

## **Case study**

### **Effect of Muscle Energy Technique in Patient with Chronic Neck Pain- A Case Report**

#### **Abstract**

**Introduction-**Chronic neck pain might lead to a change in muscle tissue fibres. Neck discomfort is a serious and prevalent sickness. It is common in the general population, and it frequently results in severe impairment. These alterations have an impact on the cervical spine's capacity to govern 3-D movement efficiently. A range of manual therapy approaches are available to assist relieve pain and impairment while also cervical spine range of motion enhancement and everyday mobility. More evidence for Muscle Energy Technique (MET) in treating such a condition was found. This case report describes muscular energy technique's effect on a patient who has been suffering from neck pain for a long time.

**Case presentation:** At the previous three months, a 27-year-old female accountant in a hospital with extended periods of sitting while working on a computer presented to our facility with neck pain. Increase in pain with looking up.

**Discussion-** The therapy was well embraced through this patient to muscle energy technique resulting in a high degree of flexibility in the cervical spine, reduce pain and improves flexibility and strength.

**Conclusion-** Physiotherapy has a significant effect Pain, strength, and range of motion are all factors to consider. The findings of this case study indicate that a specific muscle energy technique It's possible that a routine will help to alleviate the problem of neck pain, improves strength and functional ability

**Key words-** Chronic Neck pain, Muscle Energy Technique, Rehabilitation, Physical Therapy.

## Introduction

Neck ache is a painful condition that many people they have had at least once in their life (1) Neck discomfort is a prevalent cause of impairment in most patients: it is linked to daily activity limits, decreased work productivity, and a loss in quality of life(2,3). Because of the physical and psychological symptoms that are associated with neck discomfort, it has a socioeconomic impact(4–11). Around 80% of the broad adult demographics experiences neck discomfort at some point in their lives, with 30–50% experiencing it on a yearly basis(2,12). Neck pain can also be classified as mechanical or neuropathic, depending on whether it is ended up causing by a herniated disc, osteophyte, or spinal stenosis, or if it is caused by nerve root irritation ended up causing by a herniated disc, osteophyte, or spinal stenosis(13,14). According to epidemiology data from all across the world, the Neck pain is more common after a year of discomfort ranges from 17 to 75 percent, with an estimated prevalence of 40 percent, with a later stage predominance of 10 to 20%(1). The great majority of persons who suffer from neck discomfort do not receive total relief from their symptoms, resulting in a chronic and recurring condition. Between 50 and 85 percent of persons who have had neck pain at some time in their life report it returns 1 to 5 years later(15). In today's day and age, chronic neck pain is becoming ever more frequent(16). Physiotherapists or manual therapists are referred to about 59 percent of individuals with chronic neck discomfort. The costs associated with treating neck pain are significant(10). Neck discomfort is a multimodal condition that comprises physical, emotional, cognitive, and social elements(17). Neck pain is rarely caused by a significant medical condition (less than 1% of the time)(18). Most of the time, the pathoanatomical cause of neck discomfort is

unknown, and the agony is classified as physical or non-specific(19). As a result, The health history and physical examination of the patient are the most important aspects of his or her care for initial steps in determining the NP type(13). A radiograph showing the cervical spine in its natural state may then be helpful in determining the diagnosis(20). Normal cervical lordosis is generally lost on X-ray, which explains cervical muscular spasm(20). Magnetic Resonance Imaging (MRI) is a type of imaging that may be used to investigate soft tissue problems, and computed tomography (CT) can be used to assess bone health.(21) MET is an active manual technique, the physiotherapist does not regulate corrective force in a rehabilitative domain(22). In fact, the patient should have the ability to create varying-intensity directed voluntary contractions(23). As a result, It's a type of manual therapy for articulations of any kind with a limited range of motion. By inducing repetitive muscular movements, this procedure can ease muscle restriction or weakness, as well as lessen local oedema(24). Through deep tissue stimulation and localised vasodilation, MET suppresses sympathetic tone(25). After that, the patient can perform an isometric contraction and a post-isometric relaxation on the contracted muscle. Muscle constriction by a reciprocal agonist is also induced by MET. A physiological neuro reaction organ of the Golgi tendon causes this occurrence. Furthermore, when a therapist's pressure is too strong or partly corresponds as a result of a patient's efforts, by generating movement, a patient can cause others to move. an isotonic eccentric or concentric contraction(26). As a result, MET stands for "hands-on" treatment that involves Muscles are stretched, strengthened, and relaxed. It is a non-specific neck pain rehabilitative therapy approach aimed at restoring normal joint mobility and alleviating pain(27).

