

## 'What isn't an endocrine disruptor?' Silent Spring Institute claims hundreds of common chemicals cause breast cancer — but the science is lacking

**A** study by the Silent Spring Institute (1), with funding from the politically sympathetic National Institute of Environmental Health Sciences during the days of organic industry keynote speaker and Ramazzini Institute member Linda Birnbaum, claims that hundreds of chemicals are endocrine disruptors.

Okay, [it is only correlation](#), but for the sake of argument let's take it as science and not just an "exploratory" claim; what *isn't* an endocrine disruptor? The coffee I am drinking while writing this is 100 percent guaranteed to have changed my hormones. Does that mean my coffee caused breast cancer? Another group of allied anti-science activists, Center for Science in the Public Interest, once tried to claim coffee did just that. And they used the same tactic; find correlation and hope they get a *New York Times* journalist to bite and then CSPI can sue and companies will offer a quick settlement to avoid an emotional jury trial where science is not required.

# Application of an *in Vitro* Assay to Identify Chemicals That Increase Estradiol and Progesterone Synthesis and Are Potential Breast Cancer Risk Factors

 is companion of 

Bethsaida Cardona and Ruthann A. Rudel

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It didn't work then but it easily could have. All you have to do is "suggest" something is linked to cancer and people removed from science – organic food shoppers, anti-nuclear activists, alternative medicine customers – want it banned.

"Endocrine disruption" was a term manufactured in the 1990s to try and make science seem like it was hurting us even when EPA showed chemicals were safe. If it caused any change, Fred vom Saal and other wacky conspiracy theorists charge, it must be bad.

Once you create a closed system – where any change, even temporary, is bad – it is easy to find someone to create statistical significance and "correlate" anything to anything.(2) It is even easy to literally [show that coin flips are prejudiced against landing on heads](#) with statistical significance. That is why journals have started to disqualify papers that rely on a p-value as their source of legitimacy.

What *doesn't* increase breast cancer risk? Everything might, if you use correlation. Weedkillers or bacon or Non-GMO onions, since all it takes to create correlation is a Food Frequency Questionnaire with

enough rows and columns. Some things *are* carcinogens, like cigarettes. And some chemicals. But since Silent Spring Institute gets funding from the organic industry, they won't note that [copper sulfate is one pesticide known to be carcinogenic](#), a killer of beneficial insects, a decimator of soil, and it pollutes water. It is certified organic, though, so it is not going to show up in any paper funded by NIEHS or appearing in their in-house magazine which seeks to scare people about science.



Copper sulfate. Credit: Old Bridge Chemicals

To create their correlation they tasked an employee, Bethsaida Cardona, with a bachelor's degree in psychology from Harvard, with looking at publicly available data on EPA approved – safe – chemicals.

Along with Ruthann Rudel, who has a master's degree in environmental policy from Tufts yet somehow claims to be a "toxicologist", they wrote a paper claiming 296 chemicals are producing more estradiol or progesterone – but the data were only in cells.

Forget that neither of them are qualified to interpret what they are reading, this was only in cells. If effects in cells counted for anything, we would have 10,000 cancer cures on the market right now. Instead, like with rat studies or epidemiology claims, cell studies are firmly in the "exploratory" pile. It might be real but 9,999 times out of 10,000 exploratory claims will never go past the press release. No real scientists will follow up because there is no plausible biological mechanism.

Like with this claim. Yes, higher levels of estradiol or progesterone can be linked to a risk factor for breast cancer, but if endocrine disruption claims were real the first product taken off the market would be birth control pills. It would be hilarious to see anti-science activists lobbying for bans on birth control. But attempts to get a settlement from companies over that failed in the 1980s, along with coffee.

It won't go anywhere because this is a study to mobilize paranoia about the modern world, not to inform science or the public. The data were already in EPA ToxCast, which means it has already been explored and none of the chemicals they claim may be 'a risk factor for a risk factor' for breast cancer have been found to be actually causing any cancers. They can't even fantasize about how these chemicals could cause enough of an effect to be a risk factor for a risk factor for cancer.

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Trying to claim otherwise is an activist version of Bilderberg Conspiracy stuff.

Yet it still got published in *Environmental Health Perspectives*, the internal magazine of...wait for it...the same NIEHS which gave Silent Spring Institute the donation to pay the salaries of the social science and humanities majors while they wrote this supposed chemistry paper.

I am not saying that was overt crony-ism by Birnbaum, but given her controversial history at NIEHS and her war on science, it has to be considered.

One thing anyone who has read the work of Carson would agree on; she'd want her name removed from this group. She wanted fewer pesticides, not to be the face of people engaged in a war of extinction against progress.

## **Notes**

(1) Carson wanted fewer pesticides and was for GMOs. While her book was not a work of science it certainly caught public attention when it came to overuse of pesticides like DDT, and she would be thrilled with the modern farming that resulted. Everyone in agriculture knows that 'more is not better' now in a way that activists can never learn. When your only farm tool is a computer keyboard, agriculture is easy.

(2) It isn't always scientists doing the p-hacking, sometimes politicians make them keep studying until someone provides the result they want, like the Obama administration after government scientists couldn't find a reason not to approve the Keystone XL pipeline, but he really, really wanted to ban it. It's the science equivalent of making someone sit at the table until they finish a terrible dinner.

**Hank Campbell is the founder of Science 2.0 and co-author of the book Science Left Behind. Follow him on Twitter [@HankCampbell](#)**

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