

# Scientist Asks “Should Companies Be Allowed to Site Small Cells 30 Feet From Residential Homes Without Prior Consent?”

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by [B.N. Frank](#), [Activist Post](#)

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American opposition to cell towers near homes is NOT new. In fact, [firefighter unions](#) have opposed the use of their stations for cell towers and antennas due to radiation exposure health risks since before 5G and 4G.

U.S. opposition to 4G and 5G small cells near homes continues to increase due to concerns about reduced property value (see [1](#), [2](#), [3](#)), public safety (see [1](#), [2](#), [3](#), [4](#), [5](#), [6](#), [7](#), [8](#)), health (see [1](#), [2](#), [3](#), [4](#), [5](#), [6](#), [7](#), [8](#), [9](#), [10](#)), cybersecurity (see [1](#), [2](#)), privacy (see [1](#), [2](#)), and environmental risks (see [1](#), [2](#), [3](#), [4](#)). In fact, some have described 5G deployment as a form of [“environmental racism”](#).

So it’s not unreasonable for a scientist to ask if companies should be allowed to install small cell towers 30 feet from residential homes *without* prior consent.

From [Environmental Health Trust](#):

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## **Should companies be allowed to site small cells 30 feet from residential homes without prior consent?**

Jul 26, 2021

*The following article was published in The Montgomery County Sentinel on July 26, 2021, one day before the Montgomery County Council was set to vote on a bill that would grant cell phone providers the right to put small cell antennas on light posts in front of people's homes without community feedback and free from local jurisdictional rules.*

By Paul Ben Ishai

*I read with some trepidation that wireless providers will be allowed, if this proposal ZTA 19-07 passes, to site small-cell infrastructure, including antennas, within 30 ft of residential buildings. The intention is that by utilizing existing street light poles by simply added a small cell antenna, the provider would not even have to inform the siting of a new antenna.*

### **Expected Exposure Levels and Current Safety Standards**

In general, small cell antennas suitable for serving 4G/5G networks will have an output power between 6 – 10 Watts and an antenna gain for anything between 6 -15 dBi. They can be placed on poles as low as 6 meters in height. For most residential neighborhoods this means that many street-facing second story bedrooms will be in direct line of sight from the antenna. The equivalent power density[1](PD) at 9.14 meters (30 feet) is up to 0.3 W/m<sup>2</sup>, less than that allowed by the FCC (10 W/m<sup>2</sup>) at these frequencies, but far higher than those accepted by Russia, Switzerland and Italy (0.1 W/m<sup>2</sup>) [1] . This level is also [far higher](#) than what is today considered as reasonable biological safe, [which is 0.1 mW/m<sup>2</sup>](#). More worryingly, this estimation is for a single antenna. As the

structure of the cellular market is such that there will be competing companies and competing infrastructures, it is natural to assume that many antenna sites will have more than one antenna on them, working at different frequency bands. In short, the figure of 0.3 W/m<sup>2</sup> is an under-estimate of the true exposure one would expect in bedrooms so exposed.

## **What are the health implications to residents?**

Long term exposure to low intensity electromagnetic radiation originating from cellphones and their infrastructure is recognized as having a detrimental impact on health. These impacts can take place at the level of cells and sub-cellular structures, including mitochondrial processes critical to cellular energy and metabolism. On the microscopic cellular level harmful effects on both the structures and functions of cells have been demonstrated to arise from mobile phone radiation; these include effects on [protein expression](#), [transcription](#), and [stability](#) mediated by the [MAPK \(mitogen-activated protein kinase\) cascades](#), [enzyme activity](#), [ovarian follicle development](#), and [increased reactive oxygen species in stem cells](#). These studies are representative of a large body of work – [more than 3000 studies according to EMF Portal and the ORSAA\) database](#) of studies demonstrating [non-thermal effects](#) at the cellular level. Another noted pathway to cellular damage has been the [effect of mobile EMF exposure on cell metabolism and membranes](#) termed Voltage-Gated Calcium Channels (VGCC). VGCCs are a class of membrane proteins responsible for the transport of calcium and other ions into and out of the cellular interior. One of the roles played by these ions is the [control of reactive oxygen species](#) (ROS). ROS can lead to the production of free radicals that have the capacity to damage DNA and to destroy essential cellular components. Further, ROS have been identified as [important precursors](#) or [early biological markers](#) for a [number of chronic neurological and other diseases](#) as well as indicators of [harmful effects on reproduction](#).

