

RIN #6 HEALTH CONCERNS OF CELLULAR TRANSMITTING TOWERS

This Radiation Issue Note (RIN) addresses health risks concerning electromagnetic fields surrounding cellular transmitting antennae mounted on towers, buildings and other structures.

Has scientific research shown that there is a health hazard near cellular transmitter sites?

No. Research studies conducted to date have not shown that electromagnetic fields surrounding a cellular transmitter site could cause cancer or other adverse health effects in the population.



phone antennae. All sites were found to be well below (more than 100 times) Health Canada's Safety Code 6 limits for exposure to members of the general public. These results are consistent with findings in other cities in Canada.

Are cellular transmitter antennae regulated?

Yes. All cellular communication equipment must be granted an individual site Radio Station license by Industry Canada before it can operate. Industry Canada does not issue a license to operate unless the applicant demonstrates:

- ✓ the equipment complies with Health Canada's Safety Code 6, "Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 2009", which specifies maximum limits for exposure to electromagnetic fields;
- ✓ the applicant has consulted with local municipal or land-use authority regarding the antennae structure; and
- ✓ the applicant has addressed any other environmental effects of the application in accordance with the Canadian Environmental Assessment Act (CEAA).

For 2 GHz PCS stations, although Industry Canada does not issue individual site licenses, they are still required to meet Safety Code 6 maximum exposure limits and be involved in the municipal consultation process.

How much radiation is emitted from towers and building mounted antennae?

The Radiation Protection Services has performed surveys and "worst-case" estimations of electromagnetic levels in areas surrounding cellular

Is it possible for workers to receive exposures in excess of the allowable exposure limits near a tower mounted or building mounted cellular antenna?

Yes, but only immediately in front of transmitting cellular antenna at distances of less than 3 meters. This area is normally not accessible to the general public. Recently, newer digital communications systems have begun to replace the current technology. These newer systems use antennae of significantly less power; therefore, significantly lower electromagnetic radiation is associated with them.

References

1. [Safety Code 6](#), " Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz ", Health Canada, 2009.
2. The [American Conference of Governmental Industrial Hygienists](#) (ACGIH): TLVs and BEIs, 2013.
3. International Commission on Non-Ionizing Radiation Protection, "[Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields \(up to 300 GHz\)](#)", 1998.
4. "[IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz](#)", Institute of Electrical and Electronics Engineers, Inc, IEEE C95.1 - 2005, (Revision of ANSI C95.1 - 1991)

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