

The Great Shower Curtain Scare

By ACSH Staff — June 30, 2008

The e-mails and phone calls I get these days are relentless. Usually triggered by the latest scary headline, panicked consumers want to know how to avoid all the "chemicals" (a term they often use synonymously with toxins) to which we are exposed.

Well, I tell them, I worry a lot more about slipping in the shower than about exposure to chemicals released from my polyvinylchloride (PVC) shower curtain. I do not look to eliminate plastics marked with the recycling identifier numbers one, three, six or seven from my life, and if I had to wear a shower cap, I would not worry about its effect on my health. Neither would I be concerned about my neighbour making wine from elderberries picked from a bush that grew in a cemetery. Alright, now for the details. Because it is there, rather than in headlines, that true science is to be found.

First, the shower curtain scare. This comes to us courtesy of a U.S.-based activist organization that has magnanimously adorned itself with the name, Center for Health, Environment and Justice (CHEJ).

The Food and Drug Administration -- it's not. CHEJ commissioned a study of shower curtains made from polyvinyl chloride (PVC), a substance it ominously, and unjustifiably, calls "poison plastic." The study made headlines across North America. Why? Because its results revealed that PVC shower curtains can release as many as 108 volatile organic chemicals. And why is that news? I'm not sure. A cup of coffee will release more than a thousand volatiles. Ah, but the argument, as put forward by CHEJ, is that some of the chemicals released by a shower curtain are classified as hazardous air pollutants by the U.S. Environmental Protection Agency. You know what? Exactly the same can be said about compounds such as furfural, styrene and caffeic acid found in coffee. Yet we do not talk about closing coffee shops, or about protecting people from second-hand coffee aroma.

Exposure is not equivalent to hazard. In order to demonstrate that chemicals from shower curtains can cause harm, we need more evidence than their presence in the air. Did CHEJ carry out any tests to show that these chemicals are absorbed into the body to any significant extent? No. Did the organization examine how such chemicals may be distributed in the body if absorbed and how they are metabolized and excreted? No. Absorption, distribution, metabolism and excretion (ADME) are the pillars upon which toxicology is built. If these factors are not addressed, arguments about risk crumble.

Did CHEJ run any controls to determine what chemicals are present in ambient air? No. The fact is that with the sophisticated instrumental techniques available today, a sample of air will reveal the presence of thousands and thousands of compounds, both natural and man-made. These come from car exhaust, combustion processes, perfumes, cleaning agents, paints, flowers, trees,

asphalt, food, sewage, sweat, cooking, and yes, shower curtains. You can include humans among the culprits too. Our flatus contains dozens of volatiles, including highly toxic hydrogen sulfide. So, in light of our overall exposure to tens of thousands of compounds, how likely is it that the chemicals released from PVC shower curtains present a disproportionate risk? Not very. The chlorinated compounds evaporating from the water in the shower probably are of greater concern.

The pliability of PVC shower curtains is achieved by the addition of compounds called phthalates, which act as internal lubricants. Some phthalates are controversial because of their potential hormone-like effects, and indeed certain ones have been eliminated from toys that young children can put in their mouths. The CHEJ study found a number of phthalates in shower curtains, which comes as no great surprise. But the study, apparently because of technical difficulties, did not determine if any of these were released into the air from shower curtains. And most people are not in the habit of eating their bathroom paraphenelia.

So what then are the 108 chemicals that got all the publicity? Mostly compounds released from the dyes used to print the colored designs on the curtains. These compounds would therefore also be released from other plastics, such as polyester or ethylene vinyl acetate (EVA), and even organic cotton, that CHEJ is touting as a replacement for PVC. EVA is a very useful plastic, and doesn't need plasticizers to make it soft and pliable. But it can release vinyl acetate into the air, a compound that the Canadian government has labeled as potentially hazardous. Of course, CHEJ is fixated on the evils of PVC, and is oblivious to such details. This is not to suggest that there is any risk with EVA shower curtains, any vinyl acetate released would be trivial.

And there is yet another point to be made. Have you noticed how a shower curtain is drawn in towards the tub when the water is turned on? That's because the streaming water causes a rapid downward movement of the air, reducing the pressure it exerts on the curtain. The greater pressure on the outside now pushes the curtain inward. Why is this relevant? Because any chemicals released from the shower curtain would be quickly sucked downwards, away from the nose and mouth.

Now on to the shower cap query. Quite understandable from a consumer's point of view. If vapours from one plastic can invade our privacy in the shower, why not from another, like a shower cap? No issue here. And as far as the danger of shower caps goes, as one concerned lady wanted to know, there is none. Usually made of clear polyethylene, with nary a plasticizer or dye molecule in sight.

What about getting rid of "unsafe" plastics in the home. This question was prompted by a confused article in a suburban paper citing a spokesperson from some local "Environmental Advisory Committee" who stated that #1 plastics are made from PET (polyethylene terephthalate) which is physically hazardous to one's health because it leaches a hormone-disrupting chemical called BPA. This is nonsense! PET is not made with BPA! Polycarbonate plastics, labeled as #7, can leach BPA, but the amounts with the possible exception of heated baby bottles, are trivial.

In fact, polycarbonate bottles are more environmentally friendly because they are not disposable. Single-use PET water bottles have been a marketer's dream, but an environmentalist's nightmare. What a brilliant idea to convince people to buy something they don't need, and create a multibillion

dollar industry! Never mind that the process uses petroleum resources unnecessarily, and that most of the bottles end up in landfills. A crime.

And the elderberry wine question? Well, it highlights the atmosphere of fear that permeates our lives. A lady became concerned when she saw her neighbor spill some elderberry wine he had fermented in his back yard. Why? Because the elderberries had been picked from a bush in a cemetery where the soil may have become contaminated with the chemicals used to embalm corpses. Could these toxins possibly contaminate her vegetable garden, the anxious caller wanted to know? No. I think we can safely lay this fear to rest.

While most of the scary stories about our living in a "chemical soup" are greatly exaggerated, the stress they cause is very real. As a result, people have become so scared of dying that they forget about living. And if worrying about trace amounts of chemicals being released from shower curtains makes headline news, then living today is pretty good, isn't it? So just take a deep breath and relax. And if you are worried about the trillions of molecules of diverse chemicals you just inhaled, go and take a warm calming shower. Just don't forget to use a mat. That would present a real risk. And don't worry about any phantom risk if the mat is made of PVC.

Dr. Joe Schwarcz is Director of the McGill University Office for Science and Society.

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