Are soft vinyl baby toys and medical products safe or should they be banned? Rival groups on opposite sides of this question have recently issued numerous reports denouncing each other and attacking the motives, methods, integrity, and conclusions of their opponents. How can we know whom to believe or what to do?

At stake in this controversy is a wide range of useful products ranging from medical IV bags, catheters, disposable gloves, and surgical equipment, to squeezable children’s toys, baby bottles, rattles, and teething rings. What these things have in common is that they are made of polyvinyl chloride (PVC) softened with phthalate (pronounced “thalate”) plasticizers. There are many phthalates, but the two most common are di (2-ethyl-hexyl) phthalate (DEHP)—found generally in medical devices—and diisononyl phthalate (DINP), which is used primarily in baby toys. These compounds can make up as much as half the weight of some soft vinyls. Because plasticizers don’t bind chemically to the polymer, they can diffuse out of the final product under the right conditions.

Both DEHP and DINP are known to be toxic at high doses to laboratory animals, having been linked to a variety of illnesses including reproductive abnormalities as well as kidney and liver damage and possibly some cancers. In addition, these phthalates are known to disrupt important endocrine hormone functions in laboratory animals. The question is whether high enough levels of plasticizers are likely to leech out of PVC products to be dangerous.

According to the U.S. Consumer Product Safety Commission, there is little to fear. “Based on scientific studies currently available,” they reported, “the staff concludes that few, if any, children are at risk from liver or other organ toxicity from the release of DINP from these products. This is because the amount they might ingest does not reach a level that would be harmful.” They also suggested, however, that we should “continue to work on better estimates of the amount of phthalate released when products are mouthed by children.”

Not everyone agrees that phthalates are safe. A group of American health workers and environmentalists calling themselves Health Care Without Harm (HCWH) claim soft PVC in medical products and children’s toys represents an unacceptable and unnecessary risk. They argue that the “precautionary principle” says that we shouldn’t be exposed to toxic chemicals in consumer products and that the burden of proof of harmlessness lies with manufacturers, not the general public. In 1999, the European Union banned all sales of soft PVC toys.

“Nonsense,” says former Surgeon General C. Everett Koop. “This is just the latest phony chemical scare. . . The ceaseless obsession with ousting the frequently nonexistent bogeymen from our chemical cornucopia does quite a lot to strengthen the ranks of consumer groups but very little to actually improve the health and quality of our lives. And while it provides television newsmagazines with a well-worn story line, it ultimately diverts our attention from real opportunities to enhance life and longevity. . . Highly inflammatory scare campaigns and dubious news stories have unnecessarily frightened families into believing their baby’s teething rings and vinyl toys were conduits of cancer-causing chemicals. A distinguished panel of 17 scientists and physicians, under my chairmanship, concluded that the chemicals DINP and DEHP used to make toys and medical devices soft and flexible, are safe and pose no harm to adults or children.”

HCWH, on the other hand, led by the environmental group Greenpeace, charges that Koop’s “blue ribbon” panel of experts, which was funded primarily by the chemical industry, rejected important scientific studies and ignored safe, cost-competitive substitutes for every current soft PVC product. HCWH claims that the chlorine industry is trying to bog down the debate in a “dueling risk assessment strategy perfected long ago by the tobacco industry.” Although they acknowledge being considered “on
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the fringe” by some mainstream environmental groups, HCWH points out that a number of products such as asbestos, tobacco, DDT, and tetraethyl lead were promoted by industry as perfectly safe but subsequently turned out to be quite dangerous.

Consumer pressure and fears of lawsuits have lead many manufacturers to quickly pull soft PVC products—especially baby toys and teethers—off store shelves. Most soft plastics in stores today are polyethylene or polypropylene, which do not contain plasticizers. What do you think of this debate? Are manufacturers caving in to mass hysteria, or should they have known better than to expose us to soft PVC in the first place? How would you evaluate the claims of the various sides of this argument? Can you think of reasons that one side or the other might be trying to mislead you? What additional information would you need to make an informed judgment about the safety of soft PVC?