BASIC PRINCIPLES OF MUSCLE ENERGY TECHNIQUE

Muscle Energy Technique (MET) was developed by Fred L. Mitchell, Sr., D. O. This technique is classified as an active technique in which the patient voluntarily uses his muscles from a precisely controlled position in a specific direction, against a distinctly executed counterforce. MET may be used to lengthen shortened or spastic muscle, to strengthen weakened muscles, to reduce localized edema, or to mobilize restricted joint motion. The function of any articulation in the body which can be moved by voluntary muscle action, directly or indirectly, can be influenced by MET. The amount of force or effort applied by the patient and the operator may vary from minimal to maximal contractions. The duration of the contraction may vary from a few to several seconds. Three types of muscle contraction may be used: isometric : the patient and operator force are equal, and may be used to lengthen short, spastic or contractured muscles; isotonic: in which the operator force is less than the patient's force, thus may be used to tone or strengthen weakened muscles; isolytic: may be used to mobilize a contractured joint by having the operator force greater than the patient's - - but always preceded by a few isometric contractions.

MET is classified as an active technique with direct positioning in which motion or restrictive barriers are engaged, but not stressed. The patient is asked to make a precise muscle effort with specific, carefully worded instructions given to the patient. The resisting counterforce provided by the operator gives cues to the patient to judge direction, intensity and duration of the contraction. Bear in mind that a great deal of force is not necessary, as we are using neurologic mechanisms to make corrections.

Two specific reflex mechanisms are utilized to accomplish our goal of treating a specific muscle:

The reciprocal inhibition reflex is the first. When an agonist muscle contracts and shortens, its antagonist must relax and lengthen so that motion can occur in the agonist muscle. The contraction of the agonist reciprocally inhibits antagonist so that smooth motion may occur. A simple example of this is that one cannot flex the elbow unless the extensors relax.

As repetitive isotonic contractions occur in the muscle, against progressive resistance, increased tone and performance of a muscle will occur. In this way a weak muscle's tone can increase.

Afferents from both Golgi tendon receptors and gamma afferents from spindle receptors feed back to the spinal cord. Gamma efferents return to the intrafusal fibers, thus re-setting their resting length. This changes the resting length of the extrafusal fibers of the muscle. Thus, after an isometric contraction, a hypertonic muscle can be passively lengthened to a new resting length.

All of these muscle contractions influence the surrounding fascia, the connective tissue and the interstitial fluids, thus altering muscle physiology by reflex mechanisms. It is well to advise patients that they may experience an increase of muscle soreness or fatigue following MET, for the patient's muscle contractions result in lactic acid, carbon dioxide and other metabolic waste products to accumulate in the tissues until metabolized and transported. thus it is important that the patient not be over-treated. They should be advised to increase their water intake after MET.

All Muscle Energy Techniques have essential steps to be followed:

1. Accurate diagnosis of somatic dysfunction (SD) must be made.
2. The restrictive barrier must be engaged in all planes of motion for any given joint. In the spine those motions should be flexion or extension, sidebending right or left, and rotation right or left.
3. The operator must apply a distinct counterforce.
4. The patient applies an appropriate amount of muscle contraction, in the correct direction, and for a correct duration of time.
5. Complete relaxation of the patient's effort following muscle contraction, while the operator maintains the joint position.
6. The operator repositions the restrictive barriers in all planes while always palpably monitoring the joint.
7. Steps 3 to 6 are repeated one or two times.
8. Always recheck the findings to make certain the dysfunction is corrected.