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Don't Let the Environmental Defense Fund Scare You About Lead

By Josh Bloom — June 20, 2017

Get the lead out? Or Not? Shutterstock

The Environmental Defense Fund, never the most reputable source for reliable information on a good day, is playing scary tricks on us. I must confess that I'm a little disappointed. The latest effort is so lame that I don't even have to wake up from my normal coma to dispense with it. It's about lead.

Yes, we all know lead is bad because it is a neurotoxin. But most of us also know that the amount of lead we are exposed to determines whether it will be harmful or not. Even groups that exist primarily to scare people know this, but they tend to stick to the following equation:

$$Honest\ discussion\ of\ dose = (Less\ money)_2$$

It's bad for business. Oldest trick in the book, and appallingly unoriginal, but it still works: Ignore the dose **(1)**.

Here is what EDF has to say in a June 15 article:

EDF‘s analysis of 11 years of FDA data found:

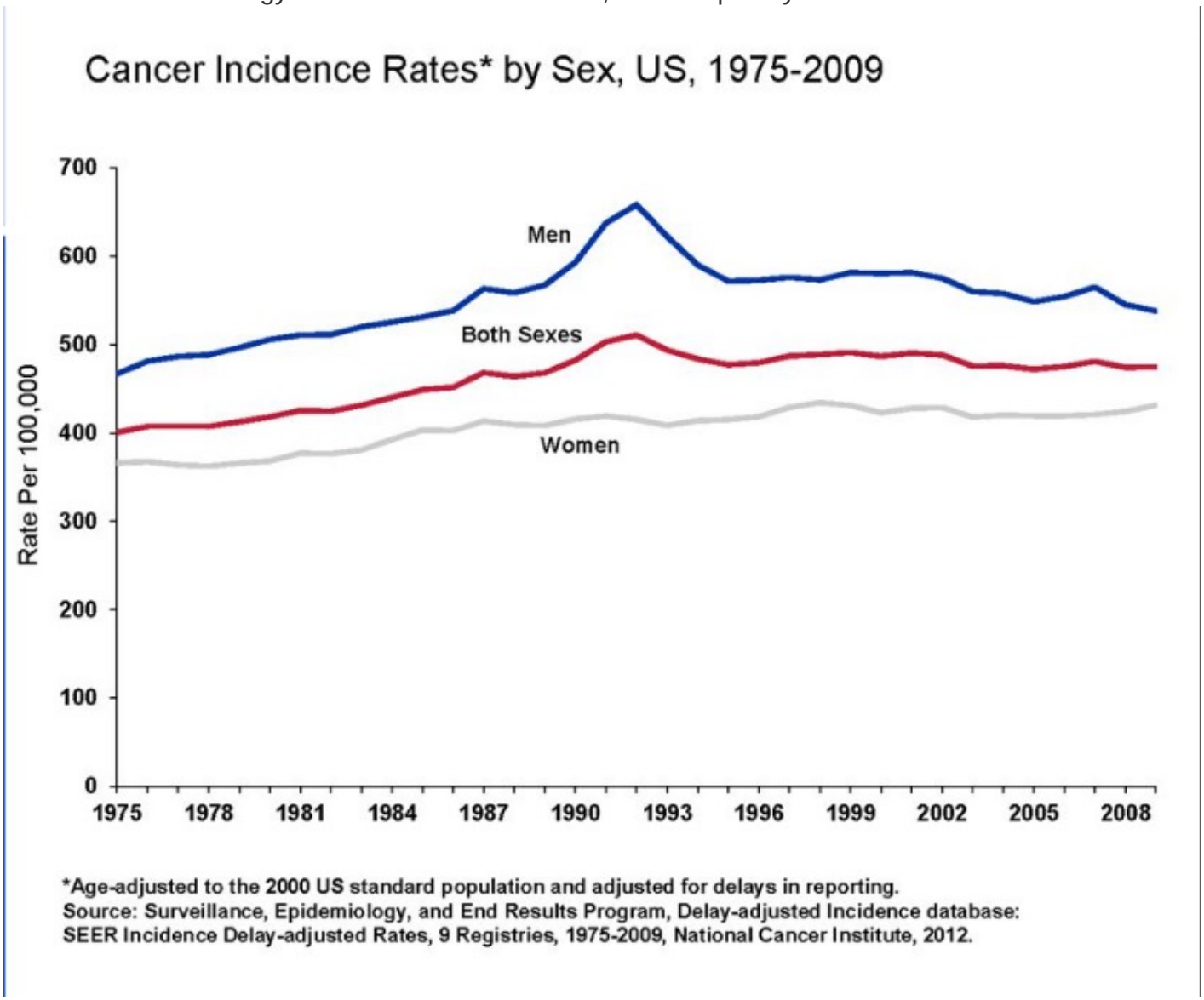
- *Lead was detected in 20% of baby food samples compared to 14% for other foods.*
- *Eight types of baby foods had detectable lead in more than 40% of samples.*

