

## The Tricky Disease That Affects 95% of Cats Over 10

Now at epidemic levels, this disease is easy to spot because of its distinct symptoms, even though it can be challenging for your veterinarian to diagnose. Make sure your vet uses this test for a clear diagnosis & monitoring, as its treatment may require delicate balance to protect kidney function.

**Analysis by Dr. Karen Shaw Becker**

### STORY AT-A-GLANCE

- Hyperthyroidism is extremely common in U.S. cats, especially in kitties over the age of 10
- Symptoms include increased appetite, hypertension, frequent vomiting, and hyperactivity
- Potential causes of the disease include exposure to endocrine disrupting chemicals, including household products, flame retardant chemicals found in house dust and in fish-flavored cat food as well
- It's very important that veterinarians run a comprehensive set of thyroid blood tests in cats suspected of being hyperthyroid
- Early detection of this disease is important in order to take advantage of natural thyroid balancing protocols vs. surgery, drugs, or another approach that carries side effects

If you're a cat parent, you may be aware that feline hyperthyroidism is an epidemic in the U.S. It's the most diagnosed endocrine disorder in domestic cats, especially senior kitties. In fact, 95% of cats with hyperthyroid disease are 10 years or older.<sup>1</sup>

Hyperthyroidism is typically caused by a benign tumor (adenoma) on the thyroid gland — a butterfly-shaped gland at the base of the throat — that causes overproduction of thyroid hormone. This hormone regulates metabolism, heart rate, and digestive function.

When the gland overproduces thyroid hormone, the result is hyperthyroidism. Excessive production of thyroid hormone can cause serious, even life-threatening symptoms in feline family members.

### Recognizing the Symptoms

About half of all cats who develop hyperthyroidism have an increased appetite, but paradoxically, about 90% end up losing weight because a side effect of excessive thyroid hormone levels is an increase in metabolism. Other symptoms of hyperthyroidism include:

- High blood pressure
- Frequent vomiting
- Increased body temperature, heart and respiration rates (due to the up regulation of metabolic processes)
- Hyperactivity

- Eye problems in undiagnosed/untreated cases

A combination of increased appetite, weight loss and sudden, unexpected bursts of energy in an older cat is a definite sign he or she may have an overactive thyroid. It's important to make an appointment with your veterinarian as soon as possible.

## Potential Causes of Feline Hyperthyroidism

Exposure to flame retardant chemicals (polybrominated diphenyl ethers, or PBDEs) has been linked to the development of hyperthyroidism in cats. PBDEs are recognized endocrine and thyroid disruptors.

In a 2015 study, researchers analyzed the blood from 60 pet cats for the presence of flame retardant chemicals. The objective of the study was to evaluate the differences in the levels of chemicals in healthy cats vs. cats diagnosed with hyperthyroidism. Of the 60 cats in the study, 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.

Another earlier study suggested that flame retardant chemicals in house dust are linked to thyroid disease in cats. The study authors concluded that cats are primarily exposed through the ingestion of house dust — which occurs when they groom themselves.<sup>2</sup>

Housecats seem to have extraordinary exposure to PBDEs. In 2012, Swedish researchers demonstrated that serum PBDE levels in Swedish cats were about 50 times higher than in the Swedish human population,<sup>3</sup> and a 2007 study showed that PBDE levels in U.S. cats were 20 to 100-fold greater than median levels in U.S. adults.<sup>4</sup>

A more recent study sheds even more light on the connection between flame retardant compounds and feline hyperthyroidism, suggesting that fish-flavored cat food could be a culprit.<sup>5</sup> Scientists evaluated cat food and feline blood samples and discovered that the type of polychlorinated biphenyl (PCB) and PBDE byproducts found in both the food and blood samples are derived from marine organisms.

The researchers were also able to simulate the way in which the bodies of cats convert the type of chemical present in the food into the type of chemical seen in the cats' blood samples.

Based on their results, the team concluded that the byproducts detected at high levels in cats' blood samples likely came from fish flavored cat food and not exposure to PCBs or PBDEs. However, further work is needed to determine the link between the metabolites (byproducts) and hyperthyroidism.

The pet food industry still treats cats as small dogs in many regards, including the American (AAFCO) and European (FEDIAF) minimum daily iodine requirements for cats. Dogs are prone to hypothyroidism, and have a high iodine requirement compared to cats, who conserve iodine and don't need nearly as much supplemented in their food.

Unfortunately, pet food companies are required to add iodine in more-than-necessary amounts for cats, so when combined with fish or seafood-based recipes (which are naturally high in iodine), can contribute to the problem.

When making homemade cat food, I recommend not adding any additional sources of iodine for adult and senior cats and choosing foods that have been formulated to include the lowest possible amount of iodine: 0.15mg/kcal (AAFCO).

Reducing endocrine-disrupting chemical exposure is also important, so don't store your cat's food, treats or supplements in plastic containers, and switch to **natural or environmentally friendly cleaning supplies**.

## Recommendations for Thyroid Testing in Cats

According to Dr. Jean Dodds, an expert on thyroid disease in animals, one of the problems in diagnosing pets with thyroid disease is the use of standard laboratory reference ranges. There's just one reference range for cats, no matter their age, which makes little sense since we know from scientific studies that age affects thyroid levels.

