



Assessment of Occupational Electromagnetic Fields exposure for selected Electrotherapeutic modality

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Abstract : Purpose of the study: The main aim of this study was to investigate the physical therapists' occupational exposure to electromagnetic fields surrounding electrotherapy appliances with different techniques of application and comparing the results with the reference limits set by international organizations to provide the appropriate advice and guidelines for safe limits of exposure. Furthermore, the second main objective was to investigate the effect of equipment grounding, as one of protection designs, on the amount of electromagnetic field exposure. **Materials and methods:-** In the present study, electric field intensity was measured by Nared EMR-200 and magnetic flux density (G) by Tesla/ Gauss meter and they were measured in the three planes around the electrotherapy device (phyaction 787 series) under both ungrounded and grounded conditions. The same parameters were also determined for the electrodes that were put on water phantom, and on the cables that were connected the device to the electrodes. **Results:-** Comparing the obtained results with the safe limits set by International Committee for Non-Ionizing Radiation Protection revealed that the electric field intensities at the different measured points were within the safe limits. However, the magnetic flux density measured at the electrodes was above these limits. **Conclusion:-** The present assessment sheds more light on the occupational electromagnetic exposure for physiotherapist and recommends for more safety procedures in treatment with this modality.

Keywords : Electromagnetic; Interferential; Diadynamic; International Committee for Non-Ionizing Radiation Protection; Hazard.

Abeer Mahmoud Yousef *et al* /International Journal of PharmTech Research, 2019,12(1): 28-36.

DOI: <http://dx.doi.org/10.20902/IJPTR.2019.120105>
