

# Reproduced Government Study Shows Cellphones Linked to Tumors

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✓ Fact Checked

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## STORY AT-A-GLANCE

- › In 2011, the International Agency for Research on Cancer (IARC) classified cellphones as a “possible human carcinogen.” In light of three new studies, IARC is urged to upgrade it to “probable” carcinogen
- › In February, the findings of two National Toxicology Program (NTP) animal studies were published. Male rats exposed to cellphone radiation were more likely to develop heart tumors than unexposed rats. DNA damage and damage to heart tissue was also observed
- › In March the Ramazzini Institute published a lifetime exposure study showing a clear link between cellphone radiation and Schwann cell tumors – the same kind of tumors found by NTP
- › Ramazzini’s study found RF radiation increased both brain and heart tumors in exposed rats. This, despite using power levels that were up to 1,000 times lower than those used in the NTP studies
- › The proposed transition to 5G will dramatically increase radiation exposure as it will require the installation of small antennas every 250 feet or so to ensure connectivity

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In 2011 the International Agency for Research on Cancer (IARC) classified cellphones as a Group 2B “possible carcinogen,”<sup>1</sup> and the evidence supporting the theory that

electromagnetic field (EMF) radiation from cellphones can trigger abnormal cell growth and cancer<sup>2,3</sup> just keeps growing and getting stronger.

In February, the findings of two government-funded animal studies<sup>4</sup> were published. Curiously enough, the published interpretation of this \$25 million research (conducted by the National Toxicology Program [NTP], an interagency research program currently under the auspices of the National Institute of Environmental Health Sciences) significantly downplays the actual findings of the studies.

## **Cellphone Radiation Linked to Brain and Heart Tumors**

The NTP research includes two studies: one on mice and one on rats. Male rats were more likely to develop heart tumors, while female rats and newborns exposed to high levels of radiation during pregnancy and lactation were more likely to have low body weight. DNA damage and damage to heart tissue were also observed in both male and female rats, but not mice. Other types of tumors did occur in both types of animals, though, including brain, prostate, liver and pancreatic tumors.

According to the researchers, if these results can be confirmed, then cellphone radiation may indeed be a "weak" carcinogen. As you'll see below, that confirmation was delivered last month, in the form of published research by the Ramazzini Institute.

The animals in the NTP studies were exposed to cellphone radiation for nine hours a day for two years (basically the full life span of a rat). As noted by The New York Times,<sup>5</sup> the heart tumors (malignant schwannomas) found in male rats are "similar to acoustic neuromas, a benign tumor in people involving the nerve that connects the ear to the brain, which some studies have linked to cellphone use."

The scientists also expressed surprise at the finding of DNA damage, as the conventional belief is that non-ionizing radiofrequency radiation cannot harm DNA. "We don't feel like we understand enough about the results to be able to place a huge degree of confidence in the findings," John Bucher, Ph.D.,<sup>6</sup> senior scientist at the NTP told

reporters. Such statements fly in the face of warnings issued by NTP researchers two years ago.

## **NTP Whitewashed Its Conclusions**

Partial results from these studies were initially released in 2016 because they were deemed too serious to hold back. After all, the health of hundreds of millions of Americans, let alone billions of users worldwide, is at stake. At the time, Christopher Portier, Ph.D., retired head of the NTP who was involved in the launch of the study, insisted the findings showed clear causation. "I would call it a causative study, absolutely," he told *Scientific American*.<sup>7</sup> "They controlled everything in the study."

David McCormick, Ph.D., director of the Illinois Institute of Technology Research Institute where the study was conducted, was equally clear, telling reporters,<sup>8</sup> "What we are saying here is that based on the animal studies, there is a possible risk cellphone RF [radio frequency] is potentially carcinogenic in humans. These are uncommon lesions in rodents, so it is our conclusion that they are exposure related."

As noted by *Microwave News*,<sup>9</sup> while some of the pathology data was updated since the initial release in 2016, the changes are minor. The interpretation, however, changed dramatically. Now, even though the findings are identical, the NTP insists it's "not a high-risk situation" and that the risk to human health is negligible.

*Microwave News* lists a number of possible political reasons for the sudden turnaround, including new NTP leadership, the current White House administration's disdain for science that threatens big business and the overarching power of the major telecommunications players of today: Apple, Google and Microsoft. There's no doubt there are incredible amounts of money at stake.

