Hypothyroidism is most common endocrine disease in the dog. Hypothyroidism is a disease that most commonly affects middle-aged dogs (4-10 years of age), but can be diagnosed at any age. Hypothyroidism is most commonly caused by immune-mediated inflammation of the thyroid gland or thyroid gland atrophy of unknown origin. Uncommon causes of hypothyroidism include cancer of the thyroid gland and congenital (occurring at birth) hypothyroidism. These causes then lead to insufficient production of thyroid hormone by the thyroid gland.

What role does thyroid hormone play in my dog’s body?

- Controlling metabolic activity (“metabolism”) - increasing the metabolic rate, affecting the rhythm and contractility of the heart
- Stimulates production of red blood cells by the bone marrow
- Regulates cholesterol synthesis and breakdown
- Contributes to development of the neurologic and skeletal systems.

What are the clinical signs of hypothyroidism in a dog?

- Lethargy, sleepiness
- Decreased ability/desire to exercise
- Weight gain without increased caloric intake
- Mental dullness
- Heat seeking behavior. Many dogs with hypothyroidism have skin and coat changes including dry and flaky skin, dull hair coat, hair loss, darkening of the skin, blackhead formation, ear infections, and recurrent skin infections.
Endocrine Series: Hypothyroidism in the Dog

How does my veterinarian diagnose hypothyroidism?

This disease can be over-diagnosed if based on lab work alone. The diagnosis of hypothyroidism is made based on a combination of your dog’s clinical symptoms along with a review of lab work (CBC, Chemistry profile and complete thyroid hormone blood panel). Your dog’s thyroid levels (Total T4) can fluctuate throughout the day. In addition, some medications falsely lower thyroid levels. So it is important that your dog have appropriate clinical symptoms along with multiple changes on lab work that together support a diagnosis of hypothyroidism.

How is canine hypothyroidism treated?

Although it can initially take several months, most dogs’ thyroid values can be fairly easy to regulate. This involves twice daily oral supplementation with synthetic thyroid hormone (L-thyroxine). A re-examination and testing of thyroid levels to assess response to therapy is recommended 4-8 weeks after starting therapy. Thyroid hormone level is evaluated to determine if the dose of L-thyroxine requires adjusting. For the first 6-8 months of treatment, the thyroid hormone level should be rechecked every 6-8 weeks because the dog’s response to therapy may change as the thyroid hormone and metabolic rate normalize. Most clinical signs should resolve within 2-3 months of beginning treatment. Activity level should improve within 1-2 weeks, but hair regrowth may take several months to resolve.

Once an appropriate dose of L-thyroxine has been achieved and the dog is responding well to therapy, thyroid level need only be rechecked every 6-12 months. It is important to monitor post-pill total thyroid levels to ensure the thyroid is not over supplemented resulting in thyroid levels that are too high (thyrotoxicosis). If the thyroid is over supplemented with synthetic hormone clinical signs include panting, increased appetite, weight loss, increased water consumption and urination, anxiety, and diarrhea may be observed. If you notice any of these signs, contact your veterinary dermatologist or your primary care veterinarian.

Hypothyroidism causing “myxedema” (puffy face) due to increased mucin deposited within the skin. This dog was lethargic & had “heat seeking” behavior.