

Response to HHS Request for Information on EMF, RF Radiation and Wireless Technologies

Docket HHS-OASH-2026-0397

Introduction

This response is submitted by an individual living in the United Kingdom. It answers Questions 2, 3, 7, 8, 9, 16 and 18.

The information below comes from my own experience, my own measurements with a consumer RF meter, and correspondence with UK authorities. It is not peer-reviewed research. I have tried throughout to separate what I observed from what I concluded, and to state the limitations of my observations and measurements.

Question 2: Perspective

I am responding as an individual consumer living in the United Kingdom. I have worked in technology since the age of 16, hold a networking qualification (Cisco CCNA, 2012), and have always had a strong interest in networking and wireless systems. I am not an RF engineer or a medical professional.

Question 3: Personal experience

This is a retrospective account. The only contemporaneous record I kept is a dated diary from late May 2025 onwards; earlier dates come from memory and correspondence.

a. Sources

Mobile phone base stations near my home. I keep in-home sources to a minimum: no Wi-Fi, phones off at night, and some circuits switched off overnight.

b. Exposure

For most of my adult life my homes were full of wireless technology. I used Wi-Fi throughout as soon as it became available, and from 2017 I had numerous smart home devices, including wireless lights, switches and sensors, and several smart speakers. I had no symptoms of the kind described below during that time. I did not measure exposure in those years, so I cannot compare it with what came later.

Since then I have had continuous residential exposure at two homes in the UK. The first, which I lived in from 2022 to 2024, was about 400m from a base station whose antennas sat roughly level with neighbouring homes. The second, from late 2024 onwards, is further from the nearest base stations.

c. Effects

A very high-pitched tone perceived inside the head rather than heard, which earplugs do not block; difficulty falling asleep, often for one to two hours; waking early; feeling energised and restless at night; pressure in the head; tingling of the skin on my head; difficulty concentrating; and irritability. At the second home I also developed a separate lower tone, dizziness and unsteadiness.

Impact on daily life. The disrupted sleep affects every part of my day. The tone in my head is very distracting and, together with poor concentration and dizziness, affects my work and makes socialising harder. I now feel anxious before visiting public places, travelling, going on

holiday or working away, because I cannot know in advance what wireless equipment will be present. There is also a financial cost: shielding materials, and rewiring my home network so that it uses cables instead of Wi-Fi, at a total cost of approximately £1,800.

d. Timing

The high-pitched tone began after I moved to the first home. Using a consumer broadband RF meter (GQ EMF-390), I measured outdoor readings facing the base station of roughly 2,000 to 4,000 $\mu\text{W}/\text{m}^2$. The tone stopped when I moved to the second home.

In spring 2025 the tone returned, together with night-time restlessness, when I had previously been sleeping well. Only afterwards, on a walk, did I notice that a nearby base station, a 4G site when I moved in, had been rebuilt with new antennas. The operator has since confirmed it now runs 5G Standalone; I do not know the date it went live. Symptoms worsened markedly from late May 2025.

e. Medical evaluation

I was referred to a consultant ENT surgeon for the dizziness, unsteadiness and lower tone. An MRI of the brain and auditory nerves showed no abnormality.

f. Steps taken and changes observed

After my symptoms began at the first home, which I attributed to the nearby base station, I removed Wi-Fi from the house entirely to reduce my overall exposure. This reduced my difficulty concentrating and my irritability.

At the first home, shielding fabric on the bedroom walls reduced my meter readings at the bed by about 60% but made no difference to the tone. Sleeping inside a fully enclosed shielding canopy minimised or removed the high-pitched tone, and the same happened again at the second home.

I recognise these observations are unblinded: I always knew when I was inside the canopy.

g. Supporting information

Before and after shielding readings from the first home are summarised at the end of this document. At my current home, indoor readings sit at my meter's lower detection limit, so I cannot quantify exposure there with the equipment I have. This is one reason I believe better and more accessible exposure measurement is needed (see Question 8).

Question 7: Methods for characterising exposure

This response is based on my own measurements, together with publicly available technical information. My background is in IT and networking (see Question 2).

Broadly, three kinds of method are available. Professional surveys use calibrated, frequency-selective equipment and can separate the contribution of each source, but they are expensive and rarely available to residents. Personal exposimeters, worn on the body, are used in research to estimate individual exposure over time, but they have known limitations, including shielding by the wearer's own body and limited sensitivity at low levels. Consumer broadband meters are cheap and widely used by the public, and are what most people concerned about exposure actually rely on to make decisions.