## **Ramazzini Institute Duplicates NTP Findings**

Whatever the reason, it's quite clear the NTP is now downplaying findings that a mere two years ago were considered of significant importance for public health. The

whitewash was made even more obvious with the March 7 online publication of a lifetime exposure study<sup>10</sup> by the highly respected Ramazzini Institute in Italy, which like the NTP shows a clear link between cellphone radiation and Schwann cell tumors (schwannomas).<sup>11,12,13</sup>

But, contrary to the NTP, Ramazzini researchers are now urging the IARC to re-evaluate its carcinogenicity classification for cellphones. According to Fiorella Belpoggi, director of research at the Ramazzini Institute and the study's lead author, RF radiation from cellphones should probably be classified as a "probable" human carcinogen rather than a "possible" carcinogen. In an interview with Microwave News, Belpoggi said:<sup>14</sup>

*"The [Ramazzini Institute] findings on far field exposure to RFR [radio frequency radiation] are consistent with and reinforce the results of the NTP study on near field exposure, as both reported an increase in the incidence of tumors of the brain and heart in RFR-exposed Sprague-Dawley rats ...*

*The two laboratories worked independently at many thousands of kilometers' distance, using the same strain of rats, and found the same results. It cannot be by chance.*

*Both findings are also consistent with the epidemiological evidence, where an increased incidence of tumors of the same cells (Schwann cells) of the acoustic nerve had been associated with the use of mobile phones.*

*We and NTP have evidenced the hazard of RFR exposure, as regards the risk we have to consider that about seven billion of people are exposed on the planet, and even if the risk is to be considered low, due to the large number of exposed individuals, we could expect thousands of people affected by serious diseases like cancer of the peripheral nerves and brain."*

Indeed, a recent analysis<sup>15,16</sup> reveals the incidence of glioblastoma multiforme, the deadliest type of brain tumor, more than doubled in the U.K. between 1995 and 2015. According to the authors, the dramatic increase is likely due to "widespread environmental or lifestyle factors," which would include cellphone usage.

Véronique Terrasse, spokesperson for the IARC, has stated the organization will look into it once the NTP has delivered its final report,<sup>17</sup> which may take several months.

## **NTP and Ramazzini Show Effects Are Reproducible**

The NTP-funded studies found rats exposed to RF radiation began developing glial cell hyperplasias – indicative of precancerous lesions – around week 58; heart schwannomas were detected around week 70. Ramazzini's study confirms and reinforces these results, showing RF radiation increased both brain and heart tumors in exposed rats. This, despite the fact that Ramazzini used much lower power levels.

While NTP used RF levels comparable to what's emitted by 2G and 3G cellphones (near-field exposure), Ramazzini simulated exposure to cellphone towers (far-field exposure). In all, the Ramazzini Institute exposed 2,448 rats to 1.8 GHz GSM radiation at electric field strengths of 5, 25 and 50 volts per meter<sup>18</sup> for 19 hours a day, starting at birth until the rats died either from age or illness.

To facilitate comparison, the researchers converted their measurements to watts per kilogram of body weight (W/kg), which is what the NTP used. Overall, the radiation dose administered in the Ramazzini study was up to 1,000 times lower than the NTP's – yet the results were strikingly similar. As in the NTP studies, exposed male rats developed statistically higher rates of heart schwannomas than unexposed rats.

They also found some evidence, although weaker, that RF exposure increased rates of glial tumors in the brains of female rats. As noted by Ronald Melnick, Ph.D., a former senior NIH toxicologist who led the design of the NTP study and current senior science adviser to the Environmental Health Trust:<sup>19</sup>

*"All of the exposures used in the Ramazzini study were below the U.S. FCC limits... In other words, a person can legally be exposed to this level of radiation. Yet cancers occurred in these animals at these legally permitted levels. The Ramazzini findings are consistent with the NTP study demonstrating*

*these effects are a reproducible finding. Governments need to strengthen regulations to protect the public from these harmful non-thermal exposures."*

The NTP's conclusion that there's no cause for concern is also challenged by an independent review panel, which concluded its review of the two NTP studies March 28. According to this panel of experts, there's "clear evidence" linking RF radiation with heart schwannomas and "some evidence" linking it to brain gliomas. It remains to be seen whether the NTP will accept or reject the panel's conclusions in its final report.

