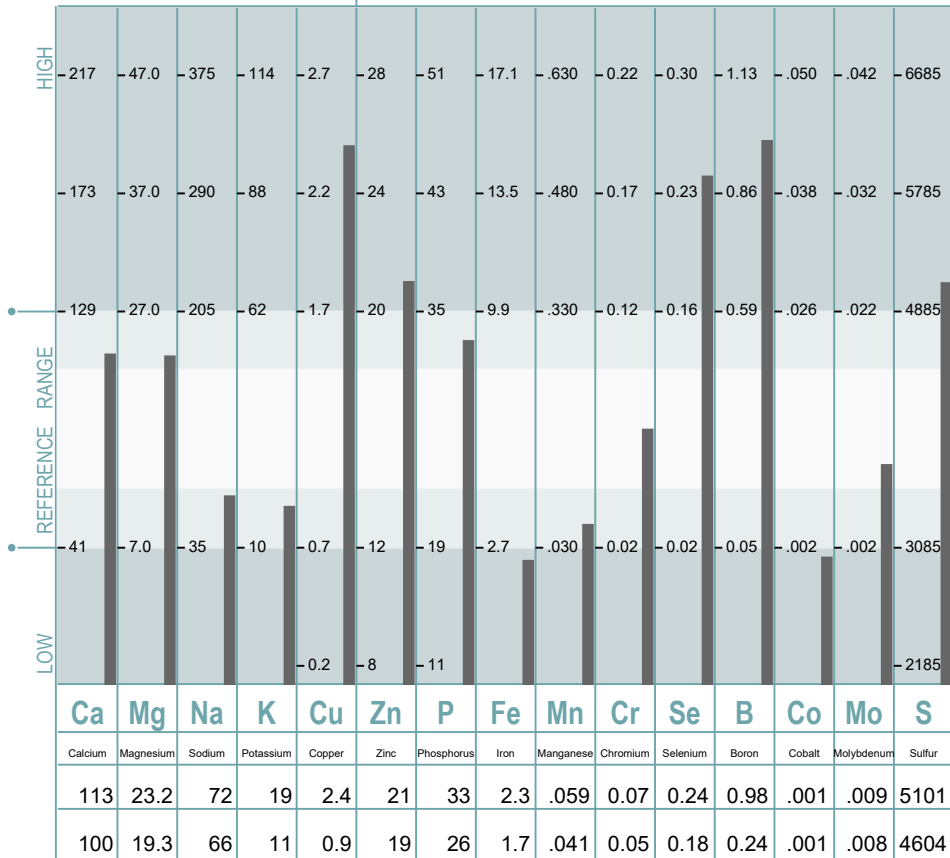


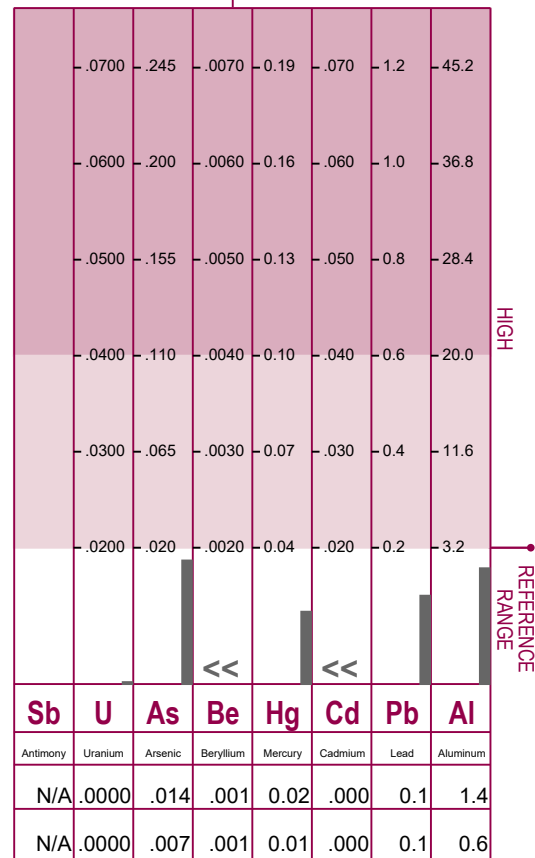
LABORATORY NO.:	1837918
PROFILE NO.:	10

CANINE	CANINE, ODHIN PARKER	AGE: 1	SEX: MALE		
REQUESTED BY:	DR BRIGHT, G	ACCOUNT NO.:	2216	DATE:	15/01/2025

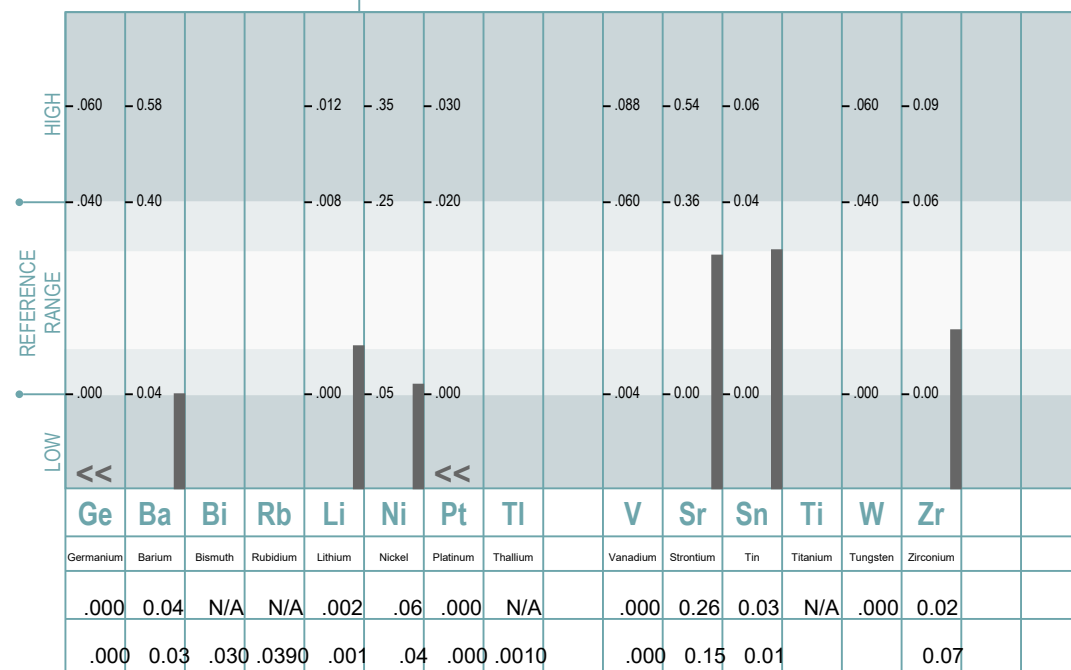
NUTRITIONAL ELEMENTS



TOXIC ELEMENTS



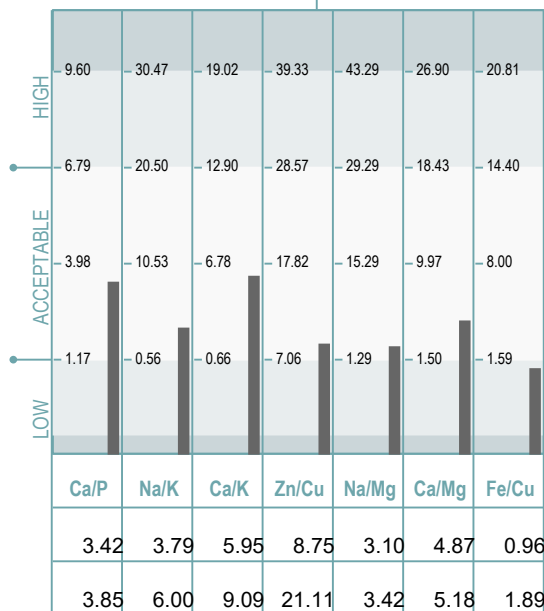
ADDITIONAL ELEMENTS



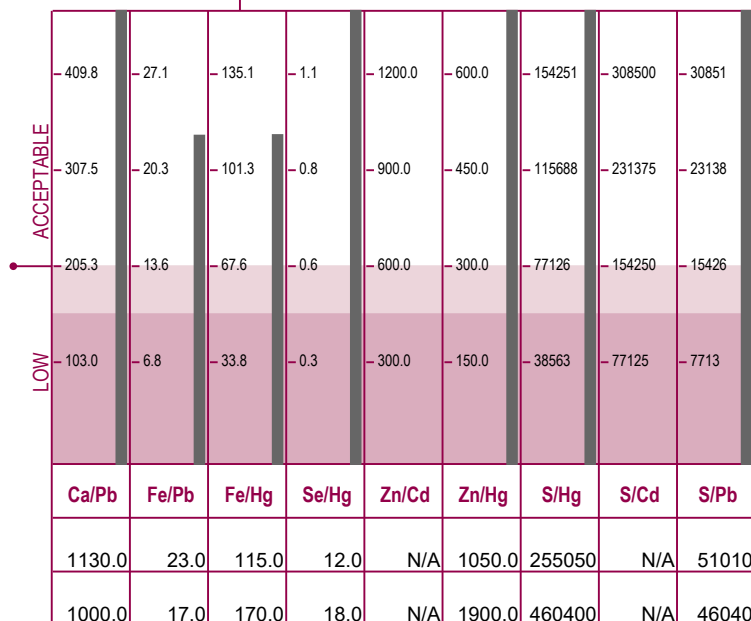
"<<": Below Calibration Limit; Value Given Is Calibration Limit
 "QNS": Sample Size Was Inadequate For Analysis.
 "N/A": Currently Not Available
 Laboratory Analysis Provided by Trace Elements, Inc.
 an H. H. S. Licensed Clinical Laboratory. No. 45 D0481787

15/01/2025
 CURRENT TEST RESULTS
 17/09/2024

SIGNIFICANT RATIOS



TOXIC RATIOS



ADDITIONAL RATIOS

RATIO	CALCULATED VALUE		OPTIMUM
	Current	Previous	
Ca/Sr	434.6	666.7	N/A
Cr/V	N/A	N/A	N/A
Cu/Mo	266.7	112.5	N/A
Fe/Co	2300.0	1700.0	N/A
K/Co	19000.0	11000.0	N/A
K/Li	9500.0	11000.0	N/A
Mg/B	23.7	80.4	N/A
S/Cu	2125.4	5115.6	N/A
Se/Tl	240.0	N/A	N/A
Se/Sn	8.0	18.0	N/A
Zn/Sn	700.0	1900.0	N/A

LEVELS

