

Surprising Link Between Your House and Your Cat's Thyroid

Researchers have linked this common substance to hyperthyroidism in cats. And you probably have it in your house. In fact, it's probably in multiple places in your home. Here are some simple ways to avoid it.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- Another study was published linking flame retardants, specifically polybrominated diphenyl ethers (PBDEs), to hyperthyroidism in cats. Cats with the disease have higher blood levels of PBDEs than cats with normal thyroid function
- Consumer products containing PDBEs are found in most homes, offices, and automobiles, but there are steps you can take to minimize exposure for you and your cat
- Other sources of PBDEs are canned cat food and house dust. One study indicates housecats are primarily exposed to flame retardant chemicals by ingesting house dust
- You can help prevent hyperthyroidism in your cat by eliminating PBDEs from your environment and feeding your kitty an unprocessed diet that does not contain either fish or soy products
- If you suspect your kitty might have a problem with her thyroid, make an appointment with your veterinarian as soon as possible

Editor's Note: This article is a reprint. It was originally published August 13, 2015.

More research has come to light linking flame retardants to hyperthyroidism in cats. The latest study was published this past March in the journal Environmental Science & Technology.¹

The researchers analyzed the blood from 60 pet cats for the presence of flame retardant chemicals, specifically decabromodiphenyl (BB-209), polybrominated diphenyl ethers (PBDEs), hydroxylated PBDEs (OH-PBDEs), and 2,4,6-TBP. The research team wanted to study the differences in the levels of these chemicals in healthy and sick cats diagnosed with hyperthyroidism.

Of the 60 cats, 23 had normal thyroid function and 37 were hyperthyroid. The study results showed that the hyperthyroid cats had higher blood levels of PBDEs on a fat weight basis.

The same team of Swedish researchers also published a study in 2012 that showed serum PBDE levels in Swedish cats were about 50 times higher than in the Swedish human population.²

A 2007 study revealed that PBDE levels in U.S. cats were 20- to 100-fold greater than median levels in U.S. adults.³ A 2012 California study demonstrated that PDBE levels in cats in that state were approximately 50 times higher than levels in California residents, who have among the highest human levels in the world.⁴ (California furniture

manufacturers were required by law to inject flame-retardant chemicals into all upholstered furniture sold in the state.)

Hyperthyroidism Is a Significant Problem for Older Cats

Over 10% of kitties age 10 and older are diagnosed with hyperthyroidism, making it the most common endocrine disorder of pet cats.

About half of cats with hyperthyroidism have an increase in appetite, but also ultimately suffer weight loss because too much circulating thyroid hormone increases metabolism. Other symptoms include high blood pressure, frequent vomiting, increased body temperature, heart and respiration rates, and hyperactivity.

A combination of increased appetite, weight loss, and sudden, unexpected bursts of energy in an older cat is a red flag for hyperthyroidism. If you suspect your kitty might have a problem with her thyroid, make an appointment with your veterinarian as soon as possible. The disorder can be diagnosed with a simple blood test.

Products Containing PBDEs

Polybrominated diphenyl ethers (PBDEs) are one of five major brominated flame retardants (BFRs) added to consumer products since the 1970s to reduce injuries and property damage from fires. Items around your home and office that may contain PBDEs include:

- Polyurethane foam products — upholstered furniture, mattresses, pillows, and pet beds
- Computers, printers, copiers, scanners, and faxes
- Carpet padding
- Toner cartridges
- Vehicle seat covers
- TVs and TV remote controls
- Kitchen appliances
- Video equipment
- Fans
- Blow dryers
- Water heaters
- Cell phones

PBDEs leak from products when, for example, a TV or computer heats up during use, when a mattress is slept on, or when products containing the compounds begin to deteriorate.

Minimizing PDBE Exposure

Most new foam products are not likely to have PBDEs added. If you have foam items in your home, office or vehicle that were purchased before 2005, however, they probably contain PBDEs.

The **Environmental Working Group** offers the following tips to help limit your family's and pet's exposure to PBDE-containing products:

- Exercise caution with foam items. Replace any item in which the foam is exposed or misshapen (an indicator the foam is breaking down and releasing toxic compounds into the environment)
- Use only vacuums with HEPA filters, which are better at trapping small dust particles and are more efficient at removing contaminants and allergens from your home or office. The same principle applies to indoor air cleaners with HEPA filters
- Replace rather than reupholster foam furniture. Even PBDE-free furniture can contain other types of fire retardants with harmful effects
- Remove old carpet with care. The padding beneath may contain PBDEs
- When buying a new product, ask what type of fire retardant it contains. Try to avoid purchasing items containing PBDEs. Go with less flammable materials, for example, cotton, wool, and leather. Keep in mind that 'natural' latex foam and natural cotton are flammable and by law require the addition of a fire retardant

Other Sources of PBDEs — Canned Cat Food and House Dust

A study conducted at the University of Illinois also investigated the role of PBDEs in the development of hyperthyroidism in cats.⁵

The researchers evaluated the canned food diets and environment (specifically, house dust) in hyperthyroid cats, as well as cats with normal thyroid function. A small number of feral cats were also used in the study. The goals of the study were to:

- Discover whether toxin loads in the blood of same age cats correlated with thyroid dysfunction in the hyperthyroid cats
- Determine whether the PBDE content of canned cat foods or house dust posed the greater risk
- Establish a link, if one exists, between blood PBDE levels, environmental or nutritional PBDE exposure, and thyroid function

The study results showed that blood PBDE concentrations in the cats with normal thyroids were not all that different from those of hyperthyroid kitties. Not surprisingly, concentrations were much lower in feral cats than in either of the groups of pet cats, since they are rarely if ever exposed to canned food or house dust.

Total PBDEs in canned cat food had a range of 0.42 to 3.1 ng/g. In house dust, the range was much higher at 510 to 95,000 ng/g.

The level of PBDEs in the dust of homes of cats with normal thyroids was from 510 to 4,900 ng/g, while the level in the homes of hyperthyroid cats ranged from 1,100 to 95,000 ng/g — a great deal higher. In addition, the level of dust PBDEs was closely linked to serum total blood T4 concentrations. Dust PBDEs and serum total T4 concentrations were also significantly related. (Greater than normal levels of the thyroid hormone thyroxine, or T4, in the blood signify an overactive thyroid.)

These study results indicate housecats are primarily exposed to flame retardant chemicals by ingesting house dust — which of course occurs every time they groom themselves.

Preventing Hyperthyroidism in Your Kitty

- Rid your environment of flame retardant chemicals.
- Provide an organic pet bed.
- Feed a balanced, preferably raw, species-appropriate diet. This way you can stop worrying about the iodine content in processed cat food, which has also been linked to hyperthyroidism. If you prepare a balanced, homemade diet for your cat you have complete control over iodine levels in your pet's food.
- Avoid feeding your cat a fish-based diet. Seafood is a very rich source of iodine, but cats aren't designed to process a lot of iodine.
- Also avoid feeding soy products to your kitty, as they have been linked to thyroid damage.

It’s also recommended to check your cat's thyroid levels annually after the age of 10.

Sources and References

[MedicineNet, May 1, 2015 \(Archived\)](#)

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² [Arch Environ Contam Toxicol. 2012 Jul;63\(1\):161-8](#)

³ [Environ Sci Technol. 2007 Sep 15;41\(18\):6350-6](#)

⁴ [Environ Toxicol Chem. 2012 Feb;31\(2\):301-6](#)

⁵ [J Toxicol Environ Health A. 2012;75\(4\):201-12](#)
