

Work **Safe!** Bulletin

RADIATION

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Radiation is a generic term which refers to all the many forms of electromagnetic energy. It includes both ionizing radiation (e.g. x-rays) and non-ionizing radiation (e.g. radio waves, microwaves, infrared, and visible light). The different forms of radiation vary in the kind and amount of electromagnetic energy they contain, and consequently, they vary in the kind and extent of effects they cause. Historically, most concerns about radiation related to radioactivity, or ionizing radiation; these conjure thoughts of nuclear weapons and carcinogenic effects. Recently, there has been increasing concern about effects from "non-ionizing radiation". These include well known concerns about over-exposure to UV from sunlight, eye damage from lasers, and potential carcinogenic effects from radio frequency and microwave radiation.

"Non-ionizing radiation" includes: sunlight, microwaves from ovens, infrared from heat and tanning lamps, lasers, cellular telephone emissions, traffic radar, electromagnetic radiation from electrical power lines, and emissions from video display terminals. The number of devices creating non-ionizing radiation is constantly increasing and so too are the concerns about the radiation from these devices.

Increasingly, radiation, and especially non-ionizing radiation, is becoming a concern for people at their workplaces, as well as at home and in their recreational activities.

Potential over-exposure to ionizing radiation is a risk for relatively few people, because conditions for using ionizing radiation are strictly regulated and controlled and those potentially at risk are generally very well aware of the hazards.

In contrast, potential over-exposure to non-ionizing radiation is a concern for many people. Nearly everyone is exposed to one or more forms of non-ionizing radiation. The hazards associated with non-ionizing radiation are less acute and, while there may be potential hazards, they can be avoided.

The following agencies or government offices can assist you with questions you may have regarding the effects of radiation.

Radioactivity and Radioisotopes

Atomic Energy Control Board 613 - 995-1436 emergencies 613 - 995-0479

Manitoba Cancer Treatment and Research Foundation 204 - 787-2197

The Canadian Nuclear Assoc. 1-800 - 387-4477

X-Ray

Manitoba Cancer Treatment and Research Foundation 204 - 787-2197

Laser Light Shows

Manitoba Cancer Treatment and Research Foundation 204 - 787-2197

Extremely Low Frequency (ELF) or Very Low Frequency (VLF) from power transmission lines, transformers, electric motors, etc

Manitoba Hydro 204 - 474-4228 Winnipeg Hydro 204 - 986-2270

All forms of radiation

Health Canada 613 - 954-0305

The Workplace Safety and Health Division of the Manitoba Department of Labour and Immigration has prepared WorkSafe bulletins to clarify the known risks to health and safety from various forms of radiation energy.

Lasers #181

Radiofrequency and Microwave Radiation #182

Ultraviolet Radiation #183