

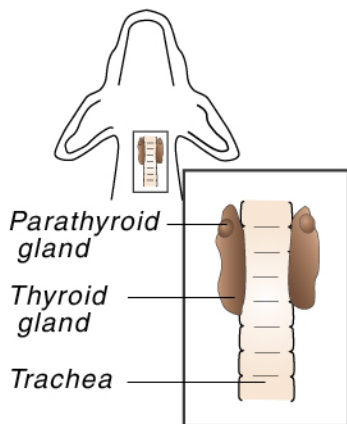
# HYPOTHYROIDISM

Dr. Ron Beatty  
My Pet's Vet

## ***What is the thyroid gland and what does it do?***

The thyroid gland is one of the most important glands in the body. It is located in the neck near the trachea or “windpipe” and has two lobes, one on each side of the trachea.

The thyroid gland regulates the body's metabolic rate. Metabolic rate can be compared to the idle of a car engine. If a car or a person is at rest there is a normal idle or metabolic rate. If the thyroid is overactive (*hyperthyroidism*), the body's metabolism is elevated. This would be like pressing on the gas and racing the engine while the car is in park. If the thyroid is underactive (*hypothyroidism*), metabolism slows down. In this case a car engine would run slow and rough and not respond well.



## ***What causes hypothyroidism?***

Hypothyroidism is usually caused by one of two diseases: *lymphocytic thyroiditis* or *idiopathic thyroid gland atrophy*. The former disease is the most common cause of hypothyroidism and is thought to be an immune-mediated disease. This means that the immune system decides that the thyroid is abnormal or foreign and attacks it. It is unclear why this occurs. In idiopathic thyroid gland atrophy normal thyroid tissue is replaced by fat tissue. This condition is also poorly understood.

These two causes of hypothyroidism account for more than 95% of the cases in dogs. The other five percent are due to rare diseases, including cancer of the thyroid gland.

## ***What are the clinical signs?***

When the metabolic rate slows down, virtually every organ in the body potentially can be affected. Dogs with hypothyroidism cannot be diagnosed on physical signs alone. I have diagnosed dogs with hypothyroidism (and other treatable diseases) on routine geriatric blood work that I did not expect to be hypothyroid. *Some* dogs may have one or more of the following symptoms:

- Weight gain without an increase in appetite
- Lethargy and lack of desire to exercise
- Cold intolerance (gets cold easily)
- Dry, dull hair with excessive shedding and flaking
- Very thin to nearly bald hair
- Increased dark pigmentation in the skin
- Increased susceptibility and occurrence of skin and ear infections
- Failure to re-grow hair after clipping or shaving
- High blood cholesterol

Some dogs also have other abnormalities such as:

- Thickening of the facial skin so they have a "tragic facial expression"  
Abnormal function of nerves causing non-painful lameness, dragging of feet, lack of coordination, and a head tilt
- Loss of libido and infertility in intact males
- Lack of heat periods, infertility, and abortion in females
- Fat deposits in the corneas of the eyes
- Keratoconjunctivitis sicca (KCS) or "dry eye" due to lack of proper tear production

### ***How is it diagnosed?***

The initial screening test is a Total Thyroxin (TT<sub>4</sub>) level. This is a measurement of the main thyroid hormone in a blood sample. If it is low to below normal and clinical signs are present, this is suggestive of hypothyroidism. Often, the Thyroxin level comes back as normal even if a dog is truly hypothyroid. So, diagnosis is not always straight forward. If the first test comes back normal, but a dog has signs of hypothyroidism, a definitive diagnosis can be made by performing additional blood work: free T<sub>4</sub> by Equilibrium Dialysis (Free T<sub>4</sub> by ED) along with other special thyroid tests.

### ***Can it be treated?***

Hypothyroidism is treatable but not curable. It is treated with oral administration of thyroid replacement hormone. This drug must be given for the rest of the dog's life. Fortunately, the medication is inexpensive and pretty much side-effect free. Dogs on this hormone *must* be periodically monitored by testing their Thyroxin level.

### ***How is the proper dose determined?***

There is a standard dose that is used initially based on the dog's weight. After one month of treatment, further testing is done to verify that the thyroid hormone levels are normal. Later, TT<sub>4</sub> levels are checked every six months on your pet. Close communication with your veterinarian is necessary in order to ensure that your dog is neither over nor under-dosed.

### ***What happens if the medication is overdosed?***

Signs of hyperthyroidism can result. These include hyperactivity, lack of sleep, weight loss, and an increase in water consumption. This is why the periodic Thyroxin monitoring is required.

### **About Dr. Beatty:**

Dr. Beatty graduated from the University of Wisconsin Madison [School of Veterinary Medicine](#) in 2001. Veterinary school is just as difficult to enter and is equally as challenging as medical school. He focused on exotic pets as well as cats and dogs. In order to properly care for pets his education never stops. Dr. Beatty regularly attends [continuing education](#) events so he can learn new medical and surgical skills to benefit our patients.

Since graduation he has worked in the greater Milwaukee area. He enjoys seeing all companion animals-dogs, cats, birds, reptiles, rabbits, ferrets,



chinchillas, guinea pigs, sugar gliders and other small mammals. His clients especially appreciate his gentle nature with their pets. Dr. Beatty is still amazed by the deep bond that people share with pets. One of his greatest joys in life is to care for animals.

In his free time, Dr. Beatty enjoys gardening, home handyman projects, going to the Menomonee Falls dog park, and reading.

Dr. Beatty care for Golden Retrievers in Mequon, Wisconsin.

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