

European Union study finds children have higher 5G radiation exposure rates

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Environmental Health Sciences Staff

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A first-of-its-kind study published in [*Physics in Medicine & Biology*](#) used 550 computer simulations to compare wireless radiation absorption rates in child and adult body models across 15 frequencies spanning 5G and coming 6G technology wireless technologies, finding higher whole-body absorption rates in child models below 6 GHz.

Study findings:

- The child models had 1.5–1.9 times higher whole-body wireless radiation absorption rates than adult models at frequencies below 6 GHz.
- The child models also showed higher brain-to-skin wireless radiation absorption rates than adults at the higher frequencies just below 6 GHz.
- Simulated 5G beamforming— which focuses 5G signal into a narrow, directed beam —created wireless radiation “hotspots” in the body. At some frequencies, these exceeded absorption limits in both child and adult models, even though the radiation reaching the body met the external exposure limit.

About 5G: 5G uses low, mid, and high frequency bands, with low and mid band frequencies penetrating deeper into the body. This study found that absorption became increasingly concentrated in the skin as frequency increased. While the simulations in this study used exposure levels higher than typical everyday settings, the researchers conclude that compliance assessments for wireless exposure from 5G and future technology may need to account for beamforming and children's exposure.

Key quote:

“Our findings suggest that compliance assessment may need to account for factors such as beamforming and body size, particularly as new frequency bands are considered for future wireless networks.”

- Robin Wydaeghe, lead study author and researcher at Ghent University, via Gloiat's [press release](#).

Why This Matters:

New 5G and emerging 6G frequency bands are being introduced even as critical [safety gaps](#) remain for children's health. The findings come alongside additional new research studies linking rising environmental cell tower radiation exposure to [adverse effects](#) as well as [higher brain absorption](#) in child models. Children's bodies and brains are still developing, making them more sensitive to environmental impacts. In 2026, the International Commission on the Biological Effects of Electromagnetic Fields ([ICBE-EMF](#)), an international group of scientists, physicians, and researchers with expertise in wireless radiation and health, issued a [position statement](#) calling for safeguards to protect children from increasing wireless radiation exposures.

This new study adds to the growing body of [scientific research](#) documenting children's higher wireless radiation absorption rates compared to adults. A 2018 cell phone [modeling study](#) found that children received substantially higher rates of wireless radiation from cell phones compared to adults, including up to about 30 times more in the hippocampus of the brain and roughly 2–5 times more in the eyes. A 2023 study modeling brain absorption [from cell-tower/base-station signals](#) also found that children's whole-brain wireless radiation absorption rates were higher. Studies also report that in some cities with dense wireless networks, the rising levels of ambient environmental RF radiation from [continuous cell-tower and mobile phone base stations](#) can contribute more to cumulative exposure than personal cell-phone use.

Although exposure studies generally report compliance with government limits, compliance should not be equated with long-term safety. FCC and ICNIRP limits [primarily address](#) effects of short-term heating, not the cancer, reproductive, neurological, and immune effects reported in [numerous studies](#). The U.S. FCC and Department of Health and Human Services are now seeking [public input](#).

Further, the numerous devices in today's world create overlapping exposures. A 2025 [engineering study](#) modeled young children using Wi-Fi laptops in a classroom and found

that nearby transmitting laptops could substantially increase localized absorption by up to 40-fold in the back, compared with a child using one laptop alone.

The [ICBE-EMF children's health statement](#) focuses on the risk to children's health from wireless exposure in school classrooms. They, along with other [expert groups](#), recommend implementing exposure reduction strategies in schools such as prohibiting cell towers on or near school property.

Related *EHN* coverage:

- [Study: Wireless radiation limits are at least 200x too high to protect against cancer risk](#)
- [New York City exposure to wireless radiation increased over 100-fold in 50 years](#)
- [Majority of studies report human health impacts from cell tower radiation exposure](#)
- [U.S. cell tower & cell phone radiation policy fails public health, new paper finds](#)

More resources:

- [Science on Children, Cell Phone Radiation and Health Risk](#)
- [Fact Sheets and Briefings on Cell Towers, Cell Phones and Health](#)
- [Child Health Position Statement of the International Commission on the Biological Effects of Electromagnetic Fields](#)

To stay updated with the latest science news on cell towers and 5G, [subscribe to the Wireless and EMF newsletter](#)

Source:

[Robin Wydaeghe et al. \(2026\). Environmental and auto-induced RF-EMF adult and children far-field exposure simulations between 450 MHz and 26 GHz. *Physics in Medicine & Biology*.](#)