All mineral levels are reported in milligrams percent (milligrams per one-hundred grams of hair). One milligram percent (mg%) is equal to ten parts per million (ppm).

NUTRIENT MINERALS

Extensively studied, the nutrient minerals have been well defined and are considered essential for many biological functions. They play key roles in such metabolic processes as muscular activity, endocrine function, reproduction, skeletal integrity and overall development.

TOXIC MINERALS

The toxic minerals or "heavy metals" are well-known for their interference upon normal biochemical function. They are commonly found in the environment and therefore are present to some degree, in all biological systems. However, these metals clearly pose a concern for toxicity when accumulation occurs to excess.

ADDITIONAL MINERALS

These minerals are considered as possibly essential. Additional studies are being conducted to better define their requirements and amounts needed.

RATIOS

A calculated comparison of two minerals to each other is called a ratio. To calculate a ratio value, the first mineral level is divided by the second mineral level.

EXAMPLE: A sodium (Na) test level of 24 mg% divided by a potassium (K) level of 10 mg% equals a Na/K ratio of 2.4 to 1.

SIGNIFICANT RATIOS

If the synergistic relationship (or ratio) between certain minerals is disturbed, studies show that normal biological functions and metabolic activity can be adversely affected. Even at extremely low concentrations, the synergistic and/or antagonistic relationships between minerals still exist, which can indirectly affect metabolism.

TOXIC RATIOS

It is important to note that animals with elevated toxic levels may not always exhibit clinical symptoms associated with those particular toxic minerals. However, research has shown that toxic minerals can also produce an antagonistic effect on various essential minerals eventually leading to disturbances in their metabolic utilization.

ADDITIONAL RATIOS

These ratios are being reported solely for the purpose of gathering research data. This information will then be used to assist in evaluating their impact upon health.

