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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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بالرسالة صفحات لم ترد بالأصل

Effect of Incentive Spirometer Exercise on Pulmonary Functions in Children with Spastic Cerebral Palsy

Thesis

Submitted for Partial Fulfillment of the Master Degree in Pediatrics

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Contents

List of Abbreviations

AARC	American Association for Respiratory Care
ACT	airway clearance techniques
AFOs	Ankle foot orthoses
BMD	bone mineral density
CBL	Cerebrolysin
CF	cystic fibrosis
CNS	Central nervous system
COPD	chronic obstructive pulmonary disease
CP	Cerebral Palsy
CPT	Chest physiotherapy
CS	ceserian section
DHA	docosahexaenoic acid
DXA scan	Dual-energy radiography absorptiometry
FET	Forced expiration technique
FEV1	forced expiratory volume at one second
FRT	feedback respiratory training
FVC	forced vital capacity
GABA	*gamma*-aminobutyric acid
GMFCS	Gross Motor Function Classification System

HBO2	Hyberbaric oxygen
HFCWO	High Frequency Chest Wall Oscillation
HIE	Hypoxuc ischemic encephalopathy
IS	Incentive Spirometer
MRI	Magnetic resonance imaging
NINMS	National institute of Neuro-motor system
PD&P	Postural drainage and percussion
PEF	peak expiratory flow
PEP	Positive Expiratory Pressure
PUFA	polyunsaturated fatty acid
PVL	periventricular leukomalacia
QOL	quality of life
RDS	Respiratory distress syndrome
UMP	. uridine-51 -monophosphate
US	Ultrasound
VC	vital capacity

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Introduction

Cerebral palsy (CP) is considered the most common physical disability in children with incidence about 3.6/1,000 children ***(Yeargin-Allsop et al., 2008)***. In 2006 an international workshop suggested a new definition that stated that *"Cerebral palsy (CP) describes a group of permanent disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication, and behaviour; by epilepsy, and by secondary musculoskeletal problems"* ***(Rosenbaum et al., 2007)***. Children with cerebral palsy have a high incidence of respiratory dysfunction, such as recurrent chest infections, atelectasis, bronchiectasis, sleep apnea, and chronic obstructive lung disease ***(Allen, 2010)***.

Children with spastic CP have lower pulmonary function than normal healthy children ***(Kwon and Lee, 2014)*** due to decreased chest wall mobility, deviation of optimal chest wall structure and insufficient respiratory muscle strength ***(Wang et al., 2012)***.