

Hypothyroidism

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Hypothyroidism is a common cause of hair loss, poor hair growth and pyoderma in the dog. It can cause a myriad of other symptoms as well, but most notably weight gain despite a normal appetite and lethargy.

Hypothyroidism is *not* an itchy skin disease; however, pyoderma secondary to hypothyroidism can be itchy.

The most common cause of hypothyroidism is lymphocytic plasmacytic thyroiditis – or immune-mediated destruction of the thyroid gland. Clinical signs of hypothyroidism typically become apparent after 75% of the thyroid gland has already been destroyed.

Hypothyroidism can be screened for with a Total T4. If the Total T4 is normal, even low normal, then the dog does not have hypothyroidism. If the Total T4 is abnormal, then Free T4 and TSH levels must be checked to confirm the diagnosis.

Total T4 can be affected by illness, such as chronic pyoderma, and by many drugs. Some drugs that can affect Total T4 include: clomipramine, carprofen, steroids, furosemide, phenobarbital, sulfonamides, penicillin, diazepam and estrogen.

Free T4 and TSH are not perfect tests, and sometimes the TSH will be normal in a hypothyroid dog. Autoantibodies can be useful to measure in dogs with multiple illnesses.

Treatment is generally straightforward: supplementation of thyroid hormone. However, dogs must be monitored for over-supplementation.

Some abnormalities improve quickly once thyroid supplementation is initiated, and other symptoms take weeks to months to resolve.

Time to Resolution of Hypothyroid Signs

*Mentation & activity	2 to 7 days
*Lipemia & Clin path	2 to 4 weeks
*Dermatologic abnormalities	2 to 4 months
*Neurologic abnormalities	1 to 3 months
*Cardiac abnormalities	1 to 2 months
*Reproduction abnormalities	3 to 10 months

Some dogs will experience massive shedding of skin and hair within 1 to 2 months of starting thyroid supplementation. Hypothyroidism causes large numbers of hairs to stay in the resting phase of the hair cycle (telogen). It also slows skin cell turn over. Once

thyroid supplementation is initiated, new hairs start to grow (anagen) and push the resting hairs out. This can occur en masse. The renewal rate of the epidermis also increases. As a result, the dead skin cells are shed quickly and in large numbers. This results in a shedding of hair and skin that looks like the skin is getting worse; however, it is a normal renewal process. The massive shedding will normalize over the course of 1 to 2 months in most cases.