REFERENCE INTERVALS

Generally, reference intervals should be considered as guidelines for comparison with the reported test values. These reference intervals have been statistically established from studying an international population of "healthy" individuals.

Important Note: The reference intervals should not be considered as absolute limits for determining deficiency, toxicity or acceptance.

INTRODUCTION TO HAIR TISSUE MINERAL ANALYSIS

Hair is formed from clusters of matrix cells that make up the follicles. During the growth phase, the hair is exposed to the internal metabolic environment such as the circulating blood, lymph, and extracellular fluids. As the hair continues to grow and reaches the surface of the skin, its outer layers harden, locking in the metabolic products accumulated during this period of hair formation. This biological process provides us with a blueprint and lasting record of nutritional metabolic activity that has occurred during this time.

Determining the levels of the elements in the hair is a highly sophisticated analytical technique; when performed to exacting standards and interpreted correctly, it may be used as a screening aid for mineral deficiencies, excesses, and/or biochemical imbalances. Hair tissue mineral analysis (HTMA) provides the health professional with a sensitive indicator of the long-term effects of diet and toxic metal exposure.

THE LABORATORY TEST RESULTS AND THE COMPREHENSIVE REPORT THAT FOLLOWS SHOULD NOT BE CONSTRUED AS DIAGNOSTIC. THIS ANALYSIS IS PROVIDED ONLY AS AN ADDITIONAL SOURCE OF INFORMATION.

TEST RESULTS WERE OBTAINED BY A LICENSED CLINICAL LABORATORY ADHERING TO ANALYTICAL PROCEDURES THAT COMPLY WITH GOVERNMENTAL PROTOCOL AND STANDARDS ESTABLISHED BY TRACE ELEMENTS, INC., U.S.A.

METABOLIC TYPE

Neuro-endocrine activity affects mineral absorption, retention, and excretion; therefore, tissue mineral patterns reveal certain biochemical characteristics, which are termed metabolic types.

FAST METABOLISM

This dog is regarded as having an increased metabolic rate based upon current hair tissue mineral patterns. Increased sympathetic neurological activity, however, does not necessarily translate into high or optimum performance unless there is a synchronization of the endocrine glands. (See Endocrine and Performance Index's)

CHARACTERISTICS OF FAST METABOLIC TYPES

Generally speaking, a dog with a fast metabolic rate is high spirited and may be suited to athletic performance. However, if the metabolic rate is too excessive, the energy may be rapidly dissipated due to a nervous or high-strung nature. An excessive loss of energy can in turn result in energy swings, and therefore, poor long-term energy production and performance.

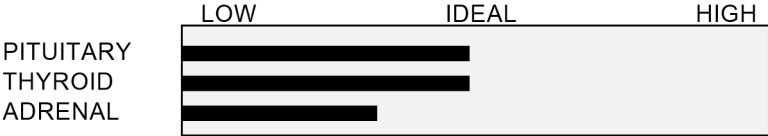
ENDOCRINE AND PERFORMANCE INDEXES

** ENDOCRINE INDEX **

The endocrine index is a graphic presentation of the pituitary-adrenal-thyroid relationship, or axis (P.A.T.). These endocrine glands influence energy production on a cellular level and ultimately the health and performance of the dog. Ideally, there should be a balance within the P.A.T. The levels need not be at the ideal range as this range is used only as a reference point. However, they should be balanced above, below or at the "ideal" point. A major deviation between the P.A.T. axis can be indicative of a tendency or trend toward an adverse health condition. In the performance animal, a major deviation of the P.A.T. axis is reflective of an adverse affect upon speed and/or stamina.

NOTE:

A "balanced" P.A.T. would appear on the following index with all three bar graphs extending the same length to the right. Ideally, all three would extend to the mid-way point, but as mentioned previously, a balance anywhere within the box is acceptable.



THYROID EVALUATION

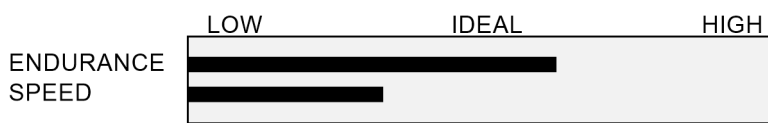
The thyroid gland is responsible for the rate of sustained cellular energy production and release. The present TMA pattern reflects thyroid activity within the normal range.

