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Writing For the Sciences

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The Effect of Cell Phones on Brain Cancer: Annotated Bibliography

Aydin D, Feychting M, Schuz J, Tynes T, Andersen TV, Schmidt LS, Poulsen AH, Johansen C, Prochazka M, Lannering B, et al. 2011. Mobile phone use and brain tumors children and adolescents: a multicenter case-control study. *JNCI*. 103(16):1264–1276.
doi:<https://doi.org/10.1093/jnci/djr244>.

This source supports the notion that cell phones can lead to brain tumors. The article mainly focuses on the effects of mobile phone usage on children and young adults because phone usage is more significant within that specific age group compared to older adults. This study tested a set of 646 control and 352 case patients' children between the ages of 7-19 diagnosed with a brain tumor. The control was randomly picked, so there were no biases in the results. Then, participants were asked to answer a online survey about their phone usage and records. Based on the data, it was found that cell phone usage does affect whether someone develops brain tumors because when someone who has been using a phone for at least 5 years, there is a lower chance of developing brain cancer compared to those who don't regularly use a cell phone. It's believed that this is partially because the people who were using it for a more extended period were able to develop a tolerance. Additionally, the data was collected from people with brain cancer in Denmark, Sweden, Norway, and Switzerland, which supports the idea of the results not being

biased. This is because the participants are from different places instead of one, which allows for the analysis of whether only one area is stronger than others.

In writing this article, the author aims to inform individuals about the relationship between cell phones and brain tumors. The article is reliable because the data presented is firsthand evidence directly from the scientists. Additionally, the report is credible because it was produced by the Journal of the National Cancer Institutes. All the authors are a part of the Department of Epidemiology and Public Health, which suggests they know the topic. Overall, I will use this article to the thesis of mobile phones and brain cancer by comparing the other articles to this one to find the similarities and differences between them.

Castaño-Vinyals G, Sadetzki S, Vermeulen R, Momoli F, Kundi M, Merletti F, Maslanyj M, Calderon C, Wiart J, Lee A-K., et al. 2022. Wireless phone use in childhood and adolescence and neuroepithelial brain tumours: results from the international MOBI-Kids study. *Environ. Int.* 160(107069). doi:<https://doi.org/10.1016/j.envint.2021.107069>.

This article is about mobile devices, specifically wireless phones, that have a higher possibility of causing brain tumors. This source supports the idea that mobile phones can lead to the development of brain tumors. The study included about 899 participants with brain tumors around 10 to 24 years old and 1,910 controls. It was decided to use children and young adults for the experiment because cell phone use is more significant in the age group compared to an older group. Data was also based on 14 countries (Australia, Austria, Canada, France, Germany, Greece, India, Israel, Italy, Japan, Korea, the Netherlands, New Zealand, and Spain). The participants would be tested for exposure to radio frequencies, extremely low frequencies, and

electromagnetic fields. Based on the study, about 671 individuals had neuroepithelial-type tumors, and the rest had glioma-type tumors. Additionally, the study found that there isn't a significant link between wireless phone use and brain tumors. However, this could've been caused by the participants being exposed to low radiation frequencies instead of higher frequencies. Thus, the concluding results could've been due to that significant factor. But the possibility of the radiation being released from the phone impacting the development of brain cancer is high.

The author's goal in writing this article is to inform people about the relationship between brain tumors and cellphone magnetic fields. The report is reliable because the data is presented directly by the scientist. It was also published on the ScienceDirect website, and each author has a background in advanced science. This makes the journal more credible because it suggests that the information presented in the research is trustworthy. Overall, I plan to use this article to support the thesis by comparing the findings to other articles while also noting the differences. This will allow for a thorough analysis of how the overall understanding of the link between cell phones and brain cancer.

Mialon HM, Nesson ET. 2019. The association between mobile phones and the risk of brain cancer mortality: a 25-year cross-country analysis. *Contemp. Econ. Policy.* 38(2):258–269.
doi:<https://doi.org/10.1111/coep.12456>.

The study describes the investigation of the relationship between cell phones and brain cancer by using data from the World Health Organization between 1990 to 2015. The study includes data

on death rates collected from 88 countries and country-level mobile phone subscription ratios from the World Bank. There wasn't a correlation between specific age groups and gender. Meaning that scientists collected data from anyone with brain cancer during that time. Based on the data, there was a relation between mobile phone subscription rates and death rates due to brain cancer between 19-20 years later. Scientists also concluded that aside from mobile phone use, other significant factors lead to the development of brain cancer. They established that ionizing radiation from computed tomography (CT) scans are also a leading cause of brain cancer. Scientists found that mobile phone radiation and CT scans are linked together because it's almost as if you're undergoing a CT scan depending on the number of times you use your phone. On the other hand, the study found that switching data plans from 4G to 3G or 4G to 5G could significantly affect whether you develop brain cancer. If you increase your data plan, you're expanding the radiation emitted from your phone. While if you decrease your plan data plan, you're lowering the radiation emitted from your phone, thus reducing the chance of developing brain cancer.

The authors' purpose for writing this article was to inform people about the hazards surrounding cancer and increasing mobile data. This article is reliable because it was published by the scientist who conducted the study. The authors are also seen as credible because one is part of a department at Emory, and the other works out of the same department but in a different University. Overall, the argument presented in the article can help support the thesis by comparing the findings and methods of this article with the other articles to discover the similarities and differences between them.