On the tissue level of the organism (human being), EMF exposure has been linked to [degradation](#) of the antioxidant defence system. A common argument against the relevance of this body of work is that it is mainly *in – vitro* and therefore [not applicable to the “real world”](#) situation of mobile phone use, although the “real world” use of cellphones shows that they [consistently violate](#) allowed exposure levels. However, recent studies of people living in proximity to mobile base stations have found evidence for ROS in their blood, which is recognized as a biochemical indicator of stress that has been associated with [increased risks](#) of cancer and other chronic diseases. Another important [2015 review](#) of existing studies on radio frequency radiation (RFR) effects was published by the National Academy of Sciences in the Ukraine, Indiana University, and the University of Campinas in Brazil. Based on 93 out of 100 peer-reviewed studies, that paper concluded that low-intensity RFR is an oxidative agent for living cells with a high pathological potential. The oxidative stress induced by RFR exposure explains a range of RFR health impacts, both cancer and non-cancer illnesses. In addition to chronicling illnesses, this study outlines 6 different biological mechanisms that may explain these RFR effects in the body. To quote [this source](#):

“In conclusion, our analysis demonstrates that low-intensity radio frequency radiation (RFR) is an expressive oxidative agent for living cells with a high pathogenic potential and that the oxidative stress induced by RFR exposure should be recognized as one of the primary mechanisms of the biological activity of this kind of radiation.”

Studies have also found that nonthermal cellphone radiation and laptop radiation can damage human sperm, reducing sperm quantity and quality, impair mitochondrial DNA of sperm, and appear to play a role in testicular dysgenesis and erectile dysfunction. We should note, as have other commentators, that male infertility clinics in Australia, the United States and

India regularly advise men having difficulty impregnating their partners to remove all wireless devices from their bodies. This advice is consistent with studies showing that current levels of cell phone radiation can [damage mitochondrial DNA of sperm](#), increase reactive oxygen species (ROS), and [reduce sperm quantity and quality](#).

There exist ample proof of detrimental effects to human health in epidemiological studies. I list a few here:

- [Miller et al.](#) states “recent case-control studies from Sweden and France corroborate findings of earlier studies in providing support for making a causal connection between cell phone use and brain cancer, as well as acoustic neuroma, also called Vestibular Schwannoma. [Hardell and Carlberg](#) (2013) concluded that the Bradford Hill criteria for causality have now been fulfilled. It is notable that three recent meta-analyses all confirm significant increased risk of glioma after 10 or more years of use of cell phones ([Bortkiewicz et al., 2017](#); [Prasad et al., 2017](#); [Yang et al., 2017](#)).”
- [Luo et al.](#) also noted the carcinogenicity of cellphone radiation increased the incidence of thyroid cancers when genetic susceptibility was taken into account.
- The incidence of ROS in in-vivo studies was summarized by [Dasdag and Akdag](#) and listed over 50 in-vivo studies demonstrating adverse ROS stress as a result of cellphone radiation.
- In a meta study by [Belpomme et al.](#) it was shown that in case -controlled studies there is a consistent increased risk (40%) for glioma and acoustic neuroma associated with mobile phone use. These results are backed by results from animal studies that show [co-carcinogenic and tumor promoting effects](#). The conclusions are further confirmed by studies by [Vornoli et al.](#) and [Falcioni et al.](#)
- [A significant increase in Electromagnetic](#)

[Hypersensitivity](#) has also been reported by Belpomme, based on epidemiological studies.

- A statistically significant increase in heart malignant schwannoma in rats subject to life time exposure to 1.8 GHz GSM transmission was reported by [Soffritti and Giuliani](#) as well as by the [National Toxicology Program of the NIH](#).
- Significant DNA damage, caused by exposure to real life exposure to mobile phones was [found by Panagopoulos](#).

These studies represent a small portion of the epidemiological studies and in-vivo studies documenting substantiated increases in cancer rates that can be attributed to the use of and exposure to cellphone radiation at levels similar to those expected under this Zoning Ordinance, ZTA 19-07.

## **Why Should Cellphone Providers Not Be Allowed to Override Zoning laws?**

The basic goal of a cellphone provider is to make money for its investors, despite whatever their publicity may claim. They have no vested interest in public health. Their primary objective is to provide service to their customers for profit. As outlined above, the public level of exposure, especially inside peoples homes will dramatically increase, along with an expected detrimental effect on their health. That the residents have no say in the matter is fundamentally undemocratic and a violation of their basic right to health.

ZTA 19-07 will be [voted on by the Montgomery County Council](#) on Tuesday the 27th. Given the wealth of scientific evidence as listed above, the power to site and install antenna in the residential domain cannot be the prerogative of a commercial company only.

*Dr. Paul Ben Ishai, a Senior Lecturer with the Department of Physics, Ariel University, Ariel, Israel, and the Head of the Laboratory of Terahertz Dielectric Spectroscopy.*

[1] where  $G$  is the gain in linear scale,  $P$  is the power in Watts and  $R$  is the distance from the antenna.

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Opposition to 5G is worldwide. Cities and entire countries have taken action to [ban, delay, halt, and limit installation](#) AS WELL AS issue moratoriums.

In May, [scientists submitted a letter to President Biden](#) asking him to protect the public from 5G and [other unsafe technology](#). Americans opposed to 5G may [click here](#) to sign a letter asking the Biden administration to stop deployment immediately.

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