

# capsules

## THE CURRENT LITERATURE IN BRIEF

### Feline Hypothyroidism: Rare but Dramatic

Hypothyroidism, the least common feline endocrine disorder, is more common in the congenital than the adult-onset form. Most congenital cases result from dysgenesis, although numerous potential causes exist. In affected kittens, postnatal development of the nervous and skeletal systems is abnormal because of lack of normal thyroid hormone. As a result, characteristic findings are observed, including high birthweight followed by delayed growth and disproportionate dwarfism; central and peripheral nervous system abnormalities; delayed dental eruption; mental dullness and lethargy; and skeletal and gait abnormalities. Abnormal laboratory values include hypercholesterolemia, hypercalcemia, and mild anemia. In adult cats, the most common cause of hypothyroidism is iatrogenic, occurring after treatment for hyperthyroidism with radioactive iodine. Clinical signs are subtle and occur gradually (lethargy, weight gain, depression, hypothermia, and bradycardia). Symmetrical truncal or tailhead alopecia is also characteristic, and compression of the facial nerve from myxedema can cause the classic “tragic” facial expression. Normocytic normochromic anemia can be expected in about 30% of cases. Other clinicopathologic findings include increased serum creatine kinase, increased triglycerides, mild hyponatremia, increased serum fructosamine, and impaired glucose tolerance. The most economical and efficient way to diagnose hypothyroidism in cats is by a combination of serum total thyroxine (TT<sub>4</sub>) and endogenous thyrotropin (TSH) testing. Cats with primary hypothyroidism are expected to have low or low normal TT<sub>4</sub> and high TSH levels. In cats with both low TT<sub>4</sub> and TSH levels, a free T<sub>4</sub> (FT<sub>4</sub>) measurement by equilibrium dialysis will differentiate the euthyroid sick syndrome (normal FT<sub>4</sub>) from true secondary hypothyroidism. Treatment of affected cats with synthetic levothyroxine is simple and effective.

**COMMENTARY:** Although feline hypothyroidism is rare, it is important for clinicians to be able to recognize its risk factors and clinical signs and to know how to test for it. There is no feline-specific TSH assay, but the endogenous canine TSH test can be used. Also important when interpreting test results is realizing that kittens have serum concentrations of TT<sub>4</sub> 2 to 5 times greater than those of adult cats. Thus, a TT<sub>4</sub> concentration in a kitten that might be normal for an adult cat is indicative of hypothyroidism in the kitten.

—Jennifer L. Schori, VMD

Diagnosis of congenital and adult-onset hypothyroidism in cats. Greco DS. *CLIN TECH SMALL ANIM PRACT* 21:40-46, 2006.