## **Why Evidence of Rodent Schwannomas Could Spell Trouble**

As explained by Louis Slesin, Ph.D., editor and publisher of Microwave News, the increased incidence of schwannomas in rodents exposed to RF is no mere coincidence, and is of great concern for public health:<sup>20</sup>

*"Schwann cells play a key role in the functioning of the peripheral nervous system. They make the myelin sheath, which insulates nerve fibers and helps speed the conduction of electrical impulses. There are Schwann cells just about everywhere there are peripheral nerve fibers. They are present in most organs of the body – whether mice, rats or humans. Schwann cell tumors are called schwannomas.*

*The NTP found schwannomas in many other organs, in addition to the heart, of rats chronically exposed to cellphone radiation. These included a variety of glands (pituitary, salivary and thymus), the trigeminal nerve and the eye ... The NTP also saw schwannomas in the uterus, ovary and vagina of female rats.*

*The brain has no Schwann cells – the brain is part of the central nervous system. There, glial cells play a similar function. In fact, Schwann cells are a type of glial cell ...*

*Tumors of the glial cells are called gliomas. The NTP also saw an increase in glioma among the male rats exposed to GSM and CDMA radiation. Higher rates of glioma have been reported in a number of epidemiological studies of*

*cellphone users. The other tumor linked to cellphone radiation in human studies is acoustic neuroma, a tumor of the auditory nerve ... formally called a vestibular schwannoma.*

*While schwannomas and gliomas are commonly noncancerous tumors, they can develop into malignant schwannomas or glioblastomas ... The implication is that instead of searching for consistency in RF's ability to cause cancer in specific organs, the emphasis should now be on specific cell types – beginning with Schwann cells in the periphery and glial cells in the brain."*

## **Mitochondrial Damage Is an Even More Pressing Concern**

I believe it would be a serious mistake to consider cellphones safe simply because we're not seeing a dramatic uptick in brain (and/or heart) tumors. Remember, cellphone radiation has already been acknowledged to be a carcinogen, and most all carcinogens, like cigarette smoking, take decades to increase cancer risk. Cellphones are indeed the cigarettes of the 21st century and we won't see the epidemic of cancer for another decade or two.

The NTP's research also reveal DNA and cellular damage. The researchers claim there's no explanation for this, but that's far from true. A number of scientists and EMF specialists have presented evidence for a number of different mechanisms of harm. Among them:

- **Allan Frey**, Office of Naval Research,<sup>21</sup> showed cellphone radiation weakens cell membranes and your blood-brain barrier. Some of his experiments demonstrated that dye injected into animals was able to penetrate into the brain when exposed to pulsed digital signals from microwaves.

Today, these findings are particularly notable since cellphones are held close to the brain. The take-home message is that radiation from your cellphone weakens your blood-brain barrier, allowing toxins in your blood to enter your brain, and into the cells of your entire body.

- **Martin Pall**, Ph.D., has published research<sup>22,23,24,25</sup> showing that low-frequency microwave radiation activates voltage-gated calcium channels (VGCCs)<sup>26</sup> — channels in the outer membrane of your cells. Once activated, the VGCCs open up, allowing an abnormal influx of calcium ions into the cell, which activates nitric oxide (NO).

NO is the only molecule in your body produced at high enough concentrations to outcompete other molecules for superoxide and is a precursor for peroxynitrite.<sup>27</sup>

These potent oxidant stressors are thought to be a root cause for many of today's chronic diseases.<sup>28</sup> Peroxynitrites modify tyrosine molecules in proteins to create a new substance, nitrotyrosine and nitration of structural protein.<sup>29</sup> Changes from nitration are visible in human biopsy of atherosclerosis, myocardial ischemia, inflammatory bowel disease, amyotrophic lateral sclerosis and septic lung disease.<sup>30</sup>

Significant oxidative stress from peroxynitrites may also result in single-strand breaks of DNA.<sup>31</sup> This pathway of oxidative destruction — triggered by low-frequency radiation emitted from mobile devices — may partially explain the unprecedented growth rate of chronic disease since 1990,<sup>32</sup> and is a far greater concern than brain tumors.

According to Pall's theory, the physical locations where VGCCs are the densest are indicative of the diseases you might expect from chronic excessive exposure to EMFs. As it turns out, the highest density of VGCCs are found in your nervous system, the pacemaker in your heart and in male testes. As a result, EMFs are likely to contribute to neurological and neuropsychiatric problems, heart and reproductive problems.

- **Paul Héroux**, Ph.D., professor of toxicology and health effects of electromagnetism at the faculty of medicine at McGill University in Montreal, stresses the impact EMFs have on the water in your body. The mechanism of action he proposes involves the enzyme ATP synthase, which passes currents of protons through a water channel.



