



Setting the Record Straight on 5G Wireless & RF Safety

canadatelecoms.ca | 5gcc.ca

Introduction

Each new generation of wireless technology has created a wave of economic growth and improved the way Canadians live and work.

5G, the next generation of wireless networks, will be no exception. The advanced capabilities of 5G will result in even faster mobile data speeds, enable innovative new products and services, and help connect more Canadians to the Internet. But as with the introduction of other new technologies, 5G can be the subject of misunderstanding and, in some cases, deliberate misinformation.

There is an increasing amount of misinformation circulating on the Internet and through other channels about possible harmful effects from 5G mobile wireless networks.

Contrary to these claims, **there are no established health risks from the radiofrequency waves used in 5G networks** in accordance with applicable safety standards.

“Misinformation and opinions on the health risks from exposure to radiofrequency electromagnetic fields are increasing on social media and on the Internet... Health Canada confirms that there is no scientific basis for these claims.”

– Innovation Science and Economic Development Canada

“Based on available scientific evidence, there are **no health risks from exposure to the low levels of radiofrequency EMF which people are exposed to from cell phones, cell phone towers, antennas and 5G devices.”**

– Health Canada

What is 5G?

5G or “fifth generation” refers to the next generation of mobile wireless standards and technologies. **5G will enable a fully connected and mobile society, and deliver unprecedented benefits to citizens, industry and government.**

The consulting firm Accenture has estimated that 5G will “significantly improve Canadians’ quality of life and the economy to the tune of nearly \$40B annual GDP uplift by 2026” and add close to 250,000 permanent jobs to the Canadian economy in the same time period (Accenture: Fuel for Innovation: Canada’s Path in the Race to 5G).

“Measurements carried out by Ofcom engineers,....,have consistently shown that EMF levels near mobile phone base stations are well within the internationally agreed levels, with the highest level being approximately 7.1% of the ICNIRP reference levels and the next highest level being 1.5%.”

– UK Office of Communications (OfCom) - [Keeping tabs on 5G safety](#) (June 2023)





Is 5G safe?

Most of the misinformation around the safety of cell towers and mobile devices, including 5G, centers on their use of radiofrequency (RF) energy.

What do the experts say?

RF energy used for mobile phones, base stations & other wireless services has been studied for decades.

These studies have resulted in **no substantiated scientific evidence of harmful health effects** from RF technologies used within national and international safety standards.

“... there are no quantifiable adverse health effects in humans caused by exposures at or under the current cell phone exposure limits.”

(Review of Published Literature between 2008 and 2018 of Relevance to Radiofrequency Radiation and Cancer, February 2020)

– U.S. Food and Drug Administration

“... 5G technologies will not be able to cause harm when [the ICNIRP guidelines] are adhered to.”

(ICNIRP Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to 300 GHz), 2020)

– International Commission on Non- Ionizing Radiation Protection

For more information on what government agencies and international bodies have to say about RF Safety visit: t.ly/9Nmsz

How does the Government of Canada ensure your safety?

Canada's approach to RF safety is among the most stringent in the world.

Health Canada has established guidelines for safe exposure to RF energy, known as Safety Code 6, which utilizes very conservative limits set at least 50 times below the threshold of any potential adverse health effects.

Innovation, Science and Economic Development Canada (ISED) uses Safety Code 6 in setting its standards and regulations for RF exposure limits for wireless devices and associated infrastructure, such as antennas.

All wireless devices must meet ISED's requirements and be certified before being sold in Canada. Antenna installations must also meet ISED's requirements at all times as a condition of a carrier's license.

Canada's mobile network operators consistently monitor their networks, and ISED audits wireless devices and antenna installations to ensure compliance with safety standards.

Millimetre Wave (mmWave) Radiofrequency & 5G

Mobile communications use different portions of the radiofrequency spectrum, often referred to as low, mid, and high band spectrum.

mmWave spectrum is one of the spectrum bands that will be used for 5G, but despite claims to the contrary, mmWave spectrum (30 GHz to 300 GHz) is not new and is already being used today for fixed wireless communications and satellite Internet services. [The existing ISED RF exposure limits and regulations apply to use of mmWave spectrum.](#)



Are Canada's RF Standards

Similar to Those

In Other Countries?

Canada's science-based safety standards are consistent with the safety standards used in other parts of the world, including the United States, the European Union, Japan, Australia and New Zealand.

What are Small Cells?

Unlike macro cells, the large radio antenna installations you see on building rooftops, along highways or in fields, **small cells are compact radio equipment and antenna installations** that can be positioned on a wide variety of structures, such as streetlights or the side of buildings.

These low-powered cell sites are typically used to transmit large amounts of data over relatively short distances. This allows for more efficient use of RF spectrum, increased network capacity, and a better mobile wireless experience for users. As they are used for communicating over short distances, **small cells use lower levels of power and produce lower RF energy emissions than macro cells.** All small cell installations must comply with safety regulations.

FACT:

“A worldwide online conspiracy theory has attempted to link 5G cell phone technology as being one of the causes of the coronavirus. Many cell towers outside of the U.S. have been set on fire as a result. 5G technology does NOT cause coronavirus.”

– FEMA, Federal Communications Commission (FCC)

Is there a link between COVID-19 & 5G?

The COVID-19 pandemic has given rise to many baseless conspiracy theories, including attempts to link 5G to COVID-19.

While this myth has been widely debunked, it has led to the vandalism of several antenna installations in other countries.

Such actions are not only foolish, they can deprive affected communities, including first responders and 9-1-1 service providers, of critical telecommunications services.

**For more debunking of 5G/COVID-19 stories visit:
<https://www.poynter.org/?s=5g>**



More Information

Health Canada

Misinformation and health – <https://bit.ly/2GrfQD8>

Fact Sheet

What is Safety Code 6? – <https://bit.ly/2KjmJGN>

ISED

Facts about towers – <https://bit.ly/2F9JGle>

Radio Frequency Energy and Safety

<https://bit.ly/2ZswQfV>

What the Experts Say

https://canadatelecoms.ca/consumer_resource/rf-safety-what-the-experts-say/

5G Canada Council

<https://bit.ly/20pbcJw>



ABOUT US:

The Canadian Telecommunications Association is dedicated to building a better future for Canadians through connectivity. Our members include service providers, equipment manufacturers, and other organizations in the telecommunications ecosystem, that invest in, build, maintain and operate Canada's world-class telecommunications networks.

Visit canadatelecoms.ca for more information.

Date last modified: July 2023