



شبكة المعلومات الجامعية

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# شبكة المعلومات الجامعية

## التوثيق الالكتروني والميكرو فيلم

# جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

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بالرسالة صفحات  
لم ترد بالأصل

# **EFFECT OF TONIC VIBRATORY REFLEX ON REACHING IN SPASTIC HEMIPARETIC CEREBRAL PALSY CHILDREN**

**By**

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## **A Thesis**

Submitted in Partial Fulfillment for the Requirement of  
Master Degree in Physical Therapy

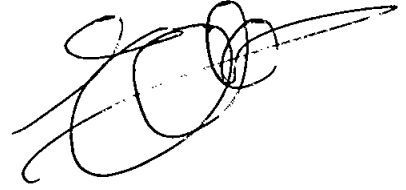
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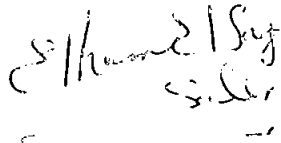
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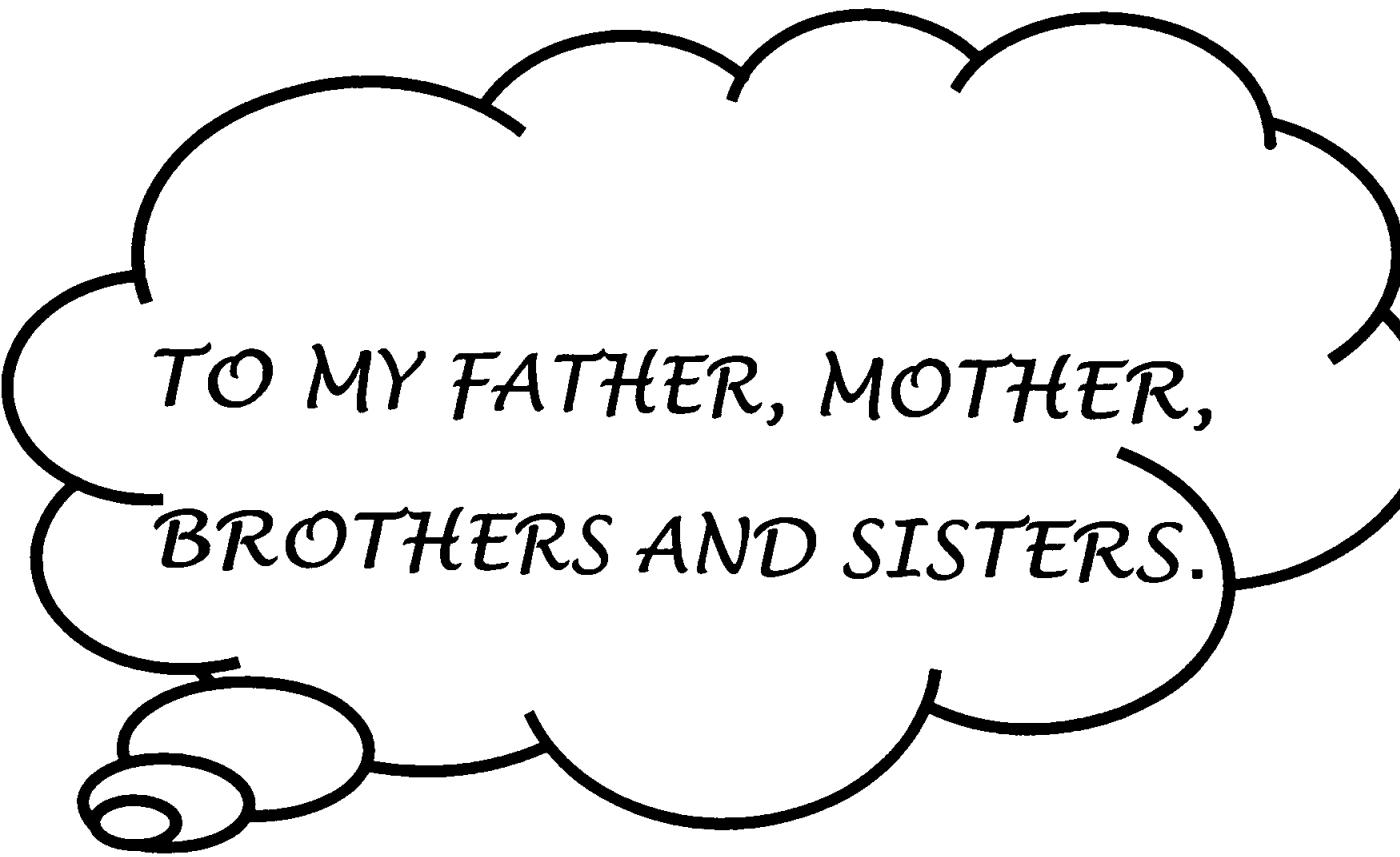
Finally, no words has a mean in front of my mother, brothers and sisters for their continuous support, patience and encouragement to finish this work.

