



Cell Phone Radiation & Children's Health: What Parents Need to Know

Children are not just little adults; their growing minds and bodies make them uniquely vulnerable to the effects of the environment around them, including cell phone radiation. Because technology is being adopted by children at younger ages than ever before, it's even more important to investigate if cell phone usage is a health hazard.



What is cell phone radiation, anyway?

There are two types of radiation: ionizing and non-ionizing.

- **Ionizing radiation** (e.g., x-rays, radon, sunlight) is high frequency (and high energy).
- **Non-ionizing** is low frequency (low energy) radiation.

Cell phones have non-ionizing radiation. Your phone sends radio frequency waves from its antenna to nearby cell towers. When you make a call, text, or use data, your phone receives radio frequency waves to its antenna from cell towers.

What does the latest research say?

Several studies have been done to find out if cell phone use can lead to cancer. These types of studies in people have not shown clear evidence of an increased cancer risk with cell phone use. While there was a slight increase in a type of brain tumor, called a glioma, in a small group of people who spent the most total time on cell phone calls in one study, other studies have not found this to be true.

In May 2016, the US National Toxicology Program, which is part of the National Institutes of Health (NIH), released partial findings from a two-year study (<http://biorxiv.org/content/early/2016/05/26/055699>) that exposed rats to the types of radio frequency radiation that cell phones give off and compared them with a non-exposed group. Some rats developed cancerous tumors after being exposed to the radiation—showing a potential connection between exposure to radiation and an increased risk of cancer.

A few words of caution about this study:

- This study was only done on rats. While rats can be good test subjects for medical research, they are not the same as humans. We do not yet know if the same results would occur in people.
- The rats were exposed to very large amounts of radiation—nine hours a day, seven days a week, for two years. This is far more than most people spend holding their cell phones.
- More male rats developed cancerous tumors after being exposed to the radiation than female rats. Some of the rats who developed tumors lived longer than the control group rats that were not exposed to radiation.
- The analysis of all of the data from this study is not yet complete.

Why is more research needed?

Parents should not panic over the latest research, but it can be used as a good reminder to limit both children's screen time (</English/family-life/Media/Pages/Media-Time-Family-Pledge.aspx>) and exposure from cell phones and other devices emitting radiation from electromagnetic fields (EMF) (</English/safety-prevention/all-around/Pages/Electromagnetic-Fields-A-Hazard-to-Your-Health.aspx>). Partial findings from studies like this one give scientists reason to look into the issue more. **The American Academy of Pediatrics (AAP) supports more research into how cell phone exposure affects human health long term, particularly children's health.**

How can we limit cell phone radiation for ourselves and our children?

The AAP reinforces its existing recommendations on limiting cell phone use for children and teenagers. The AAP also reminds parents that cell phones are not toys, and are not recommended for infants and toddlers (</English/family-life/Media/Pages/Tablets-and-Smartphones-Not-for-Babies.aspx>) to play with.

Cell phone safety tips for families:

- Use text messaging when possible, and use cell phones in speaker mode or with the use of hands-free kits.
- When talking on the cell phone, try holding it an inch or more away from your head.
- Make only short or essential calls on cell phones.
- Avoid carrying your phone against the body like in a pocket, sock, or bra. Cell phone manufacturers can't guarantee that the amount of radiation you're absorbing will be at a safe level.
- Do not talk on the phone or text while driving (</English/ages-stages/teen/safety/Pages/Sample-Driving-Rules-Teens-Must-Follow.aspx>). This increases the risk of automobile crashes.
- Exercise caution when using a phone or texting while walking or performing other activities. "Distracted walking" injuries are also on the rise.
- If you plan to watch a movie on your device, download it first, then switch to airplane mode while you watch in order to avoid unnecessary radiation exposure.
- Keep an eye on your signal strength (i.e. how many bars you have). The weaker your cell signal, the harder your phone has to work and the more radiation it gives off. It's better to wait until you have a stronger signal before using your device.
- Avoid making calls in cars, elevators, trains, and buses. The cell phone works harder to get a signal through metal, so the power level increases.
- Remember that cell phones are not toys or teething items.

Are there any regulations in place to limit cell phone radiation in the United States?

The Federal Communications Commission (FCC) decides how much radiation cell phones are allowed to give off in the US. Currently, the FCC limit is at 1.6 W/Kg. The FCC, however, has not revised the standard for cell phone radiation since 1996, and a lot has changed since then.

- There are now more cell phones in the United States than there are people.
- The number of cell phone calls per day, the length of each call, and the amount of time people use cell phones has increased.
- Cell phone and wireless technology have had huge changes over the years. For example, how many cell phone models have you had since 1996?

Another problem is that the cell phone radiation test used by the FCC is based on the devices' possible effect on large adults—not children. Children's skulls are thinner and can absorb more radiation.

Where the AAP stands:

The AAP supports the review of radiation standards for cell phones in an effort to protect children's health, reflect current cell phone use patterns, and provide meaningful consumer disclosure. Providing parents with information about any potential risks arms them with the information they need to make informed decisions for their families. The AAP advocates for more research into how cell phone exposure affects human health long term, particularly children's health.

Additional Information & Resources:

- Cell Phones: What's the Right Age to Start? (</English/family-life/Media/Pages/Cell-Phones-Whats-the-Right-Age-to-Start.aspx>)
- Parents of Young Children: Put Down Your Smartphones (</English/family-life/Media/Pages/Parents-of-Young->

[Children-Put-Down-Your-Smartphones.aspx](#))

- Cell Phones (<http://www.niehs.nih.gov/health/topics/agents/cellphones/>) (National Institute of Environmental Health Sciences)
- Cell Phones and Cancer Risk Fact Sheet (<http://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/cell-phones-fact-sheet>) (National Cancer Institute)

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