Fractures

Fracture

Fractures are typically treated with some degree of immobilization. Muscle Energy technique may displace these fractures and worsen the patient's condition. Thus, Muscle Energy should not be used at the site of an unhealed fracture.

Acute Injury

Acute-angle Injury

Muscle Energy is relatively contraindicated in cases of acute muscle strains and sprains; this technique may exacerbate these conditions while they are in the acute stage.

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