- *Baby food versions of apple and grape juices and carrots had more samples with detectable lead than the regular versions.*

Source: "Lead in food: A hidden health threat. FDA and industry can and must do better." [1]

I'll take it a step further. If we had analytical instrumentation even more sensitive than the incredibly sensitive detectors that now exist, lead would be detected in 100% of baby food, 100% of other foods, and 100% of all apple and grape juice. It's a damn good thing that instrumentation *isn't* more sensitive. Think of how many children would be in danger then.

Yes, that's silly. But that doesn't stop the chemical scares industry from using such silliness all the time. Here's an analogy which looks a bit different, is conceptually identical:

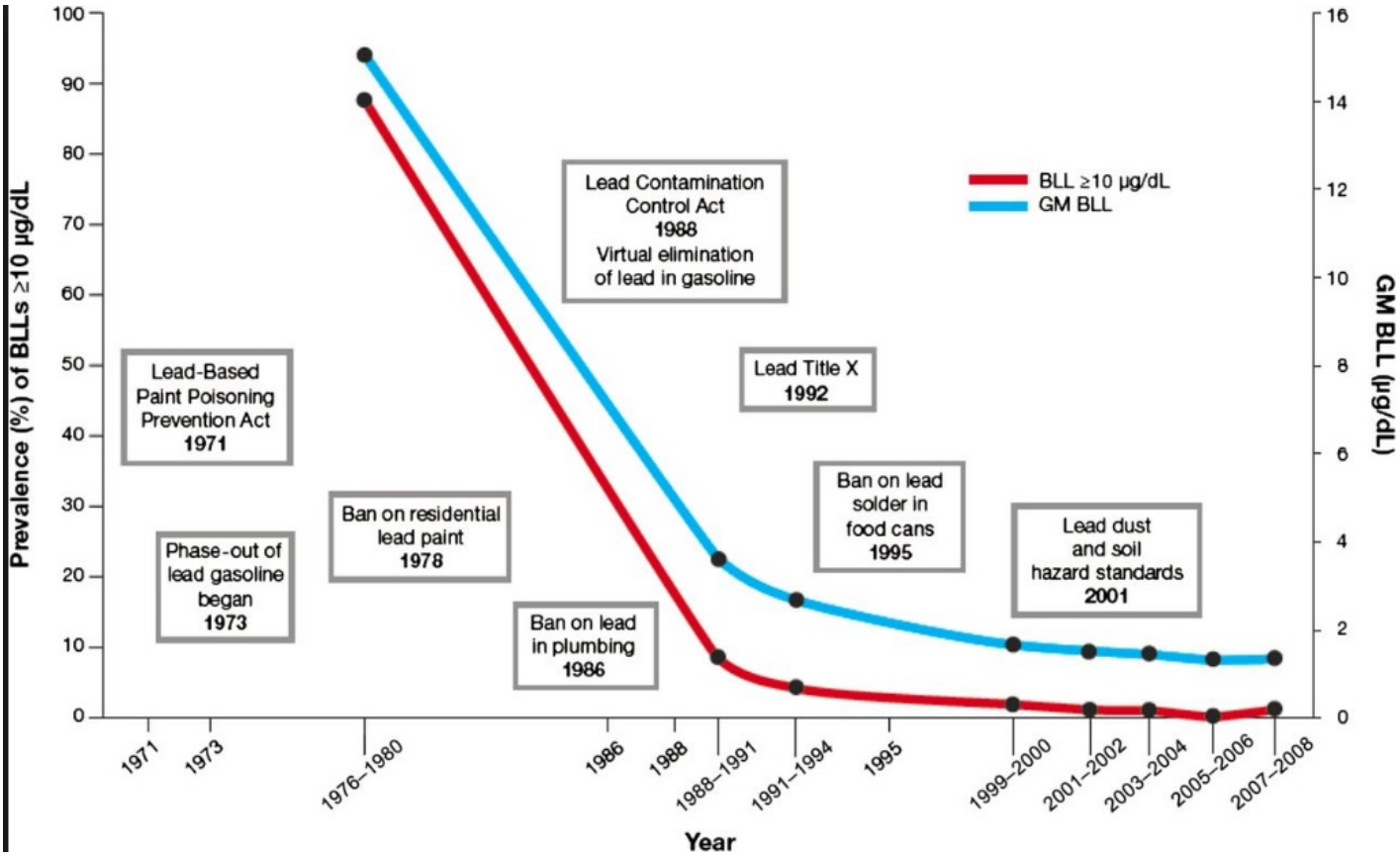


Age-adjusted rates of cancer, 1975-2008. Source: National Cancer Institute

In the two decades between 1987 and 2007, the incidence **(2)** of cancer was unchanged. But, there was a huge uptick in 1992, which quickly dropped off. What is this about? The graph contains the answer; the increase was seen only in men. It coincided with the beginning of PSA (prostate specific antigen) screening. No—men did not suddenly have a 40% increase in prostate cancer in 1992. This "increase" was an artifact of the new test. More cancers were detected because there was another, more sensitive, way to look for them, not because there was any real

change.

Likewise, when new methodology makes is possible to find lead, it is an absolute certainty that it will be detected in places where it existed before, but couldn't be "seen." So, are children now being exposed to dangerous levels of lead? Actually, it's quite the opposite, which is made clear in the graph below:



Timeline of lead poisoning prevention policies and blood lead levels in children aged 1–5 years, by year—NHANES, United States, 1971–2008. Source: 2016 Policy Statement [2]by the American Academy of Pediatrics **(3)**

The x-axis represents the time from 1971 through 2008. There are two y-axes. The left y-axis refers to the red line— the percentage of children aged 1-5 who had blood lead concentrations that were greater or equal to 10 micrograms of lead per deciliter (100 mL) of blood during a given year. In 1976, 90% of children exceeded this value. In 2008, almost none did.

The y-axis on the right refers to the blue line and displays the *average concentration* of lead over the same time period. In 1976 the average concentration was 15 micrograms per deciliter of blood. In 2008, that number dropped to less than 2 micrograms per deciliter.

