FELINE HYPERTHYROIDISM

Flame Retardant Chemicals Linked to Graves' Disease in Cats

© Elaine Moore

A recent EPA study shows that the chemicals known as PBDEs used as flame retardants in furniture and carpets cause hyperthyroidism in cats and have implications beyond those found in our pets.

Flame Retardants

Can your sofa be causing Graves' disease and hyperthyroidism in your cat? A report published in Environmental Science & Technology, a publication of the American Chemical Society, suggests that many cases of feline hyperthyroidism are associated with exposure to environmental contaminants called polybrominated diphenyl ethers (PBDEs), which are present in flame retardants.

The study from which the report was based, was conducted jointly by researchers at the EPA's National Health and Environmental Effects Laboratory and Indiana University. In the study, which involved 23 pet cats with feline hyperthyroidism, PDBE blood levels were three times as high as those in younger, non-hyperthyroid cats. Ideally, PBDE and related endocrine disruptors that seriously damage health would not be present in the blood of any animals or humans. Sadly, this isn't the case.

Early Concerns

PBDEs were first introduced about 30 years ago as a fire-prevention measure. PBDE is present in household dust from contaminated carpet padding, polyurethane foams, furniture and mattresses. PBDE has become so ubiquitous that it’s even present in canned cat foods made of fish and seafood. Like most industrial chemicals, their effects on health weren’t well studied before their introduction. Concerns regarding the safety of PBDEs were first raised in the late 1990s with studies suggesting that PBDEs cause liver and nerve toxicity in animals.

By the late 1990s North America accounted for nearly half of the global demand for PBDEs from commercial materials, which were mandated by law. The epidemic of feline hyperthyroidism began almost 30 years ago, paralleling the introduction of PBDEs. Early cases were first noted in the United States. Since then, other cases have been diagnosed in Canada, Australia, Japan, and many parts of Europe.

Why are Cats at Risk?

Cats are primarily indoor animals and research suggests that their exposure to household toxins is similar to that experienced by a 2 year old child. In many ways, cats can be
considered like the proverbial canaries guarding the mines from dangerously high levels of airborne toxins. And like these canaries, our cats are forced to suffer and die to get the message across.

Because of their meticulous grooming habits, cats ingest PBDE in the dust that coats their fur. Cats are also small animals with a small blood volume. A moderate dose of PBDE dissolved within the blood volume of a cat results in toxic levels faster than it would in a larger animal. Because PBDE, like many toxic pesticides, is an endocrine disruptor it interferes with the normal production and metabolism of thyroid hormone, resulting in hyperthyroidism.

Similar to other endocrine disruptors, PBDE is linked to results in other manifestations including malignancies and birth defects. Ongoing studies are beginning to also show an association between endocrine disruptors and autism in children.

Efforts to Ban PBDEs

In Sacramento, biochemist Arlene Blum was involved with the chemical tests that led to the ban on TRIS thirty years ago. TRIS was a fire retardant applied to children’s clothing, particularly pajamas before its adverse effects on health were discovered. Today Arlene is working to abolish outdated California regulations that allow for the manufacture of PBDEs. Her 15-year old cat Midnight suffers from feline hyperthyroidism directly caused by high levels of PBDE. Midnight has lost half of his body weight and is now fighting hyperthyroidism related kidney problems. The nation’s health is in the hands of the California Legislature. See more information on the MomsRising.org website.

Resources
