I am an EMF Consultant, owner of EMF Healthy, and certified by the Building Biology Institute (Building Biology Environmental Consultant, 2014 and Electromagnetic Radiation Specialist, 2014.) I have been doing EMF assessments of homes and offices since 2011-- 11 years in California and 5 years in Arizona. Attached are two case studies that I originally submitted as part of the amicus brief that the Building Biology Institute filed in support of the lawsuit against the FCC by the Environmental Health Trust and other organizations about 5 years ago. I feel that these case studies are worth submitting again.

Andrea

Andrea is a 76-year-old woman who lives in a townhouse in Napa, California. She contacted me because she had serious issues with word retrieval. She used to give professional presentations and would find herself grasping for common words. She had this issue for about 10 years. She had gone to many integrative doctors and tried many treatments without success.

I came to her home on May 9, 2018. I took readings with Gigahertz Solutions' HFE59B and HFW59D radio frequency meters. Following are my measurements, first with all of Andrea's wireless devices on, then with her devices off:

Radio Frequency (in uW/m2)			
Location	Readings with devices on	Readings with devices off	Comments
Kitchen	9,000	112	At sink
Kitchen	2,600	66	At stove
Family room	14,500	62	Wireless router
Dining table	5,500	42	
Computer area	20,000+	265	With computer on, Bluetooth and Wi-Fi on
Guest bedroom	6,500	6,500	From neighbor's router
Master bedroom	2,000	1,500	Primarily from neighbor's router and cordless phone
Master bath	N/A	675	
Guest bath	N/A	940	
Bluetooth in car	1,200		
Andrea's cell phone	15,000		At about two feet away

I found extremely high levels of radio frequency throughout her townhouse, primarily from her wireless router in the family room, but also from wireless devices in the adjoining townhouse. The Building Biology extreme concern range is > 1,000 uW/m2[1].

By temporarily turning off all her wireless devices, we were able to achieve substantial reduction in exposures. However, there were still high exposures in the master bedroom from the wireless devices in the adjoining townhouse. Andrea made the following changes:

- Turned off wireless function on router
- Hard wired her computer and turned off wi-fi and Bluetooth
- Got hardwired mouse and keyboard

- Purchased a corded phone (AT&T CL4940)
- Hard wired TV by using ethernet cable
- Purchased a shielded bed canopy made from SwissShield Naturell (reduces exposures over 99%)
- Minimized cell phone use
- Turned off Bluetooth in her car

Cost for the remediation was $2,297 ($1,622 for bed canopy and $675 for I.T. company to help with hard wiring).

The Building Biology guidelines are only for the sleep areas. Less than 10 uW/m2 (slight concern) is recommended for the sleep areas. While the levels in the rest of the home did not reach this goal, they were overall good in most rooms for daytime exposure. The master bath, guest bath and computer area still had high exposures (Building Biology severe concern range[1]) but Andrea did not spend much time in these rooms. She reported that about a month after making the recommended changes she noticed that her word retrieval had significantly improved.

Andrea had the following to say about reducing her exposure to wireless devices:

> I am a writer with an excellent vocabulary, so when my ability to retrieve words was compromised, I thought it must be my age - 76 years old. But it made it almost impossible to write if the required word would not issue forth from my brain. In addition, my brain felt foggy, slow and no longer agile.
>
> Enter Liz Menkes who found that the EMF readings in my condominium were off the charts. She recommended a cage of fabric for my bed which I now happily sleep in, feeling protected and safe. She also recommended ways to eliminate wireless exposures from my living areas, such as ethernet cable for my computer and television. After only a month, I felt like my old self! My brain functioned better and it felt clearer. I felt younger and quicker. This was a HUGE boost to my self esteem, not to mention how I function in life.

About a year after implementing these changes, Andrea contacted me, reporting that the word retrieval issues had returned. We discussed her use of technology and she told me she had recently been given a Fit Bit. This device emits a radio frequency pulse every second or so. I recommended that she stop using it. Andrea reported that after about two weeks she no longer had the word retrieval issue.

Andrea called me again more recently, reporting that the word retrieval issue had again returned. We discussed her use of technology and she said that with the COVID-19 shelter-in-place restrictions, she had started using her cell phone more often, about 1 to 1 ½ hours a day. I had measured her cell phone at about 15,000 uW/m2 at a two-foot distance (Building Biology extreme concern range[1]). I recommended that Andrea stop using her cell phone unless it was urgently needed. Andrea did this and reported that after about two weeks the word retrieval issue was again resolved.

There are numerous peer-reviewed studies that show cognitive impairment from exposure to radio frequency at low levels[2,3,4,5,6,7,8,9,10,11]. Zwamborn et al[11] reports decreased cognition at 1,300 uW/m2. Hutter, et al[3] reports concentration difficulties with exposures as low as 6 uW/m2 – 128 uW/m2.

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Barbara

Barbara is a 72-year-old woman living in St. Helena, California. She lives in a small cottage on the same property as her larger home, which is now rented out. She moved from the large house to the smaller cottage about a year ago, around the same time she started experiencing a significant decline in her cognitive functions. She had constant "brain fog"-- she would lose track of her thoughts mid-sentence and had difficulty following simple instructions that contained more than one step. Barbara is a very strong, independent and energetic woman. Her family thought that this cognitive decline was more than what might be expected from the normal aging process.

I visited her home on May 20, 2019. I took readings with a Gigahertz Solutions HFE59B and HFW59D radio frequency meters. I found extremely high levels of radio frequency in the areas where Barbara spent most of her time during the day. The reading in the family room (at Barbara's favorite spot on the couch) was 49,000 uW/m2. The reading at the dining table was 37,000 uW/m2. The Building Biology extreme concern level is greater than 1,000 uW/m2.[1] The sources of these exposures were the wireless devices in the home—a cordless phone next to the couch, an Apple TV, Apple booster and wireless router. In addition, Barbara had a wireless laptop that she used during the day. She also liked to take the laptop with her when she went to sleep. She would "surf the net" for a couple of hours, then fall asleep with the laptop next to her.

We temporarily turned off all these wireless devices and the levels in the home dropped to 4 uW/m2. This is excellent. We like to see levels less than 10 uW/m2 in the sleeping areas (Building Biology slight concern[1)]. Barbara's daughter was present during this assessment. When she saw the readings and understood how serious they were, she permanently unplugged the cordless phone and ordered a corded replacement. We were also able to hard wire Barbara's laptop while I was there and we turned off the wireless function on the router. We unplugged the Apple TV and Apple booster until they could be hard wired. I also advised Barabara not bring the laptop to bed with her. Barbara also had a cell phone which measured about 18,000 uW/m2 at about two feet away from her. I advised her to keep it turned off and only use it when she was away from her home and needed to reach someone urgently.

Cost for the remediation was about $100 for a new phone and various components for hard wiring. Barbara's family did the hard wiring themselves.

I spoke to Barbara about a week later and she told me that the very next morning after I was there she woke up with no brain fog! She told me she could not believe how good it felt to "have her brain back". She was extremely grateful to have found a resolution to this issue.

There are numerous scientific studies that show cognitive impairment from exposure to radio frequency at low levels.[2,3,4,5,6,7,8,9,10,11] Zwamborn et al[11] reports decreased cognition at 1,300 uW/m2. Hutter, et al[3] reports concentration difficulties with exposures as low as 6 – 128 uW/m2.

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