

# The Most Dangerous Technology Ever Invented – Part One

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October 20, 2021

### Part One

**In 1995, the telecommunications industry** was preparing to introduce a dangerous new product to the United States: the digital cell phone. Existing cell phones were analog and expensive, owned mostly by the wealthy, used for only a few minutes at a time. Many were car phones whose antennas were outside the car, not held in one's hand and not next to one's brain. Cell phones worked only in or near large cities. The few cell towers that existed were mostly on hilltops, mountaintops, or skyscrapers, not close to where people lived.

The problem for the telecommunications industry in 1995 was liability. Microwave radiation was harmful. Cell phones were going to damage everyone's brain, make people obese, and give millions of people cancer, heart disease and diabetes. And cell towers were going to damage forests, wipe out insects, and torture and kill birds and wildlife.

This was all known. Extensive research had already been done in the United States, Canada, the Soviet Union, Eastern Europe, and elsewhere. Biologist Allan Frey, under contract with the U.S. Navy, was so alarmed by the results of his animal studies that he refused to experiment on humans. "I

have seen too much," he told colleagues at a symposium in 1969. "I very carefully avoid exposure myself, and I have for quite some time now. I do not feel that I can take people into these fields and expose them and in all honesty indicate to them that they are going into something safe."

Frey discovered that microwave radiation damages the blood-brain barrier – the protective barrier that keeps bacteria, viruses and toxic chemicals out of your brain and keeps the inside of your head at a constant pressure, preventing you from having a stroke. He discovered that both people and animals can hear microwaves. He discovered that he could stop a frog's heart by timing microwave pulses at a precise point in the heart's rhythm. The power level he used for that experiment was only 0.6 microwatts per square centimeter, thousands of times lower than the radiation from today's cell phones.

Ophthalmologist Milton Zaret, who had contracts with the U.S. Army, Navy and Air Force, as well as with the Central Intelligence Agency, discovered in the 1960s that low-level microwave radiation causes cataracts. In 1973, he testified before the Commerce Committee of the United States Senate. "There is a clear, present and ever-increasing danger," he told the senators, "to the entire population of our country from exposure to the entire non-ionizing portion of the electromagnetic spectrum. The dangers cannot be overstated..." Zaret told the committee about patients who not only had cataracts caused by exposure to microwaves, but also malignant tumors, cardiovascular disease, hormonal imbalance, arthritis and mental illness, as well as neurological problems in children born to them. These patients ranged from military personnel exposed to radar to housewives exposed to their microwave ovens.

"The microwave oven leakage standard set by the Bureau of Radiological Health," he told the committee, "is approximately 1 billion times higher than the total entire microwave

spectrum given off by the Sun. It is appalling for these ovens to be permitted to leak at all, let alone for the oven advertisements to encourage our children to have fun learning to cook with them!" The microwave oven leakage standard, today in 2021, is the same as it was in 1973: 5 milliwatts per square centimeter at a distance of 5 centimeters. And the microwave exposure levels to the brain from every cell phone in use today are higher than that.

The Navy, at that time, was exposing soldiers to low-level microwave radiation in research being conducted in Pensacola, Florida. Echoing Frey, Zaret said these experiments were unethical. "I don't believe it is possible," he told the Senate committee, "to get informed, untainted consent from any young adult who agrees to be exposed to irradiation where you are not sure of what the end result is going to be... Also, that any children that he has at some future time may suffer from this irradiation." He reemphasized the ethical problems with this research: "I think if it

was explained fully to them and they still volunteered, for this project, one would question their mental capacity right off the start."

Scientists experimenting on birds were just as alarmed by their results, and issued warnings about the environmental effects of the radiation our society was unleashing on the world that were just as dire as the warnings delivered to Congress by Milton Zaret, and the warnings delivered to the Navy by Allan Frey.

