

No, Organic Food Doesn't Reduce Cancer Risk. That's Biologically Impossible



By Alex Berezow, PhD — October 22, 2018



Credit: Lorenz Deconinck/Wikipedia [1]

Some studies are so incredibly stupid, that one wonders how they managed to get published in any scientific journal, let alone a prestigious one. And yet, it has happened, once again¹.

A new [study](#) [2] in *JAMA Internal Medicine* claims that eating organic food will reduce a person's risk of developing cancer. That's right. Magic prevents cancer.

Let's review what we already know about organic food. It's not any more nutritious than conventionally grown food. It doesn't taste different. It's [not better for the environment](#) [3]. Because people can't tell the difference, farmers intent on committing fraud can [pass off conventional food as organic food](#) [4].

The only substantive differences are the price tag and the fact that organic agriculture arbitrarily bans some types of pesticides while allowing others. That means the only plausible biological mechanism by which conventional food could cause more cancer than organic food is if the former used more carcinogenic pesticides than the latter. Is that true?

No. Here is a list of the most common pesticides ([PDF](#) [5], page 22). By far, the most popular pesticide used in the United States is glyphosate. [It does not cause cancer](#) [6]. The second most common pesticide is atrazine. [It does not cause cancer](#) [7]. 2,4-D is another common pesticide. [It does not cause cancer](#) [8]. And even if they did, these pesticides are used at such extremely low levels that they do not pose risks to consumers. The only risk -- actual or theoretical -- is for people who are potentially exposed to large doses, such as farmers or field applicators.

Likewise, organic pesticides are safe when used at approved concentrations. But if we really want

to play this game, we can. Here is a [list](#) [9] of approved and prohibited substances for organic production. Ethanol is allowed. That absolutely is a carcinogen. [Copper sulfate](#) [10] is a popular organic pesticide, and it can cause nausea and vomiting. Bleach? Organic allows that, too.

The point is that avoiding conventionally grown food does not mean you will avoid scary chemicals. Scary chemicals are everywhere, so it's the dose that matters. (By the way, 99.99% of the pesticides we eat are [made by the plants themselves](#) [11].)

Organic Food Doesn't Reduce Cancer Risk

The above reasons are why the recent study in *JAMA Internal Medicine* is complete nonsense. Simply put, it is biologically impossible for organic food to lower a person's risk of cancer. There is no sensible mechanism how that would be the case.

Furthermore, the study design was pure garbage. Of the study's participants, 78% were female, so the data are skewed by gender. The data were also collected using questionnaires, which is an incredibly unreliable way to do research. The authors' ability to properly control for all confounders was unconvincing. And the authors didn't even attempt to collect data on pesticide exposure. (So, what exactly were they measuring?)¹

Author Has History of Bizarre Research

One of the main authors of the study, Emmanuelle Kesse-Guyot, has a history of bizarre, agenda-driven research. For example, she co-authored a [paper](#) [12] in 2015 claiming that organic farming promotes sustainable diets, which is flat-out false. Organic farming [could not feed the world](#) [13] because it is [20% less efficient than conventional farming](#) [14]. So, organic is, by definition, unsustainable. She also wrote a [paper](#) [15] linking organic food to life satisfaction, which is less like serious research and more like cheerleading.

JAMA Internal Medicine really ought to know better, but this [isn't the first time](#) [16] that *JAMA* has ventured into Bizarro World. They'll most certainly do it again².

Notes

(1) Previously, this article contained the following: "They found that people who ate organic food had an absolute risk reduction of 0.6%." Also, "[T]he [incidence of cancer in the U.S.](#) [17] is 439.2 per 100,000 men and women. If everybody switched to organic food, then the cancer rate would plummet to... 436.7 per 100,000." This calculation is incorrect and was therefore removed.

(2) The prestigious journal [PNAS has published one too many stupid articles](#) [18], which may have contributed to its decision to forego print publications entirely.

(3) To its credit, *JAMA Internal Medicine* ran an accompanying [commentary](#) [19] that said that much of the data in the paper could not be verified or validated.

COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH

Source URL: <https://www.acsh.org/news/2018/10/22/no-organic-food-doesnt-reduce-cancer-risk-thats->

biologically-impossible-13538?fbclid=IwAR31qThbIKUC-
HjaxkLKMtxswGJOR2luJpgGT5fbelBo_DsAWd2nhpSdUI0

Links

- [1] [https://en.wikipedia.org/wiki/Magic_\(illusion\)#/media/File:King_Magic.jpg](https://en.wikipedia.org/wiki/Magic_(illusion)#/media/File:King_Magic.jpg)
- [2] <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2707948>
- [3] <https://www.acsh.org/news/2018/09/22/corporate-farms-are-better-environment-organic-farms-13438>
- [4] <https://www.acsh.org/news/2018/10/12/fraud-farmers-caught-selling-conventional-crops-organic-13506>
- [5] https://www.epa.gov/sites/production/files/2017-01/documents/pesticides-industry-sales-usage-2016_0.pdf
- [6] <https://www.acsh.org/news/2018/10/09/if-you-accept-science-you-accept-roundup-does-not-cause-cancer-13490>
- [7] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230407/>
- [8] <https://www.acsh.org/news/2016/04/07/what-is-the-difference-between-steph-curry-and-the-herbicide-24-d>
- [9] <https://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=9874504b6f1025eb0e6b67cadf9d3b40&rgn=div6&view=text&node=7:3.1.1.9.32.7>
- [10] <https://geneticliteracyproject.org/2017/09/08/closer-look-popular-organic-fungicide-copper-sulfate-compare-glyphosate/>
- [11] <https://www.acsh.org/news/2017/06/13/9999-pesticides-we-eat-are-produced-plants-themselves-11415>
- [12] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4484336/>
- [13] <https://www.nature.com/news/organic-farming-is-rarely-enough-1.10519>
- [14] <https://www.acsh.org/news/2016/08/25/organic-farms-yield-20-fewer-crops-than-conventional-farms>
- [15] <https://www.sciencedirect.com/science/article/pii/S2211335517301572>
- [16] <https://www.acsh.org/news/2016/11/06/jama-journal-alternative-medicine-atrocities-10401>
- [17] <https://www.cancer.gov/about-cancer/understanding/statistics>
- [18] <https://www.acsh.org/news/2018/10/18/pnas-and-microbiomes-will-they-publish-study-about-bee-chakras-next-13449>
- [19] <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2707943>