

Overview of New Hampshire Commission

- The Commission was convened through [bipartisan legislation](#) that was passed by the legislature and signed by the Governor
 - This is the first legislation passed in the United States calling for the formation of a commission to explore the health effects of 5G
- The 13 Commission members had backgrounds that included physics, toxicology, electromagnetics, epidemiology, biostatistics, occupational health, medicine, public health policy, business, and law
- The Commission met over a one-year period and submitted its [Final Report](#) in November 2020
- The overarching conclusion of the Commission is that wireless radiation poses a significant threat to human health and the environment
- More detailed information about the Commission can be found [here](#) and [here](#)

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Fundamental Question

- What is a safe setback distance for a cell tower?
 - Why did the New Hampshire Commission pick a setback distance of 500 meters (1,640 feet)?
- There are two basic approaches to identifying a safe setback
 1. Look at disease prevalence as a function of the distance people live from a cell tower
 2. Identify the lowest power densities known to cause negative health outcomes and determine the typical distance from a cell tower where those power density values are not exceeded

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Approach 1: Look at Health Outcomes for People Living Near Towers. At What Distance Do Elevated Health Problems Diminish?

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Article Title:
Mortality by
neoplasia and
cellular telephone
base stations in the
Belo Horizonte
municipality, Minas
Gerais state, Brazil

Mortality versus Distance People Live from Tower

The article reports on research that analyzed the spatial correlation between how close people lived to a cell tower and cases of deaths by neoplasia. Data obtained from Brazilian government databases.

Covered timeframe 1996-2006; conclusions based on study of 856 cell towers and 7,191 cancer deaths

The largest power density measured during the study was $40.78 \mu\text{W}/\text{cm}^2$ ($407.8 \text{ mW}/\text{m}^2$)

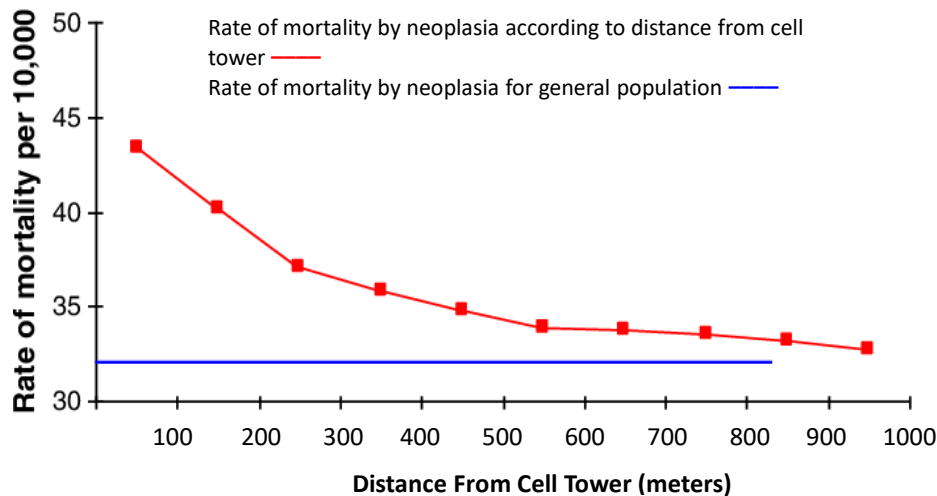
Adilza C. Dode, Mônica M.D. Leão, Francisco de A.F. Tejo, Antônio C.R. Gomes, Daiana C. Dode, Michael C. Dode, Cristina W. Moreira, Vânia A. Condessa, Cláudia Albinatti, Waleska T. Caiaffa,

"Mortality by neoplasia and cellular telephone base stations in the Belo Horizonte municipality, Minas Gerais state, Brazil", Science of The Total Environment, Volume 409, Issue 19, 2011, Pages 3649-3665, ISSN 0048-9697

<https://doi.org/10.1016/j.scitotenv.2011.05.051>

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Take-Away from Article Referenced on Previous Slide



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Meta Analysis of Health vs Tower Distance Studies

We found epidemiological studies pertaining to the health effects of mobile phone base station RF emissions to be quite consistent in pointing to a possible adverse health impact.

Eight of the 10 studies reported increased prevalence of adverse neurobehavioral symptoms or cancer in populations living at distances < 500 meters from base stations....none of the studies that found adverse health effects of base stations reported RF exposures above accepted international guidelines, the implication being that if such findings continue to be reproduced, current exposure standards are inadequate in protecting human populations.

Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations, VINI G. KHURANA, LENNART HARDELL, JORIS EVERAERT, ALICJA BORTKIEWICZ, MICHAEL CARLBERG, MIKKO AHONEN,

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.654.8551&rep=rep1&type=pdf>

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Approach 2: Identify Exposure Levels Associated with Negative Health Effects, and Relate that Level to the Distance from a Cell Tower

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Biointiative 2012

A Rationale for Biologically-based Exposure Standards
for Low-Intensity Electromagnetic Radiation



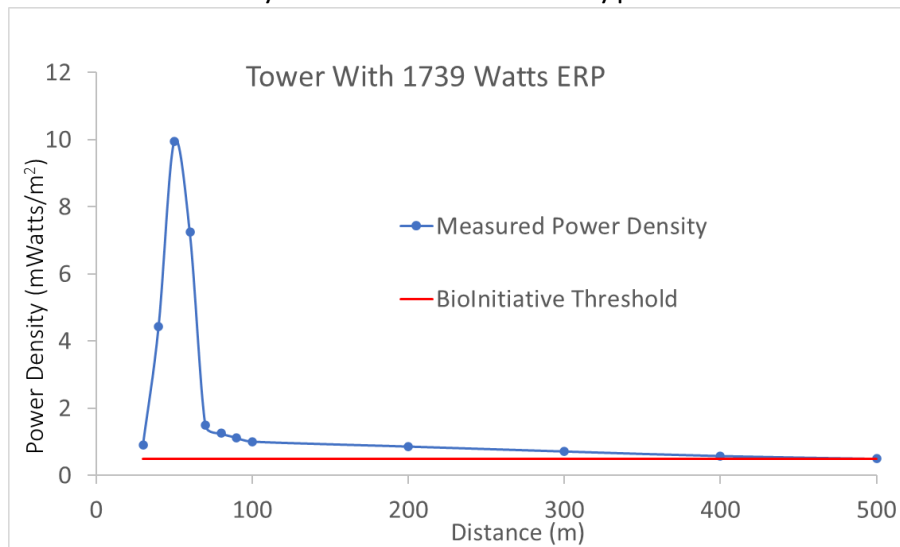
LOW EXPOSURE LEVELS ARE ASSOCIATED WITH BIOEFFECTS AND ADVERSE HEALTH EFFECTS AT CELL TOWER RFR EXPOSURE LEVELS

At least five new cell tower studies are reporting bioeffects in the range of 0.03 to 0.5 mW/m² at lower levels than reported in 2007 (0.5 to 1.0 mW/m² was the range below which, in 2007, effects were not observed).

<https://biointiative.org/>

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Power Density vs Distance for a Typical Cell Tower



Buckus, Raimondas et al. "A Technical Approach to the Evaluation of Radiofrequency Radiation Emissions from Mobile Telephony Base Stations." *International journal of environmental research and public health* vol. 14,3 244. 1 Mar. 2017, doi:10.3390/ijerph14030244 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5369080/>

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The Industry Has Consultants Who Are Paid to Discredit this and Similar Studies

- In June 2021, I presented the findings of the NH Commission to a town that was considering adding cell antennas to a water tower. I used the Brazil study to show the dangers of living near such antennas
- In the town's next meeting, they brought in a company that the town paid to evaluate the proposed installation. As seen in a [recording of their presentation](#), the presenters claimed to be impartial regarding the proposed installation.
 - The second presenter never acknowledges being paid by the telecommunications industry, although his work for them is documented [here](#)
 - The second presenter sought to discredit the Brazil report from a supposedly non-biased perspective
 - He stated that "I'm not presenting my views about this", not mentioning that he submitted [a paper](#) challenging the findings of the Brazil report
 - He also did not mention that the authors of the Brazil study published [a response to his criticisms](#)
 - He only referenced government agency reports to discredit the paper. This is significant because the Commission found that many of the agencies involved in regulating radiation levels are [captured](#).

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Conclusions

- Significant Biological effects do not appear to occur at distances greater than 500 meters from a typical cell tower
- The power density at 500 meters from a typical cell tower is near the power density considered not to cause biological effects in the laboratory
- The telecom industry will claim that no setback is necessary because they do not recognize the danger of wireless radiation
- Implementing setbacks will not inhibit robust cellphone coverage, although it may make cell tower siting more expensive
 - The setback will require the use of taller towers which will provide more uniform coverage without exposing people to harmful radiation