In the late 1960s and continuing through the 1970s, John Tanner and his colleagues at Canada's National Research Council exposed chickens, pigeons and seagulls to microwave radiation, and found frightening effects at every level of exposure. Chickens exposed to between 0.19 and 360 microwatts per square centimeter for nine months developed tumors of the central nervous system, and avian leukosis – also a type of

tumor – of ovaries, intestines and other organs which in some birds reached “massive proportions,” on “a scale never seen before by veterinarians experienced with avian diseases.” Mortality was high in the irradiated birds. All the exposed birds, at every power level, had deteriorated plumage, with feathers lost, broken or with twisted and brittle shafts.

In other experiments, in which these researchers irradiated birds at higher power, the birds collapsed in pain within seconds. This occurred not only when the whole bird was irradiated but also when only its tail feathers were irradiated and the rest of the bird was carefully shielded. In further experiments, they proved that bird feathers make fine receiving aerials for microwaves, and speculated that migratory birds may use their feathers to obtain directional information. These scientists warned that increasing levels of ambient microwaves would cause wild birds distress and might interfere with their navigation.

Maria Sadchikova, working in Moscow; Václav Bartoniček and Eliska Klimková- Deutshová, working in Czechoslovakia; and Valentina Nikitina, who examined officers of the Russian Navy, found, as early as 1960, that the majority of people exposed to microwave radiation on the job – even people who had ceased such employment five to ten years previously – had elevated blood sugar or had sugar in their urine.

Animal experiments showed that the radiation directly interferes with metabolism, and that it does so rapidly. In 1962, V.A. Syngayevskaya, in Leningrad, exposed rabbits to low level radio waves and found that the animals' blood sugar rose by one- third in less than an hour. In 1982, Vasily Belokrinitiski, in Kiev, reported that the amount of sugar in the urine was in direct proportion to the dose of radiation and

the number of times the animal was exposed. Mikhail Navakitikian and Lyudmila Tomashevskaya reported in 1994 that

insulin levels decreased by 15 percent in rats exposed for just half an hour, and by 50 percent in rats exposed for twelve hours, to pulsed radiation at a power level of 100 microwatts per square centimeter. This level is comparable to the radiation a person receives today sitting directly in front of a wireless computer, and considerably less than what a person's brain receives from a cell phone.

These were just a few of the thousands of studies that were being performed all over the world that found profound effects of microwave radiation on every human organ, and on the functioning and reproduction of every plant and animal. Lieutenant Zory Glaser, commissioned by the U.S. Navy in 1971 to catalogue the world's literature on the health effects of microwave and radio-frequency radiation, collected 5,083 studies, textbooks and conference proceedings by 1981. He managed to find about half of the literature existing at that time. So about 10,000 studies had proven microwave and RF radiation to be dangerous to all life, already before 1981.

### **Cooking Your DNA and Roasting Your Nerves**

In the early 1980s Mays Swicord, working at the National Center for Devices and Radiological Health at the Food and Drug Administration, decided to test his conjecture that DNA resonantly absorbs microwave radiation, and that even a very low level of radiation, although producing no measurable heat in the human body as a whole, may nevertheless heat your DNA. He exposed a solution containing a small amount of DNA to microwave radiation, and found that the DNA itself was absorbing 400 times as much radiation as the solution that it was in, and that different lengths of DNA strands resonantly absorb different frequencies of microwave radiation. So even though the overall temperature of your cells may not be raised to any detectable degree by the radiation, the DNA inside your cells may be heated tremendously. Swicord's later research confirmed that this damages DNA, causing both single- and double-strand DNA breakage.

Professor Charles Polk of the University of Rhode Island reported essentially the same thing at the twenty-second annual meeting of the Bioelectromagnetics Society in June 2000 in Munich, Germany. Direct measurements had recently shown that DNA is much more electrically conductive than anyone had suspected: it has a conductivity of at least  $10^5$  siemens per meter, which is about 1/10 as conductive as mercury! A cell phone held to your head may irradiate your brain at a specific absorption rate (SAR) of about 1 watt per kilogram, which produces little overall heating. Polk calculated, however, that this level of radiation would raise the temperature in the interior of your DNA by 60 degrees Celsius per second! He said that the tissues cannot dissipate heat that rapidly, and that such heating would rupture the bonds between complementary strands of DNA, and would explain the DNA breakage reported in various studies.

