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## Nocebo: Reading this Column May Affect Your Health

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In a column [1] published some years ago, I mentioned the following interesting case from France:

Family members described complaints ranging from a metallic taste in the mouth to nosebleeds, all attributed to a cell phone tower recently installed across from their apartment building. The family even covered the apartment windows with aluminum foil and other “protective filters” to ward off the ill effects of the radiation from the tower. For its part, the operator of the cell phone tower (Orange) dryly noted that the electronic bay for the tower had not been installed yet and, therefore, the tower was not even active.

More recently, in his column “Telecommunications Health and Safety [2],” Prof. Lin discussed the case of hypersensitivity to electromagnetic fields:

The syndrome of electromagnetic hypersensitivity (EHS) consists of nervous-system symptoms, such as headache and fatigue; skin symptoms, such as facial irritations and rashes; as well as other non-specific health-related symptoms. One of the most renowned case of EHS is the reported hypersensitivity of Gro Harlem Brundtland, the former Prime Minister of Norway. She was the Director-General of the World Health Organization (WHO) from 1998 to 2003. She had not publicly talked about her EHS for more than 10 years. However, that ended when she told a reporter, “I avoid talking on mobile phone,” in response to a newspaper article alleging

that she now uses a mobile phone, according to a former top aide at WHO, Jonas Gahr Støre, the current Norwegian Minister of Health.

Prof. Lin went on to say, “The reported evidence suggests that while the phenomenon of hypersensitivity may be real, the questions as to whether the symptoms are associated with cell-phone use or how best to study EHS in a controlled laboratory investigation remain controversial.”

Earlier today, I received a copy of an interesting paper from Ric Tell, Chair of COMAR [3], the IEEE/EMBS Committee on Man and Radiation, of which I am an IEEE liaison member. The paper [4] by Michael Witthoef and G. Rubin asks the provocative question, “Are media warnings about the adverse health effects of modern life self-fulfilling?” The paper proceeds to investigate this question experimentally in the context of electromagnetic hypersensitivity, for which the authors use the term idiopathic environmental intolerance attributed to electromagnetic fields (IEI-EMF). In this study,

participants ( $N = 147$ ) were randomly assigned to watch a television report about the adverse health effects of WiFi ( $n = 76$ ) or a control film ( $n = 71$ ). After watching their film, participants received a sham exposure to a WiFi signal (15 minutes). The principal outcome measure was symptom reports following the sham exposure. Secondary outcomes included worries about the health effects of EMF, attributing symptoms to the sham exposure and increases in perceived sensitivity to EMF.”

The authors found that watching the television report about the adverse health effects of Wi-Fi increased EMF-related worries, post-sham exposure symptoms among participants with high pre-existing anxiety, the likelihood of symptoms being attributed to the sham exposure among people with high anxiety, and the likelihood of people who attributed their symptoms to the sham exposure believing themselves to be sensitive to EMF. This is the so-called Nocebo effect [5] in play:

Nocebo (meaning “I shall harm” in Latin) is the dastardly sibling of placebo (“I shall please”). In a placebo response, a sham medication or procedure has a beneficial health effect as a result of a patient’s expectation. Sugar pills, for example, can powerfully improve depression when the patient believes them to be antidepressants. But, researchers are learning, the reverse phenomenon is also common: negative expectations can actually cause harm.

Witthoeft and Rubin concluded: “Media reports about the adverse effects of supposedly hazardous substances can increase the likelihood of experiencing symptoms following sham exposure and developing an apparent sensitivity to it.” Their recommendation: “Greater engagement between journalists and scientists is required to counter these negative effects.”

If you have read this far and feel dizzy, you may blame the column for it. Sorry, mea culpa.

## References

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