ATP synthase basically generates energy in the form ATP from ADP, using this flow of protons. Magnetic fields can change the transparency of the water channel to protons, thereby reducing the current. As a result, you get less ATP, which can have system wide consequences, from promoting chronic disease and infertility to lowering intelligence.

## **Will Findings Affect 5G Rollout?**

We're now facing the rollout of high-speed wireless 5G technology across the U.S. How might the NTP and Ramazzini findings affect this transition? According to Melnick,<sup>33</sup> "It should most likely lead to a reduction in exposure limits." He also hopes the findings will compel public officials and telecommunications companies to not promote the use of 5G devices for children.

In a recent investigative report for The Nation, Mark Hertsgaard and Mark Dowie reveals "the disinformation campaign – and massive radiation increase – behind the 5G rollout."<sup>34</sup>

The evidence for harm goes back more than two decades. By early 1999, findings from more than 50 studies were already raising "'serious questions' about cellphone safety." This evidence was shared in a closed-door meeting of CTIA's board of directors, which is the trade association for the wireless industry.

Epidemiologist George Carlo, hired by CTIA in 1993 to defuse concerns about cellphone radiation, was unable to give the industry the clear evidence of safety it desired. Instead he found the converse. Among this evidence was findings of "correlation between brain tumors occurring on the right side of the head and the use of the phone on the right side of the head."

Research also suggested that cellphone radiation was capable of causing "functional genetic damage." Carlo urged the telecom industry to "do the right thing: Give consumers 'the information they need to make an informed judgment about how much of this unknown risk they wish to assume,' especially since some in the industry had

'repeatedly and falsely claimed that wireless phones are safe for all consumers including children.'"

## **Safety Has Taken a Backseat to Profit**

The reason nothing ever came of Carlos' investigation is because the CTIA refused to accept the findings and publicly discredited him for doing the work he'd been paid to do in the first place. In 1999, wireless technologies were nowhere near as ubiquitous as they are today. Now, the stakes are higher than ever, and there can be little doubt that profit is still weighing heavier than science.

*"This Nation investigation reveals that the wireless industry not only made the same moral choices that the tobacco and fossil-fuel industries did; it also borrowed from the same public-relations playbook those industries pioneered.*

*The playbook's key insight is that an industry doesn't have to win the scientific argument about safety; it only has to keep the argument going. That amounts to a win for the industry, because the apparent lack of certainty helps to reassure customers, even as it fends off government regulations and lawsuits that might pinch profits," Hertzgaard and Dowie write.<sup>35</sup>*

*"Funding friendly research has perhaps been the most important component of this strategy, because it conveys the impression that the scientific community truly is divided ...*

*The wireless industry has obstructed a full and fair understanding of the current science, aided by government agencies that have prioritized commercial interests over human health and news organizations that have failed to inform the public about what the scientific community really thinks."*

## **5G Will Dramatically Increase Radiation Exposure**

The transition to 5G will dramatically increase RF-EMF radiation exposure as it will require the installation of small antennas every 250 feet or so to ensure connectivity. Some estimates suggest millions of new antenna sites will have to be erected in the U.S. alone.

In September last year, more than 180 doctors and scientists from 35 countries signed a petition<sup>36</sup> to enact a moratorium on the rollout of 5G due to potential health risks, noting that "RF-EMF has been proven to be harmful for humans and the environment." The petition also points out that:

*"5G technology is effective only over short distance. It is poorly transmitted through solid material. Many new antennas will be required and full-scale implementation will result in antennas in every 10 to 12 houses in urban areas, thus massively increasing mandatory exposure ...*

*More than 230 scientists from 41 countries have expressed their 'serious concerns' regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices already before the additional 5G roll-out ...*

*Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plants and animals."*

## **Protect Yourself From Excessive EMF**

There's no doubt in my mind that RF-EMF exposure is a significant health hazard that needs to be addressed if you're concerned about your health, and the roll-out of 5G would certainly make remedial action all the more difficult. Late last year, California governor Jerry Brown vetoed a bill to establish statewide standards for 5G networks.<sup>37</sup>

Senate Bill 649 sought to restrict the ability of local government to block antenna placement, which led to opposition from local officials across the state. Brown decided to let local leaders have control over 5G infrastructure. In time, we'll likely see similar legislation in other states, so keep your eyes and ears open, and be sure to get involved whenever an opportunity presents itself. In the meantime, here are several suggestions that will help **reduce your RF-EMF exposure**:

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Connect your desktop computer to the internet via a wired Ethernet connection and be sure to put your desktop in airplane mode. Also avoid wireless keyboards, trackballs, mice, game systems, printers and portable house phones. Opt for the wired versions.