Veterinarians typically run a number of blood tests during wellness exams for their patients, one of which is a total T4 (thyroxine) test. However, the results of this thyroid function test can be very misleading, because total T4 is affected by non-thyroid-related illnesses, a wide variety of drugs, and excessive iodine in the diet.

Some vets treat patients based on just the T4 value, when it may or may not be appropriate. Dr. Dodds feels that to accurately diagnose thyroid conditions, we should be running a complete thyroid antibody profile. And vets should explain to clients up front that while the test is more expensive than a T4, it will also tell us what we can rule in or out.

As part of a complete thyroid antibody profile, Dr. Dodds recommends total and free T4, and total and free T3. Many in the veterinary community believe it's useless to measure total and free T3, but she strongly disagrees.

The T3 values are necessary because in the case of a sick animal who has low levels in all four measures, it's much more likely to be a non-thyroid-related illness. Total T3 and free T3 are the markers that indicate a non-thyroidal condition.

Dr. Dodds also includes a TSH (thyroid-stimulating hormone) test for certain cats, in particular older kitties who've been treated for hyperthyroidism, often with radioactive iodine therapy. These cats have a tendency to become hypothyroid (not enough circulating thyroid hormone) within about 2 to 5 months because the gland is no longer working.

Dr. Dodds believes the way to monitor hypothyroidism in these cats is with the TSH test because it's very helpful in regulating doses of added T4 and T3 hormones to bring kitties back to a state of metabolic balance, returning to their pre-hyperthyroid condition.

Dr. Dodds and other **veterinary endocrinologists** she has collaborated with have conclusively decided that it is TSH that should be monitored in cats who have become iatrogenically hypothyroid (meaning the condition was induced unintentionally by a diagnostic procedure or medical treatment).

The TSH test is also important for cats with chronic kidney disease (CKD), because CKD can affect T4 levels, lowering them into the upper limit of the normal range. TSH has proved to be the most predictive test of hyperthyroidism in cats with chronic kidney disease.

Dr. Dodds also points out that suppressing the thyroid in cats with kidney failure can worsen renal (kidney) tissue profusion, so we must be very careful treating these kitties. Some actually do better being slightly hyperthyroid when they have renal disease.

## Treatment Recommendations

If it's early enough in the development of the disease, I like to start with natural therapies that avoid many of the risks and side effects associated with more traditional approaches. It's important to catch the disease early, which is why I begin monitoring cats' thyroid levels at age 7. If there's a slow but consistent increase in thyroid levels, I begin natural thyroid balancing protocols immediately.

There are many natural remedies that can be beneficial in managing your cat's condition if it's caught early. These include homeopathic remedies, acupuncture, herbal remedies (Eastern, Western and Ayurvedic) and nutraceuticals.

My second choice when a natural approach is ineffective is thyroidectomy, which is the surgical removal of the benign tumor from your cat's thyroid gland. This operation should only be performed by a skilled soft tissue surgeon who has performed many of these procedures. Successfully done, thyroidectomy cures the patient, which is the ultimate positive outcome.

Radioactive iodine therapy is another option, but the expense often prevents people from choosing this treatment. An alternative is medical management of the disease, which means putting the kitty on a medication called methimazole, which inhibits thyroid hormone production so the amount of circulating hormone is reduced.

There can be lots of side effects of methimazole, including gastrointestinal (GI) upsets that cause vomiting; however, I've had some success avoiding GI problems by using a compounded transdermal methimazole ointment applied inside the cat's ear.

Occasionally, a patient will develop an almost immediate allergic response to the drug in the form of an intense facial itch that comes on after the first pill is administered. This reaction means the drug cannot be continued and another treatment option is needed.

Other side effects, which are fortunately rare, include decreased platelets and increased liver enzymes. The downside to medical management is that cats must take methimazole for the rest of their lives, and blood levels must be routinely monitored.

And since hyperthyroidism is known to mask kidney problems in cats, it's important for veterinarians to monitor not only thyroid hormone levels but also kidney function in kitties taking methimazole.

I always start holistic kidney support via herbal and nutritional supplementation when the diagnosis of feline hyperthyroidism is made. This is also an excellent time to work with a homeopathic veterinarian.

## Recommendations for Helping Your Cat Avoid Hyperthyroidism

- Feed a nutritionally optimal, fresh, species-specific diet that has been formulated with no added iodine, and never feed your cat dog food
- Do not use supplements that contain sources of iodine (kelp, dulse, seaweed powders, etc.)
- Don't buy canned food that is not labeled BPA-free and don't store cat food in plastic containers
- Avoid feeding your cat a fish-based diet, or any food containing soy products
- Rid your environment of flame-retardant chemicals and chemical cleaning supplies

- Provide your cat with an organic pet bed
- Purchase a high-quality air purifier for your cat's environment

## Sources and References

<sup>1</sup> [The News-Gazette, October 23, 2018](#)

<sup>2</sup> [Journal of Toxicology and Environmental Health A, 2012;75\(4\):201-12](#)

<sup>3</sup> [Archives of Environmental Contamination and Toxicology, July 2012, \(63\)1, pp 161-168](#)

<sup>4</sup> [Environmental Science & Technology, September 15, 2007, \(41\)18, pp 6350-6356](#)

<sup>5</sup> [Environmental Science & Technology, 2016, 50 \(1\), pp 444-452](#)

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