

Flame Retardants, the Environment, and Your Health: Draft Podcast Script

Narrator: Flame retardant chemicals are frequently added to consumer products, such as upholstered furniture, plastic casings for electronics, carpet padding, fabrics, and children's products, to meet flammability standards. One of the common classes of chemicals that are used as flame retardants are known as polybrominated diphenyl ethers or PBDEs.

While these chemicals are intended to keep people safer in the event of a fire, many of the flame retardants that have been used in the past are now known to persist in the environment and may cause health problems, particularly in children.

Pam Miller is a biologist and co-chair of the International Persistent Organic Pollutants Eliminations Network. As a renowned expert on persistent toxic chemicals and a prominent voice of chemical reform, Miller works as a researcher, educator, and champion to protect environmental and human health.

Miller: [8:46 – 9:14] “There are a wide variety of health concerns about these chemicals. A lot of studies now show that, for instance, the polybrominated diphenyl ether chemicals are associated with harm to children's brain development and these effects can include things such as loss of IQ, problems with verbal comprehension, motor coordination, attention, [9:28 – 9:40] and scientists have also found that PBDEs disrupt hormones in the body that are essential for normal brain development, and may affect the developing brain in many other ways well.”

Narrator: Miller says that people are often exposed to these chemicals in house dust when they leach out of consumer products in the home. But people can be exposed in other ways as well since flame retardants can be released into the environment.

Miller: [10:18 – 10:23] “Chemicals such as the polybrominated diphenyl ethers and other flame retardants [8:12 – 8:35] are added but not chemically bound to the foam or the plastic, so they can leach out into the indoor environment, and then when they're disposed they can also leach out and contaminate waters and biota and people downstream from these waste sites.”

Narrator: Flame retardants like PBDEs can be carried incredibly long distances on wind and ocean currents away from the places where they are used, manufactured, and disposed. In fact, they tend to travel to northern and Arctic environments where they eventually settle out and bioaccumulate in the bodies of fish, wildlife, and eventually people. Because of this process, called global distillation, people who live in the Arctic tend to have greater exposure than people living in lower latitudes to persistent organic pollutants like PBDE flame retardants.

Inspired by Yupik elder and community activist Annie Alowa, Miller founded the Alaska Community Action on Toxics to work with Arctic Indigenous communities to address environmental health concerns related to flame retardant chemicals.

Miller: [12:02 – 12:16] “Because Arctic Indigenous peoples are closely reliant on traditional foods, such as fish and marine mammals, for their physical, spiritual, and cultural sustenance, [10:54 – 11:03] Arctic

Indigenous people have some of the highest levels of some of these persistent organic pollutants of any population on earth.”

Narrator: Arctic communities are concerned that persistent pollutants contaminating traditional diets, combined with other environmental health concerns such as a nearby abandoned military base and air pollution from Asia and North America, may be contributing to complex local health problems. These include high incidences of cancer, thyroid disease, and developmental disorders in children.

To address these concerns, the Alaska Community Action on Toxics established a community-based participatory research project in collaboration with two Yupik villages on St. Lawrence Island.

Miller: [14:36 – 14:47] “We hire local people as community health researchers, and the community leadership really guides every aspect of the research and outreach activities.”

[16:13 – 16:24] “The community-based research is conducting science, but we’re also working to educate and empower community members to plan and participate in public health actions, [16:27 - 16:29] and reduce environmental health risks.”

Narrator: Miller explains that people have a fundamental right to research results so that they can make informed decisions in their own homes and so that they can work together to inform health-protective policy change based on the science they have contributed to.

Miller: [17:02 – 17:23] “We’ve had some significant research findings that we’ve published in the peer reviewed literature, but I think most importantly the information that we’ve been able to provide to the community has empowered them. It’s given them information so that they can make their own informed decisions, as well as participate at the table where decisions are being made [17:26 – 17:34] about state and federal and international actions to reduce and eliminate some of these chemicals in the environment.”

Narrator: By promoting partnerships among community residents, researchers and decision makers, Miller and the people of St. Lawrence Island have been successful in communicating environmental health concerns and helping to inform decision making from the local level to the international level. For example, at the state level they provided information for a law that would ban certain flame retardants from children’s products and furniture; and at the national level the community partners helped to get protection of vulnerable populations included into the Toxic Substances Control Act.

Miller: [26:28–26:30] “We’ve also been very instrumental [25:54–26:15] at the international level to ensure the presence and participation of Arctic Indigenous peoples in decisions and science about the effects of persistent organic pollutants in the arctic. And this has led to global bans on some of the world’s most dangerous chemicals that are now ubiquitous in the Arctic.”

Narrator: Miller notes, that while policy-level change must be done collectively with evidence based-science and effective communication with decision makers, there are still steps individuals can take to reduce exposure to flame retardant chemicals in their homes.

Miller: [26:57 – 27:00] “Ultimately there’s a lot that we need to do together, [27:02 – 27:16] to get these chemicals out of products. But individually we recommend that people wash their hands and their children’s hands very frequently, because these chemicals do adhere to household dust. [27:28 – 27:42]

And so we can reduce our exposure by reducing the dust in our homes by wet mopping and vacuuming with a HEPA filter can reduce household dust and therefore reduce contact with contaminated dust.”

Narrator: You can learn more about flame retardants and explore how environmental exposures affect our health, by visiting our website at niehs.nih.gov/podcasts.

Thanks to today’s guest Pam Miller for joining us.

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