

## Effect of Spinal Stimulation on Monosynaptic Reflex by Medium Frequency Current

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### Abstract

Surface spinal stimulation with electrical stimulation plays a major role in the management of various neurological disorders and also reduces the spasticity. There are many previous studies where surface spinal stimulation had been used in various neurological disorders and purposes and mostly in these studies low frequency current are used but still there is no study to explain how surface spinal stimulation by two medium frequency currents influences on monosynaptic reflex. In present study Premodular IFC & Russian current by surface spinal stimulation has been used at T-12 & L-1 for 45 minutes to see how it influence on monosynaptic reflex by taking Pre & post readings. The mean, standard deviations were calculated for all variables. After that ANOVA was applied between pre & post reading of all variables after medium frequency currents and after that two currents were compared by paired t- value for all the parameters of monosynaptic reflex. It was concluded that spinal stimulation with medium frequency current resulted in a significant effect on monosynaptic reflex as there was significant effect on H-latency and H-amplitude, however there was non significant effect on H/M ratio & Premodular IFC produced greater effect than the Russian current.

**Key words: Monosynaptic reflex, Surface Spinal Stimulation, Medium frequency currents**

### Introduction

Electrotherapy is the treatment of patients by electrical means; in this electrical forces are applied to the body through which physiological changes occur for therapeutic purposes. Electrical stimulation helps in reducing spasticity in case of SCI, Cerebral palsy and Multiple sclerosis patients along with improvement in bladder function, respiratory function volitional control; active and passive movement and mood state with carry over effects lasting from 30 minutes to 24 hours (*Hazelewood et al, 1994*). American Physical Therapy Association acknowledges the use of electrotherapy in various fields such as pain management, tone management, treatment of neuromuscular dysfunction, improves

range of joint mobility, tissue repair, acute and chronic edema, peripheral blood flow, iontophoresis, Urine and fecal incontinence (*Alon et al, 2005*).

Surface Spinal Stimulation is delivered by pulses that are generated from amplitude modulated alternating current of a carrier frequency of 2500 Hz, and modulated to deliver beat at a frequency of 20 Hz. For application, an electrode is placed on each side of the spine (5cm apart) over the paravertebral skin at the twelfth thoracic and first lumbar vertebral levels. The self-adhesive electrodes of rectangular shape and size of 5×9cm are used. The stimulation amplitude is adjusted for each subject to produce only sensory stimulation and it is