

Medical Imaging

LECTURE TWO

Electromagnetic Radiation

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Electromagnetic Radiation

There are many kinds of electromagnetic radiation all around us. Electromagnetic radiation has many forms with several frequency and wavelength, which includes;

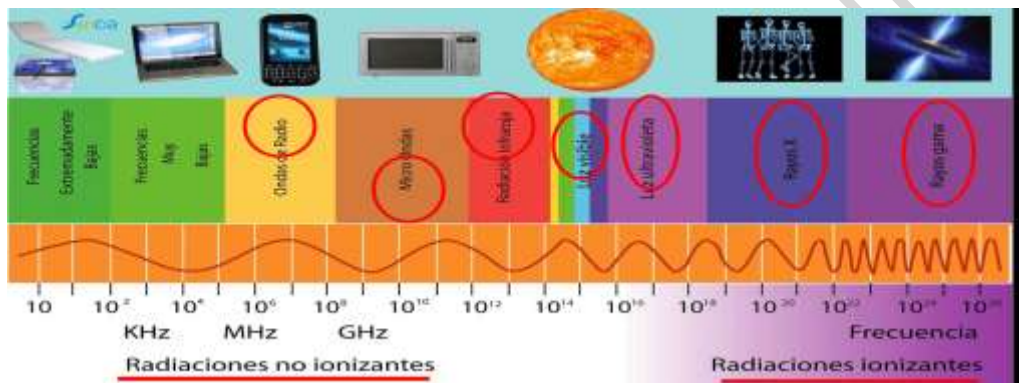


Figure 2.1: The electromagnetic radiation spectrum

1) **Radio wave:** It is a type of electromagnetic radiation with frequency of 10^6 Hz and wavelength of 10^2 m. Radio waves are used to transfer information from one place to another without wires through the intervening media (i.e., air, space, non-conducting materials). Radio waves are used for transfer signals of sound, television, and radio by transfer of data in coded form.

2) **Microwave:** It is a type of electromagnetic radiation with frequency of 10^{10} Hz and wavelength of 10-2 m. Microwaves are used in (i) radar, (ii) communications, (iii) cooking in microwave ovens, (v) microwave energy used in medicine for the thermal ablation of tissue, and (vi) in various industrial processes.