



HYPOTHYROIDISM

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 (windpipe) and has two lobes, one on each side of the trachea. This gland is controlled by the pituitary gland, which is located at the base of the brain.

The thyroid gland regulates the body's metabolic rate. If the thyroid is overactive (hyperthyroidism) the body's metabolism is elevated. If it is underactive (hypothyroidism), the metabolism slows down.

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. Idiopathic means that it is unclear why this would occur. In idiopathic thyroid gland atrophy, normal thyroid tissue is replaced by fat tissue. This condition, as its name implies is also poorly understood.

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

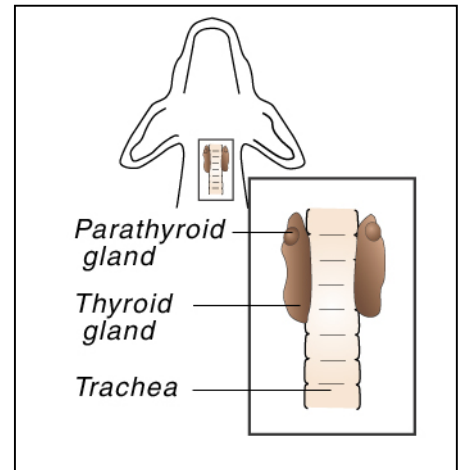
What are the clinical signs?

When the metabolic rate slows down, virtually every organ in the body is affected. Most dogs with hypothyroidism 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 coat with excessive shedding and flaking
- Very thin to nearly bald hair coat
- 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 co-ordination, 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 most common screening test is a Total Thyroxin (TT₄) level. This is a measurement of the main thyroid hormone in a blood sample. If it is low or below normal and clinical signs are present, this is suggestive of hypothyroidism. Definitive diagnosis is then made by performing a Free T₄ by Equilibrium Dialysis (Free T₄ by ED). If this test is low, then your dog has hypothyroidism. Some pets will have a low TT₄ and normal Free T₄ by ED. These dogs do not have hypothyroidism. Additional tests may be necessary based on your pet's condition.

Can it be treated?

Hypothyroidism is most definitely treatable but not curable. Dogs are given an oral thyroid supplement (soloxine) and then periodically their thyroid level is checked to make sure it is in the normal range. Drug therapy for dogs that are hypothyroid is life long.

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. The dose will need to be further adjusted and maintained by performing TT₄ levels every six months on your pet. Close communication with your veterinarian is necessary in order to ensure that your dog maintains a normal thyroid level.

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. If any of these occur, please let us know immediately.