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If you must use Wi-Fi, shut it off when not in use, especially at night when you are sleeping. Ideally, work toward hardwiring your house so you can eliminate Wi-Fi altogether. If you have a notebook without any Ethernet ports, a USB Ethernet adapter will allow you to connect to the internet with a wired connection.

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Shut off the electricity to your bedroom at night. This typically works to reduce electrical fields from the wires in your wall unless there is an adjoining room next to your bedroom. If that is the case you will need to use a meter to determine if you also need to turn off power in the adjacent room.

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Use a battery-powered alarm clock, ideally one without any light. I use a talking clock for the visually impaired.<sup>38</sup>

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If you still use a microwave oven, consider replacing it with a steam convection oven, which will heat your food as quickly and far more safely.

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Avoid using "smart" appliances and thermostats that depend on wireless signaling. This would include all new "smart" TVs. They are called smart because they emit a Wi-Fi signal and, unlike your computer, you cannot shut the Wi-Fi signal off. Consider using a large computer monitor as your TV instead, as they don't emit Wi-Fi.

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Refuse smart meters as long as you can, or add a shield to an existing smart meter, some of which have been shown to reduce radiation by 98 to 99%.<sup>39</sup>

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Consider moving your baby's bed into your room instead of using a wireless baby monitor. Alternatively, use a hard-wired monitor.

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Replace CFL bulbs with incandescent bulbs. Ideally remove all fluorescent lights from your house. Not only do they emit unhealthy light, but more importantly, they will actually transfer current to your body just being close to the bulbs.

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Avoid carrying your cellphone on your body unless in airplane mode and never sleep with it in your bedroom unless it is in airplane mode. Even in airplane mode it can emit signals, which is why I put my phone in a Faraday bag.<sup>40</sup>

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When using your cellphone, use the speaker phone and hold the phone at least 3 feet away from you. Seek to radically decrease your time on the cellphone. I typically use my cellphone less than 30 minutes a month, and mostly when traveling. Instead, use VoIP software phones that you can use while connected to the internet via a wired connection.

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## Sources and References

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- <sup>1</sup> World Health Organization, Fact Sheet #193, October 2014
- <sup>2</sup> NCI. Cell Phones and Cancer Risk
- <sup>3</sup> International Agency for Research on Cancer May 31, 2011

- <sup>4</sup> National Toxicology Program. Cell Phone Radio Frequency Radiation
- <sup>5, 6</sup> New York Times February 2, 2018
- <sup>7</sup> Scientific American May 27, 2016
- <sup>8</sup> WTHR 13 News November 14, 2016
- <sup>9</sup> Microwave News February 7, 2018
- <sup>10</sup> Environmental Research March 7, 2018
- <sup>11</sup> RF Safe, Press Conference on Ramazzini Study Showing Cancer Cell Phone Radiation Link
- <sup>12, 17</sup> Scientific American March 29, 2018
- <sup>13, 19</sup> EHTrust.org March 22, 2018
- <sup>14</sup> Microwave News March 22, 2018
- <sup>15</sup> Journal of Environmental and Public Health March 21, 2018
- <sup>16</sup> Microwave News March 25, 2018
- <sup>18</sup> Tech Target, Volt Per Meter
- <sup>20</sup> Microwave News February 20, 2018
- <sup>21</sup> Disconnect, by Dr. Devra Davis
- <sup>22</sup> Rev Environ Health. 2015;30(2):99-116
- <sup>23</sup> International Journal of Innovative Research in Engineering and Management, September 2015; 2(5)
- <sup>24</sup> J Cell Mol Med. 2013 Aug;17(8):958-65
- <sup>25</sup> Current Chemical Biology 2016; 10(1): 74-82
- <sup>26, 31</sup> Journal of Cellular and Molecular Medicine 2013; 17(8):958
- <sup>27, 29, 30</sup> American Journal of Physiology 1996; 1(5): 1494
- <sup>28, 32</sup> The Root Cause in the Dramatic Rise of Chronic Disease, May 2016
- <sup>33</sup> News Observer March 28, 2018
- <sup>34, 35</sup> The Nation March 29, 2018
- <sup>36</sup> Scientists Warn of Potential Serious Health Effects of 5G, September 13, 2017
- <sup>37</sup> Wireless Week October 16, 2017
- <sup>38</sup> Amazon.com Talking Clock
- <sup>39</sup> The Global Healing Center November 13, 2014
- <sup>40</sup> Amazon.com Mission Darkness Faraday Bag for Phones