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**EMF Science**  
*Patient Handout*

Our exposure to electromagnetic fields – also called “EMFs” or “Electrosmog” – has increased tremendously in the last few decades.

And while scientists used to think this type of low-level radiation emitted by cell phones, tablets, Bluetooth devices, wifi routers, cell phone towers and utility “smart” meters was perfectly safe... there is growing evidence that the opposite is unfortunately true.

At this point, it’s pretty clear that all of us should take precaution and reduce our exposure to these EMFs as much as we can, today.

Enjoy the read,

- Nick “The EMF Guy” Pineault

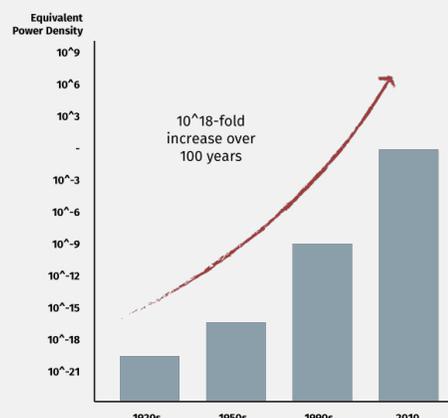
## 5 Reasons Our Exposure to Electrosmog Isn’t “Safe”

1. Microwave radiation emitted from cell phones, Bluetooth, wifi and cell towers was declared a Class 2B “possible” carcinogen in 2011 – but several researchers think it should be re-classified as a Class 2A “probable” or Class 1 “definite” carcinogen.<sup>1</sup>
2. Many countries like the US and Canada set standards based on the false assumption that there are no adverse health effects of EMFs other than those that are caused by tissue heating, even though more than 20,000 peer-reviewed papers show biological effects that have nothing to do with heat.<sup>2</sup>
3. Growing children’s brains are especially at risk, and their head absorbs twice the radiation compared to adults.<sup>3</sup> Regardless of that fact, a 2015 survey showed that 75% of 4-year old children own their own cell phone.<sup>4</sup>

### Did You Know?

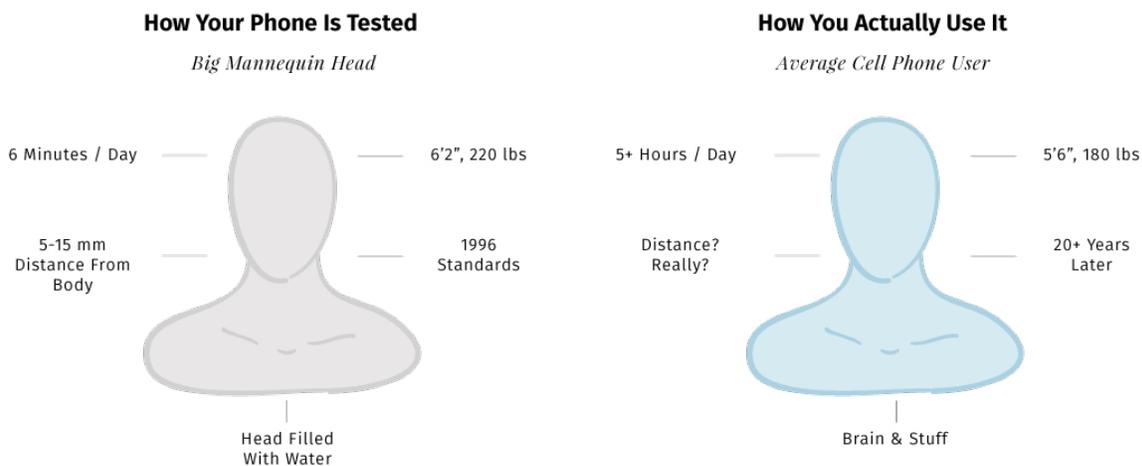
The average levels of “ambient electrosmog” in the microwave radiation range (cell phones, wifi, Bluetooth) has increased by 1,000,000,000,000,000,000-fold (a quintillion) in the last 100 years.<sup>5</sup>

Typical Daily Human EMF Exposures Over Time



4. According to the most conservative estimates of independent EMF researchers, at least 35% of the population suffers from “mild to moderate” symptoms of electro sensitivity, including fatigue, sleep disturbance, headaches, difficulty concentrating, depression, memory loss, hearing disruptions, skin problems and cardiovascular issues.<sup>6</sup>

The new generation 5G (5th generation) wireless networks will require adding millions of antennas in the US alone, and are being rolled out without a single biological study demonstrating their safety.



