

## **Breast Cancer and the Environment: Science News from Silent Spring Institute**

### **Floor Finish May Be Source of Banned PCBs**

**March 2008**

You may think once a chemical is banned from use, you no longer need to worry about being exposed. A new study by the Silent Spring Institute may make you think again. Researchers found high levels of now-banned PCBs in the homes and blood of some Cape Cod residents. The likely culprit? A wood floor finish applied half a century ago.

PCBs (polychlorinated biphenyls) are toxic industrial chemicals that were widely used in electrical equipment before being banned in 1977. They have been linked with a host of health problems including effects on brain development, thyroid function, and cancer. Four studies found that women with both high PCB exposure and a genetic variation that affects how their bodies process chemicals have three times higher breast cancer risk than women who don't have this combination of factors.

When Silent Spring Institute researchers discovered PCBs in nearly one-third of 120 Cape Cod homes, and alarmingly high levels in two of the homes, they knew they needed to look for the source so residents could reduce their exposures. The research team retested air and dust in the homes with very high levels and collected blood samples from the residents. Air and dust levels remained high five years after the first test. In addition, blood levels were higher than 95% of a representative sample of the US population, and one resident had higher blood levels than any reported in the US Centers for Disease Control's National Health and Nutrition Examination Survey.

The likely source of PCBs was discovered during interviews with study participants when one resident recalled using the hardwood floor and bowling alley finish Fabulon. Searches in an old reference text showed that Fabulon, popular in the 1950s and 1960s, contained PCBs until they were removed in 1969.

Much of the estimated 1.5 billion pounds of PCBs produced lingers in the environment, slowly breaking down. Because PCBs move up the food chain and accumulate in fat, eating fish from contaminated waters and fatty meat and dairy foods is thought to be the most common source of human exposure. Indoor sources such as paints, caulk, and flooring used in schools and other buildings can also be important, new studies show. "Our findings suggest that the exposure potential posed by historic use of PCBs in buildings may be significantly underestimated," said Ruthann Rudel, lead study researcher.

If you suspect a floor was finished with Fabulon, don't sand it; that could increase exposure. Using a vacuum with strong suction, a brush on/off switch, a multi-layered bag for dust collection and a HEPA filter should help reduce exposure to PCBs and other harmful chemicals in house dust. Consumer Reports rates vacuums for how well they get rid of dust.

Silent Spring Institute Executive Director Julia Brody noted, "This study is a lesson in the dangers of putting untested chemicals into consumer products. Once they're out there, we can't easily get rid of them."

The study appeared in the January 17 issue of *Environmental Health*. It was funded by the Commonwealth of Massachusetts and National Institutes of Health. To learn more about the study, visit the Silent Spring Institute website: [www.silentspring.org/newweb/research/household\\_pcbs.html](http://www.silentspring.org/newweb/research/household_pcbs.html)

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