Why You Don't Need to Worry about 5G

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Wireless communication technology is not inherently harmful.

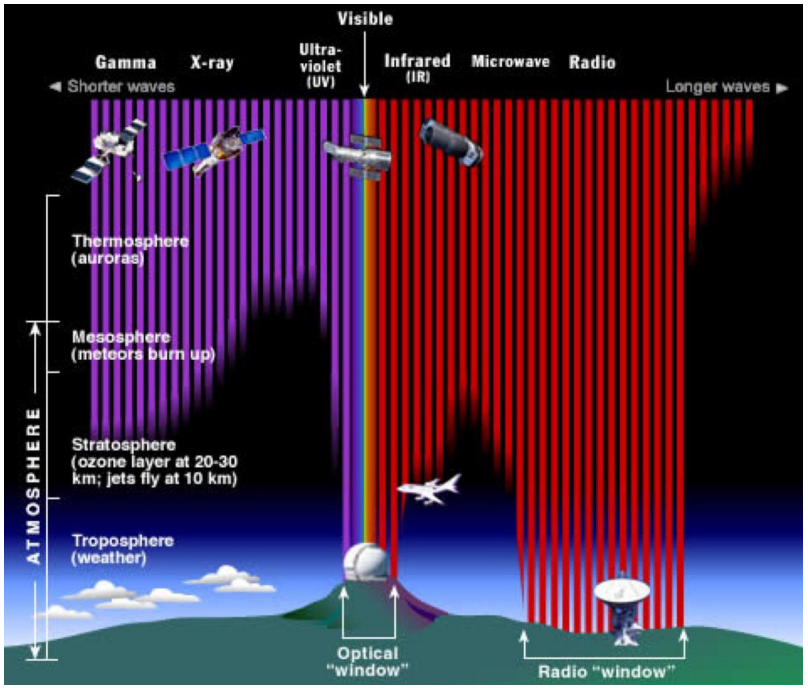
Wireless communication technology works by sending and receiving radio waves. Science demonstrates that when used as designed, commercial wireless technology doesn't transmit enough energy to harm our bodies.

Although radio waves are invisible to the naked eye, they are actually made of the same "stuff" as sunlight. This "stuff' is electromagnetic radiation (hereafter referred to as "radiation"). As demonstrated in the graphic below, our sun produces radiation across a vast spectrum of wavelengths. Visible light and radio are the only parts of this spectrum that can penetrate our atmosphere to reach Earth's surface.

Humans evolved to thrive during constant exposure to both light and radio waves. But radio waves carry a tiny fraction of the energy of visible light. As weird as it may seem, your own body emits more radiation into the atmosphere than an e-tablet operating at full power.

"5G" may sound exotic, but it's nothing more than an industry term for a suite of radio technologies that broadcast at higher frequencies than most of our existing cellular networks. Our exposure to 5G broadcasts is fundamentally no different than other radio exposures.

Visible Light and Radio Waves from Space Penetrate Earth's Atmosphere



[Credit: National Aeronautics and Space Administration (NASA)]

The preponderance of evidence shows that wireless technology is safe.

As with many technologies that have been in use for decades, a large number of studies have been conducted to determine whether radio technology is harmful to humans. Inevitably, some of these studies are of higher quality than others. When health researchers take this range of quality into account, they are left with a body of high-quality research that has consistently failed to discover substantial harm from radio waves.

Governmental health organizations generally agree with this assessment. According to the World Health Organization (WHO), based on "a large number of studies conducted over two decades … no adverse health effects have been established as being caused by mobile phone use."[1] The U.S. Food and Drug Administration reached a similar conclusion in February 2020 after reviewing 125 published studies: "There are no quantifiable adverse health effects in humans caused by exposures at or under the current cell phone exposure limits."[2]

If mobile phone technology caused cancer, we would expect to see cancer rates rise when mobile phones were widely adopted beginning in the 1990s. This has not occurred. A 2010 study that compared brain cancer rates to cellphone usage in thirteen countries concluded, "Overall, no increase in risk of [brain cancer] was observed with use of mobile phones."[3] This study followed a 2003 review that concluded, "the preponderance of published epidemiologic and experimental findings do not support the supposition that … [mobile phone radio] fields are carcinogenic."[4]

Science-based regulations for wireless technology are still crucial to health and safety.

Wireless communication has profoundly affected our economy and society. There is plenty of room for debate on the merits of these changes, but it's inarguable that in many ways, communication and exchange have become far easier than ever before in history. The ability to trade information across vast distances carries much promise to improve our way of life. It's imperative that we keep these benefits in mind when assessing the merits of radio technology.

This does not mean that we should abandon safety standards. Now as ever, we need science-based regulations to ensure the safe use of technology. Fortunately, this is already happening. In March 2020, the international scientific body that assesses radio technology health risks (International Commission on Non-Ionizing Radiation Protection, or ICNIRP) issued new advisory guidelines for 5G. According to Dr. Eric van Rongen, the ICNIRP chair, "The guidelines have been developed after a thorough review of all relevant scientific literature, scientific workshops and an extensive public consultation process. They provide protection against all scientifically substantiated adverse health effects due to [electromagnetic field] exposure in the 100 kHz to 300 GHz range."[5] Science-based guidelines such as these inevitably evolve when research brings new facts to light—that's the beauty of science. As the guidelines evolve, regulatory agencies can protect public health by updating their regulations accordingly.

As with any technology, there will always be a need to balance the risks and rewards of radio technology. Let's ensure that this balance is informed by facts, not fear.

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