

# Fact Sheet

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## Cell Phone Use & Human Health

The following information is intended to address some of the questions people may have on the links between cell phone use, radiofrequency fields and human health.

### What are radiofrequency fields?

Radiofrequency Fields (RFs) are energy waves that are part of the electromagnetic spectrum. RFs have been used in telecommunications such as in the transmission of radio and television broadcasting. People are exposed to many sources of RFs. Cell phones, cell phone towers, cordless phones, pagers, remote control devices, and wireless Internet services (also known as WiFi) all emit low levels of RFs.

### Do cell phones affect health?

Health Canada notes that the weight-of-evidence from multiple studies to date does not indicate that the energy levels emitted by cell phones (radiofrequencies or RFs) cause health effects.

Health Canada also notes that while some studies have suggested effects such as changes in brain activity, reaction times, or in the time it takes to fall asleep linked to cell phone use, these effects have not been confirmed.

The potential of cell phone use to cause brain cancer in adults has also been studied. These studies have not found any risk from short-term use of cell phones. Extensive studies of long-term cell phone use (over a ten year period) showed no demonstrable increase in risk for most tumours studied.

While an elevated risk was detected for certain forms of brain tumour (e.g. glioma) there is still not enough information to draw clear conclusions about potential health effects from the long-term use (more than 10 years) of cell phones. Research in this field is ongoing.

### Are children more likely to experience health effects from cell phone RFs than adults?

Research on the health effects from cell phone RFs on children is very limited since the use of cell phones by young people is relatively recent and typically any health impacts that *may* be linked to extended use would likely not be detectable in the short-term.

Children are often more susceptible to environmental agents than adults, and some researchers have suggested that this could also be the case for RFs. Today's children have started to use cell phones at a younger age; therefore, their lifetime exposure to cell phone RFs will likely be greater than past generations. However, the manner in which cell phones are used by children and teens is also changing, with a dramatic increase in handheld texting eclipsing actual calling.

Until far greater research on multi-year use of cell phones by children and teens is completed there is insufficient evidence to determine whether any risk exists.

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## How am I exposed to RFs from using a cell phone?

When you make a call with a cell phone, a radio signal travels to the closest base station antenna. The signal is eventually sent from the antenna to the phone you are calling. This radio signal is sent by way of RFs. The antenna inside the cell phone gives off RFs and some of these are transferred to and absorbed into the head when you are using the phone. The closer the antenna is to your head or body, the greater the exposure to RF energy. Exposure to RFs is greater if you use the cell phone for long calls or if the closest antenna is far away.

## Should children use cell phones?

Cell phones are important for communication and for safety reasons. Parents need to make decisions regarding their own child's cell phone use.

Parents should be aware that while short-term use of cell phones (under ten years) in *adults* has been shown to have no elevated risk, there is limited high quality research into the potential health impacts of long-term radiofrequency exposure in children and teens.

The highest *known* risk to teens and adults of cell phone use for which we do have evidence, is unrelated to radiofrequencies; it is texting or calling while driving a motor vehicle, an activity which contributes to driver distraction resulting in motor vehicle-related injuries and fatalities.

## Where can I get more information?

Links to sites external to the Toronto Public Health web site are provided as a convenience and their inclusion does not imply that Toronto Public Health endorses or accepts any responsibility for the content or use of these sites.

- Safety of Cell Phones and Cell Phone Towers. Health Canada.  
(<http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/cell-eng.php>)
- Cell phones, brain tumours and kids: Health Canada clears the airwaves. Sick Kids.  
(<http://www.aboutkidshealth.ca/News/Cell-phones-brain-tumours-and-kids-Health-Canada-clears-the-airwaves.aspx?articleID=11041&categoryID=news-type>)
- Wireless Technology and Health Outcomes. Ontario Agency of Health Protection and Promotion. ([http://www.oahpp.ca/resources/documents/10-09-2010\\_Wireless\\_technology\\_and\\_health\\_outcomes\\_v2.pdf](http://www.oahpp.ca/resources/documents/10-09-2010_Wireless_technology_and_health_outcomes_v2.pdf))
- United Kingdom Health Protection Agency Health Advice on Mobile Phones.  
([http://www.hpa.org.uk/Topics/Radiation/UnderstandingRadiation/UnderstandingRadiationTopics/ElectromagneticFields/MobilePhones/info\\_HealthAdvice/](http://www.hpa.org.uk/Topics/Radiation/UnderstandingRadiation/UnderstandingRadiationTopics/ElectromagneticFields/MobilePhones/info_HealthAdvice/))