### 5 Reasons Children Are More At Risk

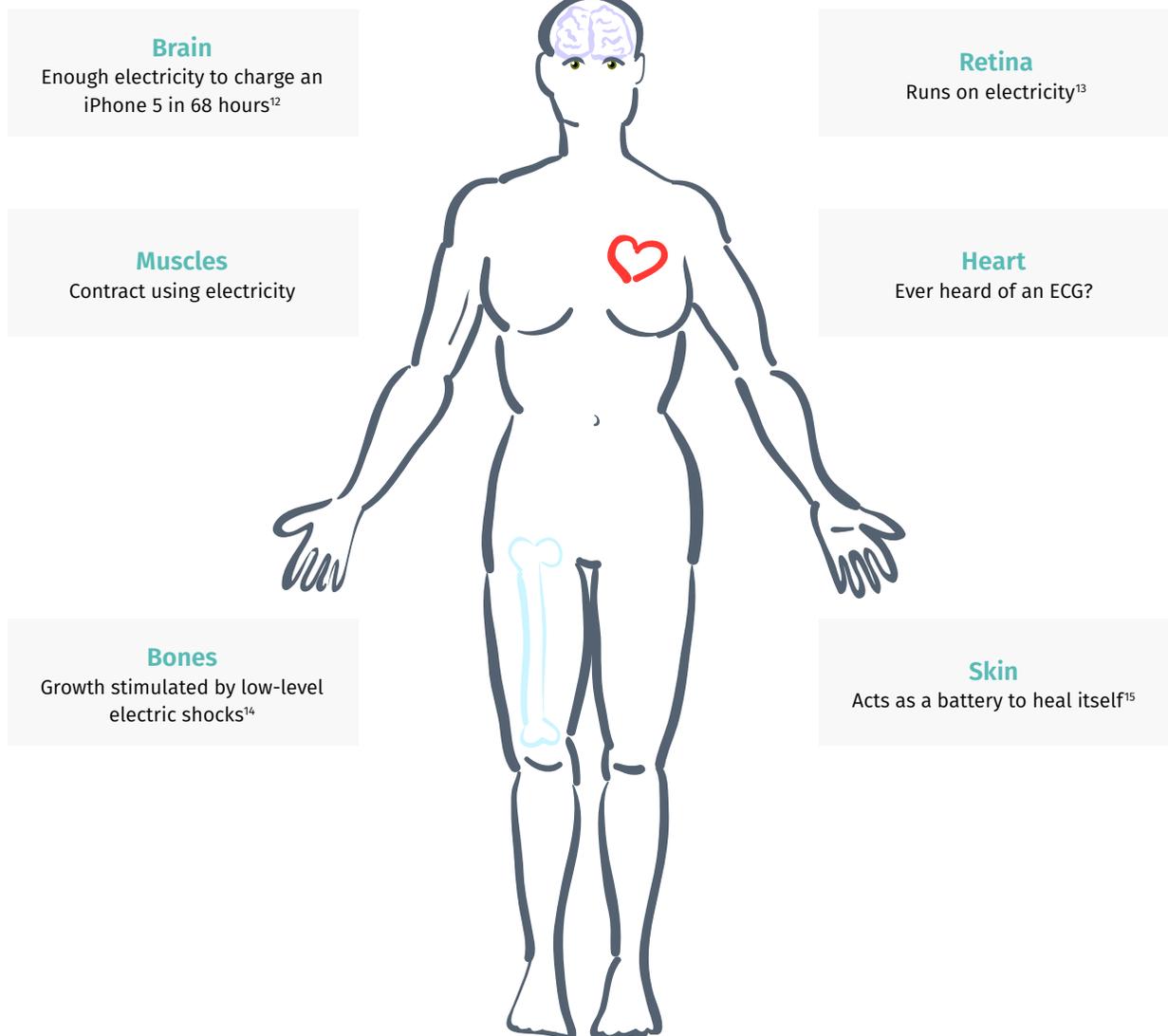
- 1) Exposing your unborn fetus to cell phone EMFs might increase the risk of behavioral problems in your future child<sup>7</sup>
- 2) EMFs affect 4 aspects of children’s brain development<sup>8</sup>
- 3) Children’s heads will absorb up to 2X the radiation compared to adults. Their bone marrow can absorb up to 10X more,
- 4) Teens who use a cell phone before 20 years old see their risks of brain cancer rise 500%<sup>10</sup>
- 5) EMFs are linked with depression, anxiety and many mental health problems that have reached epidemic levels in teenagers<sup>11</sup>

## How Is It Possible That Non-Ionizing Radiation Causes Harm?

The type of radiation emitted from cell phones, wifi and Bluetooth is called “non-ionizing”, because contrary to x-rays, gamma rays and nuclear radiation, it is not powerful enough to cause direct DNA damage.

Unfortunately, emerging science now shows that all of this “non-ionizing” radiation can harm your body in other ways — mainly by disrupting its innate electrical systems.

### EMFs Affect Your Electric Body



## EMFs Affect Your Electric Cells

Each one of the trillions of cells in your body has microscopic channels in its membrane which allow calcium and other minerals to flow in and out of the cell. They are called “VGCCs”, short for “Voltage-Gated Calcium Channels”.

When a foreign EMF signal (such as a cell phone signal) hits the cell, it literally causes the doors of these calcium channels to stay stuck open — allowing excessive calcium to flow into the cell starting a few second after exposure.<sup>16</sup>

### EMF Activation of VGCCs Increases Free Radical Production

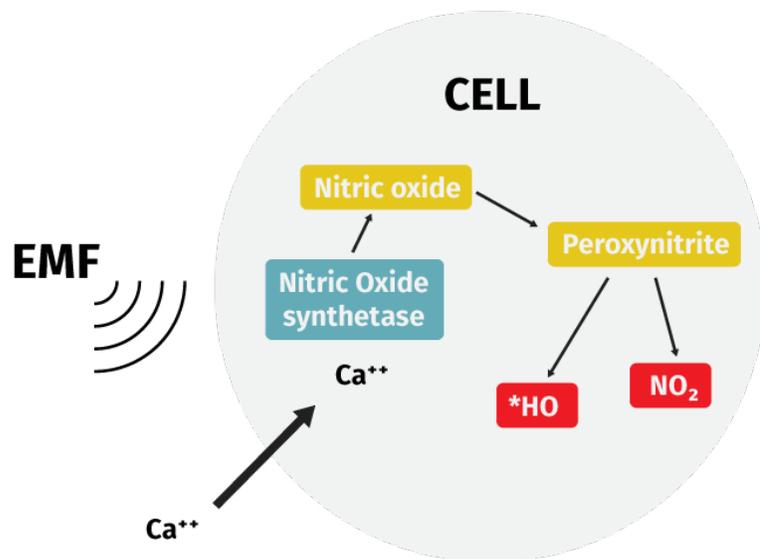


Image credit: Dr. Paul Dart and Dr. Martin Pall

Calcium is usually a healthy mineral for the human body. But in this particular situation, the cell receives an “overdose” of calcium — leading to a laundry list of consequences.

### Excessive Calcium In Your Cells Leads To:

- Single strand breaks in cellular DNA
- Double strand breaks in cellular DNA
- Cancer
- Breakdown of blood-brain barrier
- Male and female infertility
- Depression and diverse neuropsychiatric symptoms
- Oxidative stress
- Melatonin depletion and sleep disruption
- Cataract formation
- Tachycardia, arrhythmia, sometimes leading to sudden cardiac death
- Hormonal disruption

## Take Action

1. Share this fact sheet with your friends and family who might not be aware of the dangers associated with EMFs
2. Ask your health practitioner how you can reduce your EMF exposure and minimize the risks associated with wireless technologies
3. To learn more about EMFs, consider reading “**The Non-Tinfoil Guide to EMFs**”, authored by Investigative Health Journalist, Nick Pineault

### About The Author

Nick “The EMF Guy” Pineault is an investigative health journalist and author of the bestselling book “The Non-Tinfoil Guide to EMFs”. His work has been endorsed by Dr. Joseph Mercola, Ben Greenfield, Paul Chek and many more of the world’s leading health authorities.

His mission is to educate practitioners and the public alike on the possible dangers of electro pollution, and spark innovation towards the creation of safer technologies.



## Sources:

1. <http://www.degruyter.com/view/j/reveh.2013.28.issue-2-3/reveh-2013-0006/reveh-2013-0006.xml>
2. <https://www.ncbi.nlm.nih.gov/pubmed/30025338>
3. <https://www.ncbi.nlm.nih.gov/pubmed/21999884>
4. <http://pediatrics.aappublications.org/content/early/2015/10/28/peds.2015-2151>
5. This is not a typo or an attempt at fear mongering. See electrical engineer Alasdair Phillips' graphic here: <https://s3.amazonaws.com/esrx1811/philips-lamburn-EMF-RF-exposure-graph-v8.jpg>
6. <https://www.ncbi.nlm.nih.gov/pubmed/24192494>
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15. <https://onlinelibrary.wiley.com/doi/abs/10.1002/cjce.5450790428>
16. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3780531/> To go deeper on the exact mechanisms Dr. Martin Pall has uncovered since 2013, make sure to watch his 90-minute video presentation on the topic: <https://www.youtube.com/watch?v=0RIskTMLV40>