ENVIRONMENTAL HEALTH AND SAFETY

RESEARCH SAFETY

RADIOFREQUENCY SAFETY

Understanding RF Exposure Hazards

What is Radiofrequency (RF) Radiation?

RF radiation is a type of non-ionizing electromagnetic radiation. It is emitted by various types of electronic devices and systems including:

- Wireless communication antennas (e.g., Wi-Fi, cellular)
- Broadcast transmitters (radio and TV)
- Research equipment (e.g., RF heating devices, plasma sources)
- Medical devices (e.g., MRI systems, diathermy units)
- Industrial systems (e.g., dielectric heaters, induction welders)

Why does Radiofrequency safety matter?

Though it cannot cause DNA damage like ionizing radiation, high levels of RF exposure can lead to injury.
This includes:

- Burns
- Tissue damage (especially to the eyes and gonads)
- Fatigue, headaches, irritability, and cardiovascular effects
- Potential damage to pacemakers

The effects above depend on the frequency and wavelength of the emitted RF, the source power and the distance from the source. There are maximum permissible exposure limits to describe thresholds at which overexposure is dangerous to health.

What are Your Responsibilities?

- Identify potential RF sources and make all workers aware of RF hazards in your work area
- Ensure that only qualified personnel are able to operate potentially hazardous RF sources

Contact **Purdue EHS Radiation Safety**, **radsafety@purdue.edu**, with any RF safety concerns. Radiation safety staff are available to take measurements and advise personnel on methods to reduce exposure.

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