### **Case Report**

A 27-year-old female accountant in an hospital with long duration of sitting while working on computer presented to our facility with complain in the previous three months of neck discomfort. The neck discomfort was excruciating and became worse by movement. The onset of pain was gradual. Pain gets aggravated when she looks down or up. She complains of severe pain in looking up and complains disturbed sleep due to pain. On observation

patient was seen sitting position with rounded shoulder and forward neck. The Neck range of motion of the patient was considerably reduced on physical examination, and bilateral discomfort was evident. with reduced strength.

### Clinical Findings

The patient was seen sitting with a rounder shoulder and forward neck on observations. On physical examination there was decrease Cervical flexion, extension, rotation, and lateral flexion range of motion. Tightness was present on upper trapezius muscle with grade 2 tenderness. And reduces strength of cervical muscle

### Data Analysis

**Table 1: VAS**

On Rest	Muscle energy technique
Pre-test (1 <sup>st</sup> day)	9
Post-test (last day of 4 <sup>th</sup> week)	4

**Table 2 ROM**

Cervical flexion	Muscle Energy Technique
Pre-test (1 <sup>st</sup> day)	35 <sup>0</sup>
Post-test (last day of 4 <sup>th</sup> week)	55 <sup>0</sup>

Cervical Extension	Muscle Energy Technique
Pre-test (1 <sup>st</sup> day)	40 <sup>0</sup>
Post-test (last day of 4 <sup>th</sup> week)	70 <sup>0</sup>

Cervical lateral rotation	Muscle Energy Technique
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Pre-test (1 <sup>st</sup> day)	20 <sup>0</sup>
Post-test (last day of 4 <sup>th</sup> week)	40

Cervical rotation	Muscle Energy Technique
Pre-test (1 <sup>st</sup> day)	50 <sup>0</sup>
Post-test (last day of 4 <sup>th</sup> week)	75

**Table 3 Manual Muscle Testing**

Cervical flexors	Muscle Energy Technique
Pre-test (1 <sup>st</sup> day)	3
Post-test (last day of 4 <sup>th</sup> week)	4+

Cervical extensor	Muscle Energy Technique
Pre-test (1 <sup>st</sup> day)	3
Post-test (last day of 4 <sup>th</sup> week)	4+

**Table 4 Neck disability index**

	Muscle Energy Technique
Pre-test (1 <sup>st</sup> day)	54
Post-test (last day of 4 <sup>th</sup> week)	15

## **Therapeutic Management**

### Goals

- 1.Reduce pain
- 2.Enhancesm flexibility
- 3.Progresses range of motion
- 4.Improves strength

**Management-** The therapist will stand behind the subject. The patient will get 3-5 repeats 7-10 seconds of post-isometric relaxation with a 30-50 percent isometric contraction of the muscle to be stretched, followed by a 5-second rest interval, and then a stretch lasting 10-60 seconds. For four weeks, there will be five sessions per week. The impact of the examination before and after will then be examined.

### **Discussion**

The objective of this case is to study was to demonstrate the consequences of a specific action muscle energy approach on neck discomfort, pain-related motion anxiousness and dizziness in a patient who had begun to experience symptoms following 3 months of bed rest. The clinical hypothesis was that this patient's pain, dizziness, restricted range of motion, and restrictions in activity were caused by alterations in the Muscle Energy Technique's structure and function as a result of his prolonged bed rest. Through patient education, the initial intervention attempted to reduce her fear avoidance. The major treatments that followed were targeted at gradually restoring local motor control function. We believe that this strategy played a role in her lowered fear aversion. The patient stated that her ultimate aim was to be able to engage in all of her previous every day and professional activities sports without discomfort or dizziness. Within two weeks of starting treatment, all objective measures enhanced. The patient wasn't any more disoriented or discomfort after four weeks. According to the conclusions of this case study, it is possible to conclude that a specific muscular energy

technique program is helpful for neck pain and dizziness following an extended term of bed rest(28).

### **Conclusion**

Instead of attempting to create a pathoanatomical diagnosis when pathology is not present, as is the situation for the vast majority of individuals suffering from persistent neck pain, we propose creating a functional diagnostic based on the patient's symptoms and indications. The findings of this case study show that a MET regiment may be effective in training deep cervical muscle to decrease neck pain and dizziness following a lengthy duration of bed rest. A standardised physical examination should be performed after a patient's neck has been immobilised to determine the effectiveness of stabilising muscles.

### **Home programme**

Hot fermentation, stretching of the muscle and strengthening.

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