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Nocebo Effect: Think Sick and You'll Be Sick

By Jack Dini

Sweden is one of the countries at the forefront of restricting chemical use in Europe. It has a policy of making its environment 'toxic-free' by 2010 and the country led in the preparation of the European Commission White Paper "Strategy For a Future Chemicals Policy." Yet as Bill Durodie notes, "Sweden has one of the highest levels of self-reported sensitivities to chemicals in the developed world. It would appear, then, that too much risk awareness can quite literally make you sick." (1)

As Helen Pilcher reports, "People who believe they have a high risk of certain diseases are more likely to get them than people with the same risk factors who believe they have a low risk." (2) You've heard of the 'placebo effect', the notion that a sugar pill can cure. But have you heard about the evil twin of placebo: the nocebo effect in which dummy pills and negative expectations can produce harmful effects?

The term nocebo, which means 'I will harm,' was introduced in the 1960s, and it is very real. Around 60 percent of patients undergoing chemotherapy start feeling sick before their treatment. The nocebo effect can also be catching. When we expect something to make us ill, we start looking for signs of illness, and studies have shown that if you hear of or observe a possible side effect, you are more likely to develop it yourself. (2)

Researchers from the University of Leuven in Belgium note that the nocebo effect typically occurred when a substance was foul smelling and not when it smelled pleasant. But when participants were given warnings about potential harm of chemical substances in the environment, reactions were much more nocebo-related, regardless of smell. The researchers concluded, "This suggests that warnings and campaigns against environmental pollution, while having important beneficial effects for the environment, many inadvertently facilitate acquiring symptoms to chemicals in the environment and promote the spreading of multiple chemical sensitivity, mass sociogenic illness and the like." (3)

Some other examples:

- In a study in the early 1980s, 34 college students were told an electric current would be passed through their heads, and the researchers warned that the experience could cause a headache. Though not a single volt of current was used, more than two-thirds of the students reported headaches. (4)
- Drinking water fluoridation was first introduced in Grand Rapids, Michigan in 1945. Calls began coming in to city offices from people complaining of sore gums and peeling tooth enamel. One woman even claimed that all her teeth had fallen out. These calls arrived in early January, when some press reports had stated that fluoridation would begin, but some weeks before the actual advent of fluoridation on January 25. (5)
- Call if fear of spraying. In one study researchers spewed distilled water from planes over residential neighborhoods without telling anyone what the spray contained. The intent was to gauge public phobia of chemicals. Sure enough, the experimenters were soon deluged with complaints from frightened folks who

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claimed the spray was causing cows to abort, dogs to shed and children to get sick.

- A wave of illness among Belgian children in June 1999 appeared to be a typical food poisoning outbreak. The culprit was contaminated Coca-Cola. Carbon dioxide used to carbonate a batch of the soda's syrup had been contaminated with some sulfur compounds. The contaminants were present at between five and seventeen parts per billion. Sulfides can cause illness, however, only at levels about a thousand times greater than these values. As Malcolm Gladwell reports, "At seventeen parts per billion, they simply leave a bad smell—like rotten eggs—which means that Belgium should have experienced nothing more than a minor epidemic of nose-wrinkling. More puzzling is the fact that, in four of the five schools where the bad Coke allegedly struck, half of the kids who got sick hadn't drunk Coke that day." (6)

- Electrosensitivity has been studied as it relates to people living near cell phone towers or hydro lines. A Paris household blamed three installed cell phone antennas in their area for causing headaches, nosebleeds and a metallic taste in the mouths of some residents. The one problem with this complaint—the antennas were never activated. (7)

Not even health professionals are immune. Medical students, who flick through more than their fair share of medical encyclopedias, are themselves susceptible to a phenomenon known as 'medical student disease,' whereby they develop symptoms of whatever condition they happen to be studying. Research has shown that medics display more signs of hypochondria than their peers studying law. Today the 'worried well' are more likely to go online to a library to self-diagnose, in which case patients websites could be exacerbating symptoms at the same time as raising awareness of them. No research has yet been conducted that directly addresses internet health sites and the nocebo effect. (8)

The nocebo effect, mass hysteria, and multiple chemical sensitivity are all related. Simon Wessely from King's College School of Medicine in London has hundred of examples of mass hysteria. Reports Malcom Gladwell, "Almost all cases fit a pattern. Someone sees a neighbor fall ill and becomes convinced that he is being contaminated by some unseen evil—in the past it was demons and spirits; nowadays it tends to be toxins and gases—and his fear makes him anxious. His anxiety makes him dizzy and nauseous. He begins to hyperventilate, he collapses. Other people hear the same allegation, see the 'victim' faint, and they begin to get anxious themselves. They feel nauseous. They hyperventilate. They collapse, and before you know it everyone in the room is hyperventilating and collapsing. These symptoms, Wessely stresses, are perfectly genuine. It's just that they are manifestation of a threat that is wholly imagined. 'This kind of thing is extremely common,' he says, 'and it's almost normal. It doesn't mean that you are mentally ill or crazy.'" (6)

Summary

Sandy Szwarc sums this up well, "We can become convinced that exposure to even a minuscule amount of a chemical or contaminant can harm our health, just as a minuscule amount of a healing substance can heal -- when neither can. The resulting symptoms can be extraordinary and far beyond anything we might ever imagine the power of suggestion could do to us. And when fears of a chemical, threat or exposure are shared among a group of people, the symptoms can spread. We do not help people by spreading sensationalized and unsupportable scares or using the sufferings of troubled souls as entertainment." (9)

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Jack Dini is a scientist and science writer living in Livermore, CA.
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