

Comment For FCC ET Docket No. 13-84

[Specifically, the court directed the FCC to address:

- The impacts of RF radiation on children.
- The health implications of long-term exposure to RF radiation.
- The ubiquity of wireless devices and technological developments since the FCC's RF exposure guidelines were last updated in 1996.
- **The impacts of RF radiation on the environment.**
- The adequacy of the FCC's RF radiation testing procedures for cell phones and other portable wireless devices.]

Filed by Ed Kellogg, Ph.D. on 10/18/26

Response to: FCC request for *public comments to ET Docket No. 13-84 as it responds to a federal court order requiring the agency to address evidence and concerns about the adverse health and environmental impacts of wireless radiation.*

All Links in text and any attached pdfs hereby incorporated by reference. [Summary statement appended at the end.]

For the record.

To whom it may concern –

First, the FCC has failed to take into account the extremely adverse effect that the roll-out of 5G and AI has had, and increasingly has on the human carbon footprint. This issue, the impact that digital technologies have on climate change through their carbon footprint - seems almost entirely unreported by the media - including the expected doubling of that carbon footprint should 5G replace what we currently have. According to the ***Shift Project***, all digital technologies accounts for **4%** of all human greenhouse gas emissions, **and the higher the data rate** - as with 5G - the higher the environmental cost, with this figure estimated **to double to 8%, 2,400 million tons of CO2** - by 2025.

The **2019 Shift Project report:** *"CLIMATE CRISIS: THE UNSUSTAINABLE USE OF ONLINE VIDEO: The practical case for digital sobriety."*

<https://theshiftproject.org/wp-content/uploads/2019/07/2019-02.pdf>

The Impact of AI Data Centers

Unfortunately, with the unimpeded and unregulated roll out of 5G during the pandemic, the impact of digital technologies on the human carbon footprint and climate already much exceeds that predicted by this report.

And worse, the increasing roll-out of AI Data centers and their environmental impact the impact of digital technologies on the human carbon footprint and climate far beyond that of what the Shift Project Report anticipated.

According to an EarthJustice Report, published in their Summer 2026 issue; "The projected energy demands of AI across the country are mindboggling. By 2028, it is expected that it could consume as much electricity annually as **22% of U.S. households.**"

They also added that: "Open AI, one of the largest companies, wants 250 gigawatts of power by 2033 - about **a third of the current peak power demand for the entire nation.**"

The Human Cost of Ever-Increasing RF Exposure at Toxic Levels

Furthermore, compelling evidence of detrimental biological effects of RF at very low non-thermal levels of exposure exists in thousands peer reviewed scientific research papers. Adding higher 5G frequencies - none of them tested for safety - while increasing public exposure limits to RF seems both a recipe for disaster, and a clear violation of the precautionary principle.

Over the past two decades research on the effects of RF clearly indicates that as RF frequencies increase, and as wavelengths shorten, and as it does with 5G, that harmful biological effects increase as well. For example, see this excerpt from a 2019 comprehensive review, [*"Comparing DNA damage induced by mobile telephony and other types of man-made electromagnetic fields"*](#) (Panagopoulos, D.J., **Mutation Research-Reviews in Mutation Research 781 (2019) 53–62.** (All links in text in this article hereby incorporated by reference):

"The extreme and unpredictable variability of the real-life MT signals that apparently seems to be the reason for the corresponding intense bioactivity, does not concern only the 2nd generation (GSM) MT signals tested in our experiments and in the present review, but all existing types of digital MT signals (2nd, 3rd, 4th generation), and all types of modern digital microwave telecommunication signals/EMFs (DECT phones, Wi-Fi routers, etc.), since they all operate under the same principles combining RF carrier signals with ELF pulsing and modulation of similar frequency bands, emitting variable information each moment which in turn makes the emission variable in intensity, frequency, waveform etc.

In fact, with every new generation of telecommunication devices (e.g. 3rd, 4th, 5th generation mobile phones or base antennas) the amount of information transmitted each moment (speech, text, images, video, internet, etc.) is increased, resulting in higher variability and complexity of the signals with the living cells/organisms even more unable to adapt.

The result of the recent study that found a real 3rd generation (UMTS) MT EMF to be more bioactive than real 2nd generation (GSM) MT EMF emitted by the same device [36] is in line with this fact."
[Emphasis added]

A relevant excerpt of a presentation I made to the *Jackson County Board of Commissioners* in Oregon, ["RF Health and Safety Research: 2018 Science Summary"](#):

"Other important replicated effects, observed in many different laboratories at very low levels of RF exposure,⁴ include neurological damage in animals such as leakage of the blood brain barrier.^{8,9} Unfortunately, research has clearly established that children absorb far more RF radiation than adults, especially in the brain, making them much more vulnerable to harm.¹⁰ And obvious problems resulting from this harm may not show up immediately, but as with tobacco smoking, may take decades to appear.

As the authors of a 2012 review of RF blood brain barrier studies observed, *"... neuronal damage may not have immediately demonstrable consequences, even if repeated. It may, however, in the long run, result in reduced brain reserve capacity that might be unveiled by other later neuronal disease or even the wear and tear of ageing. We can not exclude that after some decades of (often), daily use, a whole generation of users, may suffer negative effects such as autoimmune and neuro-degenerative diseases maybe already in their middle age."* (p 45) ⁹

8. *Increased blood-brain barrier permeability in mammalian brain 7 days after exposure to the radiation from a GSM-900 mobile phone.* Nittby, H. et al, *Pathophysiology*. Vol. 16(2-3), pp 103-12, Aug. 2009.