ADRENAL FUNCTION

The adrenal gland produces a number of vital hormones, many of which have an effect upon energy production. Adequate adrenal activity is indicated by the current HTMA mineral pattern.

** PERFORMANCE INDEX **

The following performance index (P.I.) graphically displays the relationship of the energy producing glands on speed and endurance.



PERFORMANCE EVALUATION

The performance index reflects the domination of the thyroid gland over the adrenal glands. This is indicative of the tendency toward good endurance over longer distances, or for longer periods of time. However, as a result of thyroid dominance over the adrenals, speed, quickness and/or power over short periods of duration or distance may be negatively affected.

NUTRITIONAL MINERALS

This section of the report may discuss those nutritional mineral levels and/or mineral ratios that reveal moderate or significant deviations from normal. The light blue area's of the graph's mineral levels (front page) and mineral ratios (reverse page) represent the established reference ranges as determined from statistical analysis of healthy canines. However, as this HTMA is based upon clinical data and research, a mineral level or ratio that is moderately outside the reference range may not be commented on, unless determined to be clinically significant.

CALCIUM (Ca) WITHIN NORMAL RANGE

The mineral calcium is required for the maintenance and strength of bones and teeth, normal blood clotting ability, muscular contraction and nerve conduction.

Even though the tissue calcium level is within the normal range, its proper function in the biological system requires a homeostatic equilibrium with other nutritional co-factors, especially magnesium, phosphorus, and vitamin D. These co-factors should always be considered when evaluating calcium status (see Ca/Mg, Ca/P ratios).

CALCIUM/PHOSPHORUS RATIO WITHIN NORMAL RANGE

A normal calcium-to-phosphorus ratio is indicative of efficient energy production as well as efficient utilization of foods consumed.

MAGNESIUM (Mg)

Tissue magnesium is within the "acceptable" range. The metabolic utilization and function of magnesium, however, depends upon its relationship to calcium, sodium, potassium, and phosphorus. Even though the test results reveal an acceptable level of magnesium, a relative deficiency or excess may be present in relation to these minerals. These ratios (Ca/Mg, Na/Mg, Mg/K and Mg/P) are also very important in determining magnesium status.

LOW IRON AND ANEMIA

Since the tissue iron level is low, the serum may be evaluated for the possibility of anemia. A decrease in tissue iron levels may precede a decrease in the serum level of iron. Therefore, temporary iron supplementation may be indicated as a preventive measure.

Iron deficiency anemia can adversely affect health due to decreased oxygen supply to the tissues. This can contribute to fatigue, hard breathing, and an enlargement of the heart.

FACTORS CONTRIBUTING TO IRON DEFICIENCY

- High Calcium Intake
- Protein Deficiency
- Parasites
- Hard Water

- Low Iron Intake
- Toxic Metal Accumulation
- Vitamin B6 Deficiency
- Copper Deficiency

COPPER (Cu) EXCESS

Copper is classified as a sedative mineral. In excess, copper may decrease optimum performance, due to its suppressing effect upon endocrine activity, especially the thyroid gland which is responsible for sustained energy production. One of the most common sources of excessive copper intake is from water. Softened water can leach copper from copper water pipes, thereby increasing dietary intake and body burden.

REDUCE INTAKE OF DOG FOOD CONTAINING THE FOLLOWING LOW ZINC - HIGH COPPER INGREDIENTS

Mineral concentrations will vary according to soil content and fertilizing methods. The sources listed below represent a general guide in recognizing low zinc to high copper nutritional content. If the current food contains significant amounts of the following ingredients, it should be reduced or switched to another food that contains lesser amounts at this time:

- Brewers Yeast
- Liver Meal

- Soybeans
- Corn Gluten

SELENIUM (Se) EXCESS

Selenium can become toxic with prolonged exposure and accumulation. The following conditions have been associated with selenium toxicities:

- Weight Loss
- Loss of Hair

- Reproductive Failure
- White Muscle Disease

The most common sources of selenium is from food or veterinary supplements