

Department of Basic Science

Master Degree
2001

Author	:	Afaf Ahmed Mohamed Shaheen.
Title	:	Effect of electromagnetic field on mammalian blood.
Dept.	:	Department of Basic Science.
Supervisors		1. Wadida Hassan Abd El-Kader.
		2. Fadel Mohamed Ali.
		3. Hesham Mohamed Ezat.
Degree	:	Master.
Year	:	2001.
Abstract	:	
<p>In recent years there has been increased concern regarding effects of exposure to the electromagnetic fields (EMFs) associated with short wave diathermy (S.W.D) apparatus. the present study was designed to investigate the effects of exposure to different doses of S.D.D on the functional and structural properties of the blood of rats and to measure the radiation contour around S.W.D apparatus . Thirty-six adult male Albion rats were used. They equally divided into six groups, five experimental groups in addition to control group. The animals of experimental groups were exposed to EMFs emitted from S.W.D apparatus for six hours / day, six days / week for two weeks. After the two weeks of exposure the direct effects of S.W.D were studied through the measurements of osmotic fragility, solubilization and morphology of red blood cells (RBCs) membrane in addition to the level of serum cretin bhosokinase (SCPK), serum glutamic byruic transaminase (SGPT) and serum glutamic oxaloacitic transaminase (SGOT). Late effect of S.W.D. was studied on the animals of group 1 after 50 days after the end of exposure. There were changes in the elasticity, permeability of RBCs membrane and significant increase in the level of SCPK and SGOT with non-significant increase in the level of SGPT after exposure to S.W.D. It was concluded that S.W.D interact mainly with biological membrane and may affect cell communication, lead to formation of inflammation sites and may be hazardous to physiotherapists. Shielding against such radiation is necessary to minimize the occupational exposure to such radiation.</p>		
Key words		1. Electro magnetic field.
		2. osmotic fragility test.
		3. hazardous effect of S.W.D
		4. liver enzymes
		5. solublization test.
		6. red blood cell membrane.
		7. short wave diathermy
Arabic Title Page	:	تأثير المجال الكهرومغناطيسي علي دم الثدييات.
Library register number	:	800-801.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Khaled Zaki Saleh Fouda.
Title	:	Efficacy of different pulse frequencies of high voltage galvanic stimulation on the torque of the quadriceps muscle.
Dept.	:	Department of Basic Science.
Supervisors	1.	Mohsen Mohamed El-Sayyad.
	2.	Omaima Mohamed Ali Kattabei.
Degree	:	Master.
Year	:	2001.
Abstract	:	
<p>Background: The pulse frequency section during electrical stimulation is critical because it determines the peak force output and the rate of fatigue during treatment. However selection of specific pulse frequency generally has been a subject decision on the part of the investigator and still there is continuous argument and confliction among therapist about the accurate pulse frequency. The purpose: of this study was to investigate the effective pulse frequency either (20,60,100)pulses per second (PPS) that could be used to increase the torque of the quadriceps muscle and investigated the possible pulse frequency that could produce muscle soreness after 48 hours of stimulation . Subjects: Forty-five healthy male physical therapy students (X age 19.5 years SD= 1.96) assigned randomly to equal three groups. Methods: The isometric torque of the non-dominant quadriceps was evaluated at 60 degrees of knee flexion, using Akron rehabilitation system, first before training then at the end of the second, fourth and sixth weeks of training. High voltage was administered three times a week for 6 week at pulse frequencies of 20 PPS for group I.60 PPS for group II and 100 PPS for group III. The duty cycle of the stimulator was set at 10 seconds on and 10 seconds off. The subjects trained at the maximum tolerable voltage for 15 minutes per session. Muscle soreness was evaluated 48 hours after stimulation using short form of McGill pain questionnaire. ANOVA was done to determine the significance differences in the quadriceps torques. Student-t-test was performed to further distinguish between the effects of the 3 pulse frequencies. results : the results revealed that high voltage produced significant increase in the quadriceps muscle torque (53% , 59% , ,and 67.7%)respectively (P<0.0001). .but without significance difference among the 3 pulse frequencies (P>0.05). muscle soreness rating by the 3 groups was not statistically significant. discussion and conclusion :the finding revealed that high voltage can improve the strength of normal innervated muscles and 100 PPS having an advantage over the (20 and 60 PPS)in terms of strength gained .</p>		
Key words	1.	Quadriceps.
	2.	pulse frequencies.
	3.	High voltage.
Arabic Title Page	:	فاعلية الترددات المختلفة للتيار الجلفاني على الجهد على عزم العضلة الرباعية.
Library register number	:	830-831.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Sahar M. Adel El-Hakke.
Title	:	Reliability of the BROM device in measurement of the lumbar range of motion.
Dept.	:	Department of Basic Science.
Supervisors	1.	Mohsen El-Sayyad.
Degree	:	Master.
Year	:	2001.
Abstract	:	
<p>The purpose of the study was to investigate the interexaminer and intraexaminer reliability of the BROM device for measurement of the active lumbar spine mobility and determine normal values in relation to age and sex. Study design: repeated measures were made between examiners. Intraexaminer and interexaminer reliability were determined between three examiners. Subjects: Sixty asymptomatic physical therapy student and employees (30 males and 30 females, age range from (15 - 30 years) means age ($X = 22.45$, $SD = \pm 4.89$) . Method: Three examiners measured all 3 planes of lumbar range of motion in 60 subjects and the session was repeated after 3 days. Each examiner was blinded to the results of the partner. Pearson product moment (PPMCC) and interclass correlation coefficients (ICCs) were calculated. Results : The range of Pearson (PPMCC) was in (0.72 - 0.92) and interclass correlations were in the range of ($ICC = 0.69 - 0.87$) for interexaminer reliability and ($ICC = 0.66 - 0.89$) for intraexaminer reliability . Results showed that there is a significant relationship between age, sex and ROM $p = (0.005)$. Normal values of the lumbar spine range of motion related to age and gender were established. Conclusion: The BROM was found to have acceptable reliability in measurement of lumbar active ROM especially in flexion, extension, right and left lateral flexion. It can be a good addition to the instrumentation and tools utilized in physical therapy for documentation after treatment intervention. Further studies are recommended for Pathological conditions.</p>		
Key words	1.	Lumber Range of Motion.
	2.	Measurement.
	3.	BROM.
	4.	Inter-intra examiner.
	5.	Reliability.
Arabic Title Page	:	درجة ثبات جهاز البروم الخاص بقياس مدى الحركة في الفقرات القطنية.
Library register number	:	778-779.

**ELECTRONIC GUIDE TO THESES APPROVED BY
DEPARTMENT OF BASIC SCIENCE
PREPARED BY NERVEEN ABD EL SALAM ABD EL KADER AHMED**

Author	:	Sherif Mohamed Diab.
Title	:	Bactericidal effect of helium-neon laser on photosensitized staphylococcus aureus in vitro.
Dept.	:	Department of Basic Science.
Supervisors	1.	Mohsen Mohamed El-Sayyad.
	2.	Abd El-Fattah Mohamed attia.
	3.	Samy Abd El-Samed Nasef.
Degree	:	Master.
Year	:	2001.
Abstract	:	
<p>Background ;many studies had shown that low power He-Ne laser therapy was effective as bactericidal modality, while others did not found so based on this conflicting research, the use of He-Ne laser as bactericidal with direct effect is still controversial . the purpose of research was study the bactericidal effect of low power He-Ne laser on photosensitized staphococcus aureus bacteria in vitro. methods staphylococcus aureus bacteria were used in this study, one hundred samples were used (86 standard strains (ATCC25923)and 14 isolated strains in microbiology and immunology department), 15mW He-Ne gas laser was used in this study with wavelength 632.8nm . toludine blue O (TBO)(CI52040)was utilized as photosesiting agent in this study. Results: Of this study showed negative effect of He-Ne laser on 98 plates of staphylococcus aureus bacteria out of one hundred plates. discussion: this results has been attributed to susceptbility of staphylococcus aureus bacteria strain that has been utilized in this current study , in addition the results would have been expected to be more efficient if gallium aluminum phosphate laser has been utilized instead of He-Ne laser in the current study because of its reported bactericidal effect , which is more powerful than He-Ne laser, however He-Ne laser has been utilized because of its availability in faculty of physical therapy while Ga-Al-P laser device has not been available for these research work. Conclusion: within limitation of these study 15mW He-Ne laser has no bactericidal effect on photosensitized Staphylococcus aureus bacteria.</p>		
Key words	1.	Lasers.
	2.	staphylococcus aureus bacteria.
	3.	wound care.
Arabic Title Page	:	تأثير الليزر منخفض الشدة الهليوم- نيون علي البكتريا استافيلوكوكس ايوريس المخلقة ضوئيا.
Library register number	:	836-837.