And in 2006, Markus Antonietti, at Germany's Max Planck Institute, wondered whether a similar type of resonant absorption occurs in the synapses of our nerves. Cell phones are designed so the radiation they emit will not heat your brain more than one degree Celsius. But what happens in the tiny environment of a synapse, where electrically charged ions are involved in transmitting nerve impulses from one neuron to another? Antonietti and his colleagues simulated the conditions in nerve synapses with tiny fat droplets in salt water and exposed the emulsions to microwave radiation at frequencies between 10 MHz and 4 GHz. The resonant absorption frequencies, as expected, depended on the size of the droplets and other properties of the solution. But it was the size of the absorption peaks that shocked Antonietti.

"And now comes the tragedy," said Antonietti. "Exactly where we are closest to the conditions in the brain, we see the strongest heating. There is a hundred times as much energy absorbed as previously thought. This is a horror."

## **Efforts by the EPA to Protect Americans**

Faced with a barrage of alarming scientific results, the U.S. Environmental Protection Agency (EPA) established its own microwave radiation research laboratory which operated from 1971 until 1985 with up to 30 full-time staff exposing dogs, monkeys, rats and other animals to microwaves. The EPA was so disturbed by the results of its experiments that it proposed, already in 1978, to develop guidelines for human exposure to microwave radiation for adoption and enforcement by other federal agencies whose activities were contributing to a rapidly thickening fog of electromagnetic pollution throughout our nation. But there was pushback by those agencies.

The Food and Drug Administration did not want the proposed exposure limits to apply to microwave ovens or computer screens. The Federal Aviation Administration did not want to have to protect the public from air traffic control and weather radars. The Department of Defense did not want the limits to apply to military radars. The CIA, NASA, Department of Energy, Coast Guard, and Voice of America did not want to have to limit public exposure to their own sources of radiation.

Finally, in June 1995, with the telecommunications industry planning to put microwave radiation devices into the hands and next to the brains of every man, woman and child, and to erect millions of cell towers and antennas in cities, towns, villages, forests, wildlife preserves and national parks throughout the country in order to make those devices work, the EPA announced that it was going to issue Phase I of its exposure guidelines in early 1996. The Federal Communications Commission would have been required to enforce those guidelines, cell phones and cell towers would have been illegal, and even if they were not illegal, telecommunications companies would have been exposed to unlimited liability for all the suffering, disease and mortality they were about to cause.

But it was not to be. The Electromagnetic Energy Association, an industry lobbying group, succeeded in preventing the EPA's exposure guidelines from being published. On September 13, 1995, the Senate Committee on Appropriations stripped the \$350,000 that had been budgeted for EPA's work on its exposure guidelines and wrote in its report, "The Committee believes EPA should not engage in EMF activities."

The Personal Communications Industry Association (CTIA), another industry group, also lobbied Congress, which was drafting a bill called the Telecommunications Act, and a provision was added to the Act prohibiting states and local governments from regulating "personal wireless service facilities" on the basis of their "environmental effects." That provision shielded the telecommunications industry from any and all liability for injury from both cell towers and cell phones and permitted that industry to sell the most dangerous technology ever invented to the American public. People were no longer allowed to tell their elected officials about their injuries at public hearings. Scientists were no longer allowed to testify in court about the dangers of this technology. Every means for the public to find out that wireless technology was killing them was suddenly prohibited.

The telecommunications industry has done such a good job selling this technology that today the average American household contains 25 different devices that emit microwave radiation and the average American spends five hours per day on their cell phone, has it in their pocket next to their body the rest of the day, and sleeps with it all night in or next to their bed. Today almost every man, woman and child holds a microwave radiation device in their hand or against their brain or body all day every day, completely unaware of what they are doing to themselves, their family, their pets, their friends, their neighbors, the birds in their yard, their ecosystem, and their planet. Those who are even aware there is a problem at all view only the towers as a threat, but their



phone as a friend.

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