Clearly, policy changes (the elimination of lead in gasoline, paint, and plumbing) had a profound effect on the amount of lead in children's blood. But most of us were around in the 1980s, and we were exposed to much higher amounts of lead than we are now, yet we are still alive. And, if you'd like to blame autism on lead, good luck. Because if the prevalence of autism is indeed greater **(4)** than it was in 1976, there would be an association between autism and *lower* levels of lead.

Perhaps most interesting is what the Environmental Defense Fund says it wants: "Set a goal of

less than 1 [part per billion] of lead in baby food and other foods marketed to young children."

Since values like 15 micrograms per 100 mL or 1 part per billion are probably meaningless to you, I used a concentration converter [3] to try to put these numbers in perspective. Fifteen micrograms per 100 mL equals 150 part per billion—the average concentration in kids in 1976. But the EDF is pushing the FDA to lower the permissible amount of lead in food and drinks for babies to 1 part per billion (ppb). (FDA limits currently range from 5-50 part per billion).

Is it worth it, or is this just a publicity stunt? Forty years ago, we were running around with lead blood levels of 150 ppb *in our blood*. Now we are supposed to be afraid of fruit juice with levels of one-thirtieth of that? Given how much lower our exposure to lead is than a generation ago, it is reasonable to wonder whether we have hit the point of diminishing returns and whether decreasing our already-low amounts of lead will make a meaningful difference?

But the EDF doesn't much care about meaningful. Nor are they well-meaning.

Notes:

(1) This is why the "no safe level of lead" is utter nonsense. There isn't a single drink or food in the world that doesn't have at least some lead in it, even if it's only a few atoms. Yes—there is a safe level of lead or we'd all be dead.

(2) Incidence is the number of cases per year, not survival. Incidence is not affected by life-extending new cancer drugs.

(3) The American Academy of Pediatrics states: "Low-level elevations in children's blood lead concentrations, even at concentrations below 5 µg/dL (50 ppb), can result in decrements in cognitive functions, as measured by IQ scores and academic performance." Question—given the enormous decrease in kid's lead levels over the past four decades, shouldn't they have much higher IQs than we did as kids? Our generation was smart enough to invent and iPhone, but dumb enough to come up with "The Real Housewives of Cleveland." Maybe it *was* the lead.

(4) There is a long-running debate about autism. Is there more of it than in the past? Or is simply being diagnosed more often? Both? I have no idea.

Links

[1] https://www.edf.org/health/lead-food-hidden-health-threat

[2] http://pediatrics.aappublications.org/content/early/2016/06/16/peds.2016-1493.figures-only

[3] http://www.endmemo.com/convert/concentration%20solution.php