My experience is that consumer meters are useful at elevated levels and unreliable at typical ones. At a previous home, readings outdoors facing a nearby base station were roughly 2,000 to 4,000 $\mu\text{W}/\text{m}^2$, well above the instrument's floor, and shielding produced a clear, measurable reduction.

At my current home, readings of 8 to 15 $\mu\text{W}/\text{m}^2$ showed no difference between a window facing a base station and a windowless internal room, and no reduction when the meter was wrapped in shielding fabric. That tells me those readings are the instrument's own noise floor, not a measurement of anything outside. The meter gives no warning of this, and its automatic source label reported "WiFi/Phone" even with every in-home transmitter switched off. Its spectrum display also showed a persistent signal around 435 to 448 MHz which, on investigation, was generated by the instrument itself.

In the UK, operators self-declare compliance, and I could not obtain any site-specific measurement from the regulator. In response to a formal information request, the UK communications regulator (Ofcom) confirmed it held no compliance assessments for the base station nearest my home.

Question 8: Improvements needed

First, consumer instruments sold for exposure measurement should state a verified detection limit and measurement uncertainty, and should be independently tested. Many people make health and spending decisions on readings that may be pure instrument noise.

Second, a simple, validated measurement protocol for residents would greatly improve the quality of public data. Mine developed through trial and error: paired readings at an exposed position and a shielded internal control taken in the same session, a shielded-meter test to identify the noise floor, and reporting medians rather than peaks. Readings at the same position varied by up to 60% between sessions with no external change, so unpaired readings are not meaningful.

Third, low-cost frequency-resolved measurement (for example, software-defined radio) should be assessed, since broadband readings cannot attribute exposure to a source.

Fourth, measurements at modern base stations using beamforming depend heavily on network traffic at the moment of measurement. Methods already exist in international standards to estimate realistic maximum exposure from such antennas, and site-specific results should be made available to residents.

Finally, research into reported sensitivity should pair continuous exposure logging with symptom diaries and blinded changes in exposure, such as sham and real shielding, so that individual reports can be tested rather than simply counted.

Question 9: Information that should be disclosed

Residents currently have almost no information about the base stations near their homes. I could not find out when a rebuilt site near my home began transmitting, what technology and frequencies it uses, or what exposure it produces at my home.

In the UK, national planning policy requires operators to self-certify that a site will comply with international exposure guidelines when operational. No measurements are required, and the regulator confirmed it held no compliance assessment for the site nearest my home.

I recommend that the following be disclosed to residents, schools and local governments near wireless infrastructure:

- Notice before a new site is built or an existing site is materially changed, including the date new technology or frequency bands are switched on.
- The technologies, frequency bands and maximum transmitted power at each site.
- Predicted exposure at nearby homes and schools, calculated from the site's actual configuration rather than a generic statement of compliance.
- Access to independent measurement on request, so that residents are not reliant on the operator's own declaration.

This information would also make research possible. Without knowing when exposure changed, neither residents nor researchers can relate changes in health to changes in exposure.

Question 16: Research priorities

My highest priority is research that tests individual reports of sensitivity rather than simply counting them. That means blinded trials in people's own homes using real and sham shielding, combined with continuous exposure logging and symptom diaries (see Question 8). Such trials are inexpensive, can run with individuals over weeks or months, and address the main limitation of self-reported accounts such as my own.

Question 18: Recommendation

New wireless technologies are being added to existing infrastructure and deployed at new frequencies, such as 5G, the bands proposed for 6G, and satellite direct-to-device services, faster than their long-term health effects can be studied.

I recommend that federal health agencies advise that new frequency bands and exposure characteristics should not be authorised for widespread deployment until an independent, publicly funded assessment of their biological effects has been completed, within defined timescales so that the requirement is proportionate. Deployment should also be accompanied by exposure monitoring and health surveillance, so that any problems can be detected.

My own experience of a nearby site being rebuilt with new technology, without any notice to residents, illustrates why this matters (see Questions 3 and 9).

Supporting data: shielding readings at the first home, August 2024

Wall shielding reduced average RF readings at both sleeping positions by 60 to 70%. Readings were taken with a GQ EMF-390 consumer broadband meter, before and after installation, and are averages of logged values.

Position	Before shielding ($\mu\text{W}/\text{m}^2$)	After shielding ($\mu\text{W}/\text{m}^2$)	Reduction
My bed	about 42	about 17	about 60%
Second sleeping position	about 133	about 39	about 70%

Outdoors, facing the base station	2,000 to 4,000	not applicable	not applicable
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These are consumer-meter readings and are indicative only. They are well above the instrument's noise floor of roughly 8 to 15 $\mu\text{W}/\text{m}^2$.