**Marwa Mamdouh Ali**

**2005**



# DEDICATION



*TO MY FATHER, MOTHER,  
BROTHERS AND SISTERS.*

Effect of Tonic Vibratory Reflex on Reaching in Spastic Hemiparetic Cerebral Palsy Children / Marwa Mamdouh Ali; Supervisors: Prof.Dr / Emam Hassan El-Negamy- Prof.Dr / Elham El-Sayed Salem- Prof.Dr / Khaled Ahmed Mamdoh, Faculty of Physical Therapy, Cairo University, Department of Physical Therapy for Growth and Developmental Disorders in Children and its Surgery.

## **ABSTRACT**

The aim of this study was to evaluate the effect of tonic vibratory reflex on reaching in spastic hemiparetic cerebral palsy children. Thirty spastic hemiparetic children (16 females and 14 males) ranging in age from three to five years old participated in this study. The study sample was classified randomly into two groups (control and study) of equal numbers. The study group received traditional exercise program and reaching exercise programs after application of tonic vibratory reflex (TVR) for triceps and common extensor origin, while the control group received the same exercise programs as the study group without TVR. In all patients the angles of shoulder, elbow and wrist joints were evaluated during reaching before and after the suggested treatment program. The results collected before application showed no statistically significant difference between the two groups, while the difference between before and after application also significant in both groups. After application the difference between the two groups was statistically significant in favor of the study group. The significant improvement recorded in the control group may be attributed to the effect of traditional and reaching exercise program, while the highly significant improvement recorded in the study group may be attributed to the additional use of T.V.R. In conclusion additional use of T.V.R. to the regular exercise programs can be suggested to improve reaching in spastic hemiparetic C.P. children.

Key words: CP-tonic vibratory reflex -reaching-motion analysis.

## List of Abbreviations

Abbreviation	Name
AIIS	Anterior inferior iliac spine
ASIS	Anterior superior iliac spine
AVR	Antagonist vibratory response
CIBI	Continuous intra-thecal baclofen infusion
CNS	Central nervous system
COG	Center of gravity
CP	Cerebral palsy
HS	Highly significant
IQ	Intelligent equation
Max	Maximum
MD	Means difference
Min	Minimum
MOVE	Movement organization via education
MPJ	Metacarpo-phalangeal joint
$\bar{x}$	Mean
NDT	Neurodevelopmental treatment
NMES	Neuromuscular electrical stimulation
NS	Non significant
OT	Occupational therapist
p value	Probability value
PT	Physical therapist
ROM	Range of motion
S	Significant
SCI	Spinal cord injury

SD	Standard deviation
SDR	Selective dorsal rhizotomy
SI	Sensory integration
SPR	Selective posterior rhizotomy
TENS	Transcutaneous electrical nerve stimulation
TVR	Tonic vibratory reflex
3D	Three dimensional
UMNL	Upper motor neuron lesion

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