

1. What is Radiofrequency (RF) Radiation?

There are two types of radiation – ionizing radiation and non-ionizing radiation. Both are forms of electromagnetic energy, but ionizing radiation has more energy than non-ionizing radiation.

Ionizing radiation, like x-rays or gamma rays, has enough energy to cause chemical changes by breaking chemical bonds. Sources of this type of radiation can be found in hospitals, nuclear energy plants, and nuclear weapons facilities.

Non-ionizing radiation causes molecules to vibrate, which generates heat. RF radiation is a type of non-ionizing radiation and the focus of this Guide.

Figure 1-A

The diagram in Figure 1-A shows the electromagnetic spectrum from extremely low frequency (non-ionizing) to gamma rays (ionizing). There are different types of non-ionizing radiation. At one end is “extremely low frequency” or ELF radiation, which can be emitted through electric currents from overhead power lines and equipment powered by electricity.

At the other end is radiofrequency (RF) radiation. According to the Centers for Disease Control and Prevention (CDC), “Even though [ELF and RF] are both non-ionizing radiation, RF radiation is much higher frequency than ELF radiation and therefore potentially more harmful.”¹

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