

## WHAT THYROID LEVELS ARE NORMAL FOR SALUKIS?

(Why funding a normal study is important)

By Mary Dee Sist DVM

Hypothyroidism, or a poorly functioning thyroid gland, is the most common endocrine disorder of dogs. Thyroid hormone is needed for the normal cellular metabolic functions of the body. Deficiencies affect almost all organ systems. The onset is gradual and subtle and often goes unrecognized. The signs can be quite variable and include metabolic, dermatologic, reproductive, neuromuscular, ocular, cardiovascular, gastrointestinal and hematologic manifestations.

The major cause of hypothyroidism in dogs is autoimmune thyroiditis. It is an immune-mediated process that starts early in life and gradually progresses through old age. It is only when the dog's thyroid gland is no longer capable of producing enough hormone to sustain clinical health that signs appear. The heritable nature of this disorder poses significant genetic implications for breeding stock.

Simplified basic thyroid physiology will help explain why no single easy test exists to diagnose hypothyroidism. The pituitary gland secretes thyroid stimulating hormone (TSH) which causes the thyroid gland to produce and secrete hormones (T4 and T3) that act at the cellular level and feed back on the pituitary to regulate production of TSH. Various forms of thyroid hormones are measured by different assays.

As primary thyroid gland failure develops and progresses, the T4 concentration falls which causes more TSH to be secreted. This stimulates the remaining thyroid tissue to make more T4 which prevents the signs of hypothyroidism from developing. The stimulated thyroid gland increases the conversion of T4 to T3 and sufficient extra T3 is secreted to keep the level normal until very late is the progression of the disease.

To further complicate the diagnosis of the thyroid status, it is known that debilitating illnesses such as kidney failure, liver disease, endocrine disorders, starvation and even stress can lower thyroid hormone levels. This is not hypothyroidism however, but a secondary reaction to other diseases and is called sick euthyroidism. Studies have shown that with advancing age T4 levels decline. Most forms of general anesthesia and some drugs also depress thyroid hormones concentrations. These include some antibiotics and diuretics, steroids, phenobarbital and nonsteroidal pain relievers such as aspirin and phenylbutazone.

To accurately assess the thyroid status of a dog, a profile of the different thyroid hormone concentrations is needed. TSH levels are important in differentiating hypothyroidism from nonthyroidal illness. The addition of assays for thyroid related autoantibodies greatly assist in making the diagnosis of autoimmune thyroiditis. The new assay for thyroglobulin autoantibody (TgAA) can identify dogs in the early compensatory stages of autoimmune thyroiditis long before changes in thyroid hormone levels or the signs of hypothyroidism become apparent. This affords important genetic and clinical options.

Diagnostic laboratories don't supply breed-specific normal ranges. Research studies have shown that Greyhounds and, more recently, Irish Wolfhounds have normal range of serum T4 values considerably lower than the commonly reported values. What are normal thyroid hormones value for salukis?

The endocrine laboratory at Michigan State University, under the leadership of Dr. Raymond Nachreiner, is a premier research institution in thyroid studies. They are willing to measure the level of thyroid hormones in Salukis at their cost and provide the saluki fancy with a breed profile. I have collected over 150 blood samples from Salukis of various lines and ages of Middle Eastern as well as Western descent family groups. These have been stored, waiting for funding for analysis. Your assistance in helping to fund this study will be of great benefit to the breed.

A series of events has been proposed to start the fund raising. The first being a silent auction organized by Sharon Kinney at the Saluki Club of America's Western Regional Specialty at Lompoc, CA on July 22, 1998. All proceeds of this auction will help fund this study. Please contact Sharon Kinney regarding donations at 20405 Lewis Dr, Orange, Ca 92869 phone: (714) 532-4582 fax: (714) 532-4825 or e-mail: ISSIBAA@AOL.com

The Society for The Perpetuation of Desert Bred Salukis has also expressed willingness to hold another raffle open to all interested parties who wish to participate. To contact SPDBS about donations, write Gail Goodman at 10326 B. Bramble Ave., Apache Junction AZ 85220 or e-mail: midbarslq@juno.com.

Or give me a call if you have any questions. Mary Dee Sist, DVM 1629 Meech, Williamston, MI 48895 (517)655-1354