

Pesticides: Now More Than Ever

By [MARK BITTMAN](#)



[Mark Bittman](#) on food and all things related.

Tags:

[‘Silent Spring’](#), [Pesticides](#)

How quickly we forget.

After the publication of “[Silent Spring](#),” 50 years ago, we (scientists, environmental and health advocates, birdwatchers, citizens) managed to curb the use of pesticides^[1] and our exposure to them — only to see their application grow and grow to the point where American agriculture [uses more of them](#) than ever before.

And the threat is more acute than ever. While Rachel Carson^[2] focused on their effect on “nature,” it’s become obvious that farmworkers need protection from direct exposure while applying chemicals to crops^[3]. Less well known are the [recent studies](#) showing that routine, casual, continuing — what you might call chronic — exposure to pesticides is damaging not only to flora but to all creatures, including the one that habitually considers itself above it all: us.

As usual, there are catalysts for this column; in this case they number three.

I was impressed by a [statement by the American Association of Pediatrics](#) — not exactly a radical organization — warning parents of the dangers of pesticide and recommending that they try to reduce contact with them. The accompanying report calls the evidence “robust” for associations between pesticide exposure and cancer (specifically brain tumors and leukemia) and “adverse” neurodevelopment, including lowered I.Q., autism, and attention disorders and hyperactivity. (Alzheimer’s, obviously not a pediatric concern, has also been linked to pesticide exposure.)

This reminded me of recently disclosed evidence showing that [pesticide exposure in pregnant women may be obesogenic](#) — that is, it may cause their children to tend to become obese. The mechanism for this is beginning to be understood, and it’s not entirely shocking, because many pesticides have been shown to be endocrine disruptors, changing gene expression patterns and causing unforeseen harm to health.

And that in turn prompted me to recall that genetically engineered crops, ostensibly designed in part to *reduce* the need for pesticides, have — thanks to pesticide-resistant “superweeds” — actually [increased our pesticide use](#) steadily over the last decade or so. (In general, fields growing crops using genetically engineered seeds use 24 percent more chemicals than those grown with conventional seeds.)

Although these all caught my attention, the most striking non-event of the last year — decade, generation — is how asleep at the wheel we have all been regarding pesticides. Because every human tested [is found to have pesticides](#) in his or her body fat. And because [pesticides are found](#) in nearly

every stream in the United States, over 90 percent of wells, and — in urban and agricultural areas — over half the groundwater. So [Department of Agriculture data](#) show that the average American is exposed to 10 or more pesticides every day, via diet and drinking water.

This shouldn't be surprising: [pesticide drift](#) is a term used to describe the phenomenon by which almost *all* pesticides — 95 to 98 percent is the number I've seen — wind up on or in something other than their intended target. (This means, of course, that in order to be effective more pesticides must be used than would be necessary if targeting were more accurate.)

Much damage has been done, and it's going to get worse before it gets better. The long-term solution is to reduce pesticide use, and the ways to do that include some of the typical laundry-list items that find their way into every "how to improve American agriculture" story: rotate crops, which reduces attacks by invasive species; employ [integrated pest management](#), which basically means "think before you spray"; better regulate pesticides (and both increase funding for and eliminate the revolving door policy at the Environmental Protection Agency) with an eye toward protecting the most vulnerable — that is, farmworkers, anyone of childbearing age, and especially women in their first trimester of pregnancy

[4]; give farmers options for "conventional," that is, non-genetically engineered seeds (around 95 percent of all seeds for soy, corn and cotton contain a pesticide-resistant gene, which encourages wanton spraying); and in general move toward using more organic principles.

Note, please, that only this last strategy helps us protect ourselves and our families now. But although there's the usual disclaimer that not everyone can afford organic food, at a time when organic food has been under attack it's important to remember that part of the very reason for its existence is to bring food to the market that, if not free of all traces of pesticides — remember drift — at least contains none that have been applied intentionally. Charles Benbrook, in his excellent 2008 report ["Simplifying the Pesticide Risk Equation: The Organic Option"](#) estimates that organic food production would reduce our overall exposure to pesticides by 97 percent; that is, all but eliminate it.

[5]

If I were of child-rearing age now, or the parent of young children, I would make every effort to buy organic food. If I couldn't do that, I would rely on the Environmental Working Group's [guide to pesticides in produce](#). (Their "Dirty Dozen" lists those fruits and vegetables with highest pesticide residues, and their "Clean Fifteen" notes those that are lowest.) But regardless of age, we need to stay awake, and remember that the dangers of pesticides are as real now as they were half a century ago.

1. The word "pesticide" is used to include herbicides, fungicides, molluscicides (these kill snails and slugs) and a host of other "pests." [Here's a definition](#) from the E.P.A.

[Back to Article](#)

2. Nice piece by Margaret Atwood: "[Why Rachel Carson Is a Saint](#)."

[Back to Article](#)

3. Cancer, of course, is one awful risk of exposure. But there is the very real [danger of anencephaly](#) — a birth defect in which the baby is born without parts of brain and/or skull — in the children of farmworkers (both men and women) who were exposed to pesticides, even before pregnancy.

[Back to Article](#)

4. In a phone interview, Charles Benbrook, a professor at Washington State University, who is among the most articulate advocates of reducing pesticide use, said, “By building in sufficient margins of safety for that three-month window we are going to overprotect everyone else, which is great.”

[Back to Article](#)

5. And the “[Stanford study](#),” which attracted attention for all the wrong reasons — many reports focused on its finding of no discernible difference in nutritive quality between organic and conventional foods — verified that the pesticide content of organic foods was vastly smaller than that of conventional.

[Back to Article](#)

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