

# EFFECTIVENESS OF MAGNETIC FIELDS IN FATIGUE IN MULTIPLE SCLEROSIS PATIENTS

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## BACKGROUND

The MS affects young and middle-aged adults, it is twice more prevalent in women than in men and the first cause of non traumatic neurological disability in Spain (1). In the symptomatic spectrum we find **fatigue**, defined as a feeling of tiredness or lack of energy, disproportionated to the effort made or the degree of disability (2). Its prevalence ranges between 60-90% of patients with MS, being this one of the main causes of **early laboral disabilities**, affecting the physical condition, social function, cognitive sphere and worsening other symptoms in MS (3).

The boom of physiotherapy in MS extended its reach to the **pulsed low frequency magnetic field** as a technique to improve the sleep disorders, the movility, emotional state and consequently, the fatigue perception. (4,5,6)

## AIMS

To assess the effect of **magnetotherapy (pulsed low frequency magnetic field)** over the perception of the fatigue in patients with a **Multiple Sclerosis R.R.**

## PATIENTS & METHODS

Variable	Variable Mean ± Standard Deviation	
	Group A N= 9	Group B N= 9
Age	39,1 ± 6,9	43,8 ± 11,6
Gender (Males/ Females)	2/7	2/7
EDSS	2,6 ± 1,1	3,0 ± 1,1
Disease duration (years)	9,9 ± 6,5	12,2 ± 7,5

who identified fatigue as their main symptom, randomized into two groups: Group A (**placebo**) and Group B (**pulsed low frequency magnetic field**). All subjects had a relapsing-remitting (RR) MS, with an Expanded Disability Status Scale (EDSS) score between 1.5 and 4.5, and all received 20 sessions of 40 minutes, 5 days a week. Fatigue Severity Scale (FSS) and Modified Fatigue Impact Scale (MFIS) were evaluated before and after the intervention. The study is being performed in the Multiple Sclerosis Unit of Virgen Macarena University Hospital Sevilla (España).

The average of each group was compared and the differences between the initial state, before the treatment and after the treatment, with paired samples Student's T. It was considered statistically significant a p value of 0,05 .

## CONTACT INFORMATION

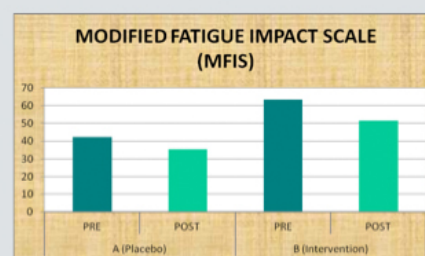
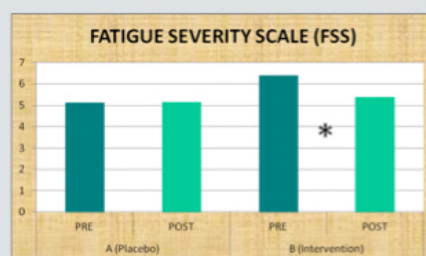
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## RESULTS

•In the control group, no change were observed before and after the FSS assessment. In the MFIS changes were observed (Pre = 42,3/84; Post = 35,6/84), but they can't be considered statistically significant a p value of  $p = 0,22$ .

•In the experimental group, changes in fatigue were observed before, assessed with the Fatigue Severity Scale. Pre = 6,4/7; Post = 5,4/7 ( $p = 0,039$ ). No changes were detected using the Modified Fatigue Impact Scale, Pre = 63,2; Post = 51,7 ( $p = 0,19$ ).

	Mean ± Standar Deviation	
	Group A: Placebo	Group B Intervention
FSS pre	5,12 ± 1,69	6,39 ± 0,82
FSS post	5,16 ± 1,35	5,41 ± 1,61
MFIS pre	42,3 ± 15,59	63,2 ± 10,40
MFIS post	35,6 ± 16,78	51,6 ± 18,20



## DISCUSSION / CONCLUSION

A **pulsed low frequency magnetic field** therapy contributed to raising the profile of **fatigue** in patients with **Relapsing-Remitting Multiple Sclerosis**. Respect to Impact of Fatigue in Daily Activities, it seems there are not significant changes (**Modified Fatigue Impact Scale** measure the impact of Fatigue in 84 Items in Daily Activities). Furthermore, the **Estandar Deviation** in this sample in MFIS is broader than in FSS, so this factor could have influences in results. Therefore, a larger sample and a longer follow-up are necessary to confirm its effectiveness and the permanence of the changes.



## REFERENCES/ACKNOWLEDGEMENTS

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