

Safety of Exposure to
Radiofrequency Fields

Frequently Asked Questions

compiled by
Health Canada



Why should I read this brochure?

This brochure answers the most common questions about radiocommunication facilities (antennas and towers). This side of the brochure answers the most common questions about health risks from exposure to the radiofrequency fields produced by radiocommunication transmitters. We hope it provides clear information about a complex and often misunderstood topic.

For information about Industry Canada procedures for the location of a tower, environmental concerns or municipal consultation, please turn to the other side of the brochure.

What are the sources of radiofrequency fields?

Radiofrequency fields are a part of everyday life. They are produced by sources such as radio and television broadcasting, mobile radiocommunication transmitting facilities, and cellular telephones. They are also produced in our homes by electronic devices such as television sets and computers.

What are Canada's safety guidelines for radiofrequency fields?

Health Canada's Radiation Protection Bureau has established safety guidelines for exposure to radiofrequency fields. These safety guidelines are outlined in the publication, *Limits of Exposure to Radiofrequency Fields at Frequencies from 10 kHz - 300 GHz*, also known as Safety Code 6.

Safety Code 6 sets the limits for safe exposure to radiofrequency fields at home or at work. The Code also outlines safety requirements for the installation and use of devices that emit radiofrequency fields. (Note: The exposure limits in this code are not intended to apply to people who are deliberately exposed to RF fields for medical treatment under the direction of a physician.)



I live in a house that is located near a tower with all kinds of antennas on it. Should I be concerned?

Biomedical studies in Canada and other countries indicate there is no scientific or medical evidence that a person will experience adverse health effects from exposure to radiofrequency fields, provided that exposure is within the guidelines set out in Safety Code 6.

Through its procedures, Industry Canada requires that all operators of radio and television broadcast stations, cellular, land mobile, amateur radio and other radiofrequency emitters, ensure that the radiofrequency fields produced by their installations do not exceed the maximum levels contained in Health Canada's Safety Code 6. Health Canada recently measured the level of radiofrequency field exposure around a number of cellular transmitting facilities. They found that the levels are well below the limits specified in Safety Code 6.

What are Safety Code 6 exposure limits based on?

Safety Code 6 sets safe exposure limits for individuals working on sources of radiofrequency fields (8 hours a day) and for the general public who could be exposed for 24 hours a day. The limits were established from the results of experiments on biological organisms. These experiments identified the lowest level of exposure (called a threshold) that could produce potentially harmful effects. The Safety Code 6 limit for people who are exposed to radiofrequency fields in their work environment (8 hours a day) was set by dividing the threshold amount of exposure by 10. For people who could be exposed for 24 hours a day (the general public) the threshold amount was divided by 50.

- **Safety Code 6 Limit**
for people exposed 8 hours
per day equals **one-tenth** of the
lowest level of exposure
that could cause harm
- **Safety Code 6 Limit**
for people exposed 24 hours
per day equals **one-fiftieth** of the
lowest level of exposure
that could cause harm



How does Safety Code 6 compare with the standards in other countries?

The exposure limits set by Safety Code 6 are similar to other national and international standards. All countries use the same biomedical data and the same general approach to setting safety guidelines. Differences in interpreting the biological effects under certain exposure conditions sometimes result in small differences in the exposure limits that are recommended. These minor differences will not affect a person's health. Canada's exposure limits are among the safest guidelines in the world.

Why do we need Safety Code 6?

Safety Code 6 was developed to protect the health and safety of Canadians. Studies have shown that exposure to *excessive* levels of radiofrequency energy over prolonged periods of time may cause adverse health effects. What kind of health effects, and how serious they are, depends on a number of factors. These factors include the strength of the field, how often a person is exposed, the length of each exposure, the number of cycles per second of the field, the distance from the source, and the orientation of the radiofrequency field. Safety Code 6 helps to limit the amount of radiofrequency energy people are exposed to at work and at home.

What is the legal status of Safety Code 6?

Safety Code 6 is a guideline rather than a law. However, it is referenced in the regulations written under the Canada Labour Code. This means that federal government departments, crown corporations, and other organizations that come under the control of these regulations, must follow the safety procedures and installation guidelines given in Safety Code 6 (unless they are exempted by regulation). Industry Canada also requires operators of radiocommunication and broadcast facilities to follow Safety Code 6. In addition, Canadian provinces and territories have generally adopted the Safety Code 6 exposure recommendations.



If Safety Code 6 is important to protect the health of Canadians, why not make it a law that everyone must follow?

Scientific studies on the biological effects of radiofrequency fields are ongoing. Since Safety Code 6 is a guideline, it can be changed quickly when new and convincing scientific evidence justifies a change. It would take much longer to amend a law.

Health Canada Reference and Contacts:

Reference:

Safety Code 6, *Limits of Exposure to Radiofrequency Fields at Frequencies from 10 kHz - 300 GHz* (catalogue no. H46-2/90-160) is available in both English and French at Canada Communication Group – Publishing, Ottawa, Ontario K1A 0S9. Tel. (613) 956-4802.

Contacts:

Questions concerning the interpretation of Safety Code 6 should be directed to:

Non-ionizing Radiation Section
Radiation Protection Bureau
775 Brookfield Road, Postal Locator 6301B
Ottawa, Ontario K1A 1C1

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