Setting the Record Straight On 5G Wireless & RF Safety

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.

> "We urge you to be cautious of claims from anti-5G campaigns These campaigns are generating unfounded fears and concern within the community."
>
> *– Australian Government (ARPNSA) –*
>
> *June 3, 2019*

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).

> "[T]here is no substantive evidence that adverse health effects, including cancer, can occur in people exposed to RF levels at or below the limits set by international standards."
>
> *– World Health Organization (WHO)*

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. However, unlike the high-energy RF used for things like x-rays, mobile communications use low-energy RF, similar to televisions, radios and baby monitors.

The potential health effects of RF energy used for mobile phones, base stations and 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.

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.

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.

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.

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 Government of Canada safety regulations.

MORE INFORMATION:

- Radio Frequency Energy and Safety – https://bit.ly/2ZswQfV
- Fact Sheet – What is Safety Code 6? – https://bit.ly/2KjmJGN
- Facts about towers – https://bit.ly/2F9JGIe
- Australian Government Statement on 5G Health Claims – https://bit.ly/2KmRF9g
- 5G Canada Council – www.5gcc.ca

About CWTA

The Canadian Wireless Telecommunications Association is the recognized authority on wireless issues, developments and trends in Canada. The information provided in this bulletin is based on information published by the Government of Canada and other sources referenced in the 'More Information' section. Visit www.cwta.ca for more information.