

Cell Phone Use and Cancer: A Case Study to Explore the Scientific Method

by

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Part I – Hang Up!?

“Alisa, please, get off your cell phone already,” said her mother.

“But mom! I want to talk with my friends! Plus all my friends use it!” Alisa whined in response. Annoyed by her mother’s impatience, she mumbled: “Anyway, weekends are for free, you know.”

“This is not about the money. This is about your health. I’ve heard that there is a link between cell phones and cancer,” Alisa’s mother explained.

“You’re right!” said Alana, Alisa’s sister, cutting in. “In my scientific journalism class we are going to discuss some articles about a study that has been performed on cell phone use and its effect on health. The professor asked us to analyze the titles of those articles,” Alana added.

“And what did the study reveal? Has such a link been proved?” asked her mother, interested in hearing more.

“Well, we haven’t read the articles yet, but I have their titles here. You can read them,” Alana said as she handed a paper to her mother with the following list:

1. *Long-Term Cell Phone Use Spurs Tumor Growth*
2. *Study Indicates Mobile Phones Increase Tumor Risk*
3. *Mobile Phone Use and Acoustic Neuroma*
4. *Study Links Mobile Phones, Benign Tumors*
5. *Cell Phone-Tumor Link Found?*

“Now I’m even more confused. Do cell phones cause cancer or not? Can I use mine or not?” asked Alisa impatiently.

“In my next class we’re going to read the articles, so I will tell you everything then,” concluded her sister.

Questions

1. What information about the scientific research can be inferred by reading the headlines?
2. Compare headlines 4 and 5. Why is there a difference in the two headlines even when they outline the same scientific research?
3. What questions arise about the methodology and conclusions of the experiment when analyzing the headlines?

Part II – Journal Groups

You will be organized into groups of three or four and given copies of the news articles to read, which your instructor will provide you with. Each member of the group has to read one of the articles. Afterwards, you should be able to answer the following questions.

Questions

1. What is the purpose of the research outlined in the news articles?
2. Who are the researchers involved in the scientific work and in which institution was the research conducted?
3. What methods did the researchers use?
4. Explain the difference between an observational study like this and a controlled experiment.
5. State the results of the study.
6. What conclusions were drawn from the study?
7. Compare the scientific information described in articles 4 and 5: “Study Links Mobile Phones, Benign Tumors,” and “Cell Phone-Tumor Link Found?” Which of the two headlines better describes the results of the scientific research? Why?
8. How much credibility do you give to the results of the study? Why?
9. Give suggestions on how to improve the study.
10. How do scientists report the results of their experiments? Why is it important to disseminate this information?

Part III – A Scientific Article

Your assignment is to read the *Epidemiology* research paper, “Mobile phone use and the risk of acoustic neuroma” (Lönn et al., 2004), for the next class. The next time class meets, there will be a class discussion led by the instructor. The questions below will help you prepare for this discussion.

Questions

1. Compare the scientific data given in the press articles with those in the scientific paper.
2. Do you think cell phone use is hazardous to human health?
3. Based on this information, are you going to avoid using cell phones in the future?



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