<https://www.ncbi.nlm.nih.gov/pubmed/19345073>

9. *Effects of Electromagnetic Fields from Wireless Communication upon the Blood-Brain Barrier.* [A Review]. Leif G. Salford, MD, PhD., 2012

http://www.bioinitiative.org/report/wp-content/uploads/pdfs/sec10_2012_Effects_Electromagnetic_Fields_Wireless_Communication.pdf

In February of this year *Blue Cross Blue Shield* released a report **that provides strong supporting evidence of an unprecedented increase in early onset Dementia**, confirming an increase in Early Onset Dementia or in Alzheimer's in humans as predicted from this research:

<https://www.bcbs.com/the-health-of-america/reports/early-onset-dementia-alzheimers-disease-affecting-younger-american-adults>

Early-Onset Dementia and Alzheimer's Rates Grow for Younger American Adults Published **February 27, 2020**

Excerpts: " Each year, early-onset dementia and Alzheimer's disease affect the daily lives of a growing number of Americans under 65. As measured by the [Blue Cross Blue Shield \(BCBS\) Health IndexSM](#) in 2017, about 131,000 commercially insured Americans¹ between the ages of 30 and 64 were diagnosed with either condition."

" Diagnosis rates for both conditions are rising in younger adults, **with the average age** of someone living with either form of dementia **at 49 years old.**"

In the 4 years between 2013 and 2017, early-onset dementia and Alzheimer's disease combined diagnosis rates **TRIPLED** for adults aged 30 to 64, going up from **4.2/10,000** adults to **12.6/10,000** adults.

It seems important to note that having an average age of 49 means that people in the 30 to 49 age bracket had just as many cases of Early-Onset Dementia and Alzheimer's as did those from 49 to 64.

No mention or speculation as to **why** this has happened, or what people might do to prevent it - just that *"These health trends indicate a need for a focus on appropriate care and support for individuals with either form of dementia and support for their caregivers as the disease progresses."* **If** the increasing trend in

Early-Onset Dementia and Alzheimer's continues at this rate - tripling every 4 years - by 2021 the United States will have 37.8/10,000 and **by 2025** 113.4/10,000, **or over 1 in 100** people aged 30-64.

Autism in children shows a similar unprecedented increase. "According to [National Health data released last week](#), autism incidence among Irish children is now at 4.3%, an 82% rise in five years. One in 16 boys is affected." (Pdf also filed.)

And given the current Covid-19 pandemic, it seems important to emphasize that having a leaky blood-brain barrier - at the same time as having a viral infection - does NOT seem a good thing, and may well explain the brain damage and inflammation reported in some Covid-19 cases.

According to NASA, even in 2018 public RF exposure since the 1940 had gone up over a **million million million - 1,000,000,000,000,000,000 (10¹⁸)** - times! (See: <https://www.thelancet.com/journals/lanplh/home> Vol 2 December 2018 (Data from NASA)

Despite the promotional advertising claims of the telecom industry, with respect to 5G (or anything else) "*no safety testing*" and "*proven safe*" **DO NOT** mean the same thing.

Given the thousands of published peer-reviewed scientific research papers documenting the environmental and human health costs of human RF exposures and of the digital technologies now in common use, I urgently ask the FCC to update their RF exposure standards in accordance with these facts and to give this task the highest priority.

Thank you.

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SUMMARY STATEMENT: "The FCC has failed to take into account the extremely adverse effect that digital technologies such as the recent roll-out of 5G and now of AI data centers have had and will have on **CLIMATE CHANGE**. This issue, the impact that digital technologies have on climate change through its carbon footprint - almost entirely unreported by the media - includes the expected doubling of our human carbon footprint - from 4% to 8%, 2,400 million tons of CO₂ by 2025. And worse, by 2028 the projected energy demands of AI predict that it could consume as much electricity annually as **22% of U.S. households.**"

With respect to **HEALTH EFFECTS**, the FCC in not changing their RF safety standards, that people today not only get exposed to different RF frequencies then did decades ago when they set those standards, and for far longer periods of time. The FCC has also failed to take into account the extremely adverse effects that research over the past three decades has shown that microwaves can have, and that as RF frequencies increase, and as wavelengths shorten and become more complex, and as it does with 5G, that harmful biological effects increase as well. Important replicated effects, observed in many different laboratories at very low levels of RF exposure, includes neurological damage in animals such as leakage of the blood brain barrier. In February of 2020 Blue Cross Blue Shield released a report that provides strong supporting evidence of an unprecedented increase in early onset Dementia, confirming an increase in Early Onset Dementia or in Alzheimer's in humans AS PREDICTED from this research. According to this report, in the 4 years between 2013 and 2017, early-onset dementia and Alzheimer's disease combined diagnosis rates TRIPLED for adults aged 30 to 64, going up from 4.2/10,000 adults to 12.6/10,000 adults.

Autism in children shows a similar unprecedented increase. According to National Health data released in 2020, autism

incidence among Irish children is now at 4.3%, an 82% rise in five years. One in 16 boys is affected." And given the current Covid-19 pandemic, it seems important to emphasize that having a leaky blood-brain barrier - at the same time as having a viral infection - does NOT seem a good thing, and may well explain the brain damage and inflammation reported in some Covid-19 cases. And as Panagopoulos has shown in his 2019 review, the extreme and unpredictable variability of real-life cell phone signals - which 5G will markedly increase - results in ever more complex and biologically harmful signals to living cells/organisms."]