Exposure to Radiofrequency Energy from Cellular Telephones – Fact Sheets



WHAT TYPE OF ENERGY DOES A CELLULAR PHONE USE?

Cell phones (and cell phone towers) use low-powered radiofrequency (RF) energy, a type of non-ionizing radiation. Non-ionizing radiation is not able to break the chemical bonds in your body.

Can this energy be absorbed by the body?

The amount of RF energy absorbed by the body depends on a number of factors including how close you hold the cell phone to your body, and the strength of the signal. According to Regulators, cell phones are designed to use the lowest power necessary to connect and make calls using a network of fixed, low-power cell phone towers or base stations.

Regulators states that phones only transmit power when they are turned on, and that this power (and the corresponding RF exposure to a user) decreases very rapidly with increasing distance from the source. For example, when text messaging, the phone unit is held at arm's length away from the body (about 30-40 cm) and this distance results in a much lower exposure than when a unit is held near a person's head. Using a hands-free device will also increase the distance of the phone unit from the body.

Are there health risks from cell phones?

The International Agency for Research on Cancer (IARC) classified radiofrequency electromagnetic fields as Class 2B "possibly carcinogenic to humans". The Class 2B is used "for agents for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals". IARC examined available literature about personal exposures associated with the use of wireless telephones, in addition to occupational exposures to radar and microwaves, and environmental exposures associated with transmission of signals for radio, television and wireless communication. They concluded that there is "limited" evidence among users of wireless telephones for glioma (a type of brain cancer) and acoustic neuroma (a non-cancerous tumor of the nerve that connects the ear to the brain). They did not find adequate evidence to make conclusions about other types of cancers or exposures. IARC announced that while

there was some evidence to support the 2B classification, more studies are required before further conclusions can be made.

Regulators adds that “the evidence of a possible link between RF energy exposure and cancer risk is far from conclusive and more research is needed to clarify this ‘possible’ link.

Regulators continues, and adds the following precautions:

“Although the RF energy from cell phones poses no confirmed health risks, cell phone use is not entirely risk-free. Studies have shown that:

- Using cell phones or other wireless devices can be distracting. Your risk of serious injury may increase if you use these devices while driving, walking, cycling, or doing any other activity that requires concentration for personal safety.
- Cell phones may interfere with medical devices such as cardiac pacemakers, defibrillators, and hearing aids.
- Cell phones may also interfere with other sensitive electronic equipment, such as aircraft communication and navigation systems.

With respect to cell phone towers, as long as exposures respect the limits set in Health Canada’s guidelines, there is no scientific reason to consider cell phone towers dangerous to the public.”

And:

“Regulators also encourages parents to … reduce their children’s RF exposure from cell phones since children are typically more sensitive to a variety of environmental agents”.

What precautions can I take if I am concerned about RF exposure?

Precautions may include:

- Limit the number and length of calls (time spent talking on the phone)
- Use hands-free devices
- Send a text message instead of talking on the phone
- Encourage children to reduce the time they spend on cell phones

In addition, the use of cell phones or other devices can be distracting. Do not drive or participate in other activities that require attention for your personal safety while using the phone.

Are there guidelines about RF exposure?

Health Canada’s guideline document “Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz” (commonly referred to as Safety Code 6) establishes protection measures.

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