

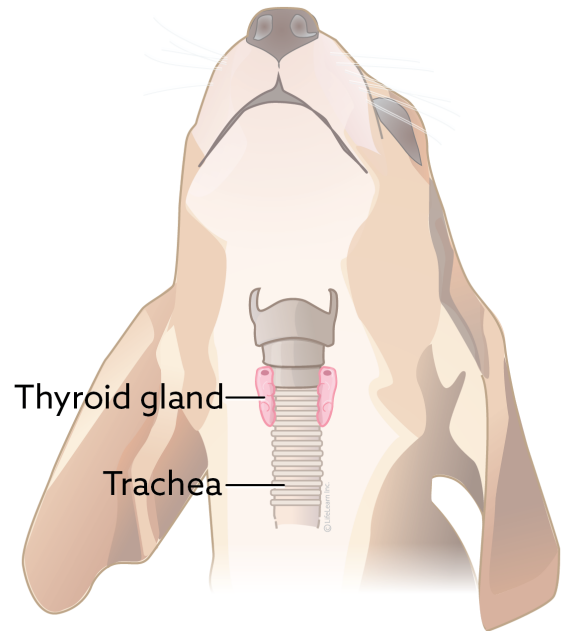
Hypothyroidism in Dogs

What is hypothyroidism?

Hypothyroidism is a condition of inadequate thyroid hormone levels that leads to a reduction in a dog's metabolic state. Hypothyroidism is one of the most common hormonal (endocrine) diseases in dogs. It generally affects middle-aged dogs (average of 6-7 years of age), and it may be more common in spayed females and neutered males. A wide variety of breeds may be affected.

The thyroid gland produces hormones that regulate the body's metabolic rate. If thyroid hormone levels are increased (hyperthyroidism), the body's metabolism is elevated. If they are decreased (hypothyroidism), the metabolism slows down.

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 is controlled by the pituitary gland, which is located at the base of the brain.



What causes hypothyroidism?

In dogs, hypothyroidism is usually caused by one of two diseases: lymphocytic thyroiditis or idiopathic thyroid gland atrophy. **Lymphocytic thyroiditis** is the most common cause of hypothyroidism and is thought to be an immune-mediated disease, meaning that the immune system decides that the thyroid is abnormal or foreign and attacks it. It is unclear why this occurs; however, it is a heritable trait, so genetics plays a role. In **idiopathic thyroid gland atrophy**, normal thyroid tissue is replaced by fat tissue. This condition is also poorly understood.

"In dogs, hypothyroidism is usually caused by one of two diseases: lymphocytic thyroiditis or idiopathic thyroid gland atrophy."

These two causes of hypothyroidism account for more than 90% of cases in dogs. The other causes are due to rare diseases or conditions, including cancer of the thyroid gland.

What are the signs of hypothyroidism?

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 signs:

- weight gain without an increase in appetite
- lethargy (tiredness) and lack of desire to exercise
- cold intolerance (gets cold easily)
- dry, dull hair with excessive shedding
- 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
- slow heart rate



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 (miscarriage) 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 hypothyroidism 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. A low level of TT4, along with the presence of clinical signs, is suggestive of hypothyroidism. Definitive diagnosis is made by performing a free T4 by equilibrium dialysis (free T4 by ED) or a thyroid panel that assesses the levels of multiple forms of thyroxin. 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. See handout “Thyroid Hormone Testing in Dogs” for more information.

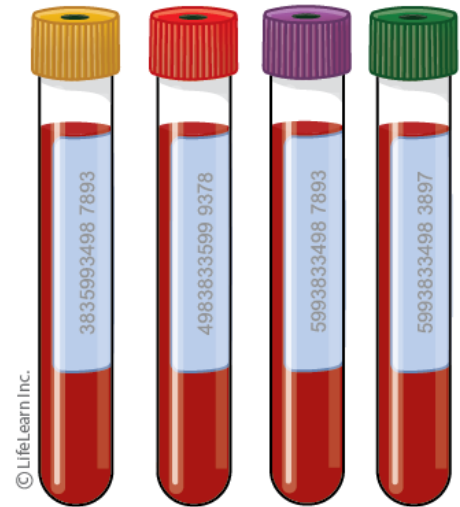
Can it be treated?

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. The most recommended treatment is oral synthetic thyroid hormone replacement called levothyroxine (brand names Thyro-Tabs® Canine, Synthroid®).

How is the proper dose determined?

All dogs are started on a standard dose of thyroid replacement hormone, based on the dog's weight. After one month of treatment, a blood sample is taken to verify that the thyroid hormone levels are normal. The blood sample is usually taken just before or 4–6 hours after medication administration, as hormone levels can fluctuate.

Since the dog's tolerance of the thyroid replacement hormone may change over time, the dose may need to be periodically adjusted. It is usually necessary to re-test thyroid hormone levels every six months. Close communication with your veterinarian is necessary to ensure that your dog is neither over- nor under-dosed. It is also important to monitor your dog's condition. If signs of hypothyroidism recur or if you feel your dog has signs of hyperthyroidism discussed below, let your veterinarian know right away.



Different blood collection tubes are used for different tests.

What happens if the medication is overdosed?

If the medication is overdosed, signs of hyperthyroidism (overactive thyroid) can result. These include hyperactivity, lack of sleep, weight loss, and increased water consumption.

Since the thyroid gland is such an important gland, it is extremely important that hypothyroidism be properly controlled. If you have any questions about this disease, or if you are concerned about your pet's response to treatment, contact your veterinarian.

© Copyright 2024 LifeLearn Inc. Used and/or modified with permission under license. This content written by LifeLearn Animal Health (LifeLearn Inc.) is licensed to this practice for the personal use of our clients. Any copying, printing or further distribution is prohibited without the express written consent of LifeLearn. This content does not contain all available information for any referenced medications and has not been reviewed by the FDA Center for Veterinary Medicine, or Health Canada Veterinary Drugs Directorate. This content may help answer commonly asked questions, but is not a substitute for medical advice, or a proper consultation and/or clinical examination of your pet by a veterinarian. Please contact your veterinarian if you have any questions or concerns about your pet's health.