

The nocebo effect: Media reports may trigger symptoms of a disease

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Media reports about substances that are supposedly hazardous to health may cause suggestible people to develop symptoms of a disease even though there is no objective reason for doing so. This is the conclusion of a study of the phenomenon known as electromagnetic hypersensitivity. Those affected report experiencing certain symptoms on exposure to electromagnetic waves, such as those emitted by cell phones, and these take the form of physical reactions. With the help of magnetic resonance imaging, it has been demonstrated that the regions of the brain responsible for pain processing are active in such cases. "Despite this, there is a considerable body of evidence that electromagnetic hypersensitivity might actually be the result of a so-called nocebo effect," explained Dr. Michael Witthöft of Johannes Gutenberg University Mainz (JGU). "The mere anticipation of possible injury may actually trigger pain or disorders. This is the opposite of the analgesic effects we know can be associated with exposure to placebos." The new study illustrates how media reports about health risks may trigger or amplify nocebo effects in some people.

Frequently, the media reports on the [potential health risks](#) associated with the [electromagnetic fields](#) (EMFs) produced by cell phones, cell phone masts, high-voltage lines, and Wi-Fi devices. People who are sensitive to electromagnetic fields report symptoms such as headaches, dizziness, burning or tingling sensations on their skin, and they attribute these effects to this radiation. Some people actually skip work or withdraw from their [social environment](#) because of their electromagnetic hypersensitivity and in extreme cases they may even move to remote

regions to get away from electrical equipment altogether. "However, tests have shown that the people affected are unable to tell if they have really been exposed to an electromagnetic field. In fact, their symptoms are triggered in exactly the same way if they are exposed to genuine and sham fields," added Withhöft. The so-called nocebo effect was initially identified during pharmaceutical trials. Subjects were observed to exhibit undesirable side effects even though they were not receiving the medication but merely a placebo.

Withhöft undertook the current study in collaboration with G. James Rubin during a research stay at King's College in London. The 147 test subjects were first shown a television report. One group of participants watched a BBC One documentary, which dealt in no uncertain terms with the potential health hazards supposedly associated with cell phone and WiFi signals. The other group watched a report on the security of Internet and [cell phone](#) data. Then all the subjects in both groups were exposed to fake WiFi signals that they were told were real. Even though they were not exposed to any radiation, some of the subjects developed characteristic symptoms: 54 percent of the subjects reported experiencing agitation and anxiety, loss of concentration or tingling in their fingers, arms, legs, and feet. Two participants left the study prematurely because their symptoms were so severe that they no longer wanted to be exposed to the assumed radiation. It became apparent that the symptoms were most severe among the subjects who had high pre-existing anxiety as a result of viewing the documentary about the possible hazards of electromagnetic radiation.

The study thus demonstrates that sensationalized media reports on potential risks, which often lack scientific evidence, can have a significant effect on the health of large sections of the population. Such speculation on health hazards most likely has more than just a short-term impact like that of a self-fulfilling prophecy; it is likely that over the long term some people begin to believe that they are sensitive and develop

[symptoms](#) in certain situations when exposed to electrosmog. "Science and the media need to work together more closely and make sure that reports of possible [health hazards](#) from new technologies are as accurate as possible and are presented to the public using the best available scientific data," said Witthöft, drawing consequences from the study findings.

More information: Michael Witthöft, G. James Rubin (2013), Are media warnings about the adverse health effects of modern life self-fulfilling? An experimental study on idiopathic environmental intolerance attributed to electromagnetic fields (IEI-EMF), *Journal of Psychosomatic Research*, [DOI:10.1016/j.jpsychores.2012.12.002](https://doi.org/10.1016/j.jpsychores.2012.12.002)

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