

Yale Study: Wireless radiation autism-related genes in laboratory models

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A recent study by Yale researchers published in [Cell Reports](#) found that exposure to wireless radiofrequency (RF) radiation — emitted by cell phones, cell towers, and Wi-Fi — interfered with neurodevelopment and increased the expression of autism-related genes in laboratory models of the fetal brain.

This was a state-of-the-art study using human cortical organoids — tiny, lab-grown models of the developing human brain. Created from stem cells, these organoids form many of the same early brain structures seen in a fetus. They are not full brains and have no consciousness, but they closely mimic early fetal brain development, and scientists [use them](#) to study how environmental exposures such as air pollution, microplastics, and diesel fuel could impact the brain.

The experiments used a wireless transmitter operating at Bluetooth frequency and power, at exposure levels 4,000 times lower (0.025%) than the FCC's limit for allowable human exposure to RF wireless radiation.

In short:

- Exposure to RF radiation disrupted and delayed the differentiation of nerve and brain cells that takes place during fetal development.
- Neurons exposed to RF radiation displayed altered function and morphology.
- Exposed neurons also exhibited increased expression of genes associated with autism spectrum disorder.

Key quote:

“Our findings revealed that RF-exposed cortical neurons exhibited increases in Autism Spectrum Disorder-associated gene expression and dendritic spine density, characteristics of patients on the autism spectrum.”

Why this matters:

This study adds to a growing body of research reporting cell phone health risk, particularly during pregnancy and early childhood when the brain is developing rapidly and uniquely vulnerable to environmental impacts. The American Academy of Pediatrics has repeatedly

called for an update to the U.S. Federal Communications Commission (FCC), [highlighting](#) how children [absorb proportionately higher rates](#) of wireless into their brains and bodies during sensitive stages of development. [Numerous experts and medical groups](#) recommend reducing exposure, especially to children.

The researchers highlight that previous studies in animal models have shown autism-like behaviors and [increased hyperactivity and memory impacts](#). They state that the parallels drawn from these studies “underscore the relevance of our findings in a human context.” Some human studies have associated prenatal and postnatal exposure to RF radiation with [lower cognitive scores](#) and [behavioral problems](#).

“Parents hand their child a cell phone assuming it’s safe, but what they don’t know is that there is a [substantial body](#) of scientific evidence reporting harm, and yet our regulations are decades out of date,” stated Theodora Scarato, Director of the [Wireless and EMF Program](#) at EHS. “Wireless exposure should be reduced — especially for children and during pregnancy.” In 2021, the D.C. Circuit specifically [ordered the FCC](#) to explain how its 1996 wireless radiation limits protect children and address the scientific evidence reporting neurological, reproductive, and developmental impacts. Yet the FCC has still not responded to the court.

What you can do:

- **Reduce exposure at home:** Create distance between your child and wireless devices, and keep phones off and away from the body — especially during pregnancy. Reduce Wi-Fi exposure by hardwiring your tech. [Learn more about how to reduce exposure here.](#)
- **Share this information:** Talk to your community and elected officials. [Download our factsheets on science and policy here.](#) Share expert [medical and scientific recommendations.](#)
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Children are more vulnerable to cell phone radiation. www.ehn.org

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