Electromagnetic field (EMF) is considered one of the commonly used modalities in the field of physical therapy. Physical therapists use almost all types of EMF (high, middle, and low frequency EMF) at different intensities and thresholds in the management of different cases. Over the last twenty years, interests and activities of different researchers in the world are increasing for the biological effects of electromagnetic fields on the different systems of the body. Therefore, the aim of this work is to investigate the biological effect of high frequency electromagnetic field on tumor growth. For this purpose, 60 female mice contain Ehrlich tumor in the thigh were divided into six groups, five experimental groups namely B, C, D, E, and F in addition to the control group (Group A). The mice were exposed to EMFs emitted from SW apparatus at eight hours/day, six days/week for three weeks. Exposures to pulsed short wave started at day 10 post tumor implantation. The in vivo measurements included: 1) studying tumor growth, by measuring the size of the tumor after exposures every 3 days for three weeks. 2) Survival rate, by calculating the percentage of animals surviving post tumor implantation and 3) histopathological studies. It was concluded that exposures to short waves even at very low dose rates enhance tumor growth and its density and decrease survival rate. We may consider short waves promoters for cancer cells.

Key words
1. tumor growth.
2. high frequency electromagnetic field.
3. short wave.

Arabic Title Page: قوة تأثير الموجات القصيرة النابضة على نمو الورم السرطاني الاليشي.
Library register number: 904-905.
**Author**: Azza Mohamed Atia.

**Title**: Efficacy of spinal manipulation in the treatment of low back dysfunction.

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**Degree**: Master.

**Year**: 2002.

**Abstract**

Background low back dysfunction (LBD) is a significant public health problem that frequently restricts patient activity and boosts LBD. The purpose of this study was to investigate the efficacy of spinal manipulation on pain, ROM, and functional activities in treatment of LBD patients subjects. Thirty patients with chronic LBD (19 females, 11 males), age (30±5.65) years. They were randomly assigned to two groups: group (A) as applied conservative treatment, group (B)was applied conservative treatment plus spinal manipulation. the program was applied day\day for four weeks. Results: here was a significant decrease in pain score from 8.20±1.32 to 4.33±1.99 in group A and from 8.20±1.15 to 2.87±1.12 in group B. the range of motion was significantly improved in group B than in group A. the disability index significantly decrease from 0.52±0.22 to 0.29±0.16 in group A, 0.58±0.19 to 0.11±0.09 in group B. Discussion and conclusion. Spinal manipulation as shown in this study has a great effect in treating patients with LBD in term of pain reduction, improvement in ROM and functional activities.

**Key words**
1. Low back dysfunction.
2. Spinal manipulation.

**Arabic Title Page**
 مدى كفاءة العلاج اليدوى للعمود الفقري في حالات الخلل الوظيفي بالجزاء الأسفل من الظهر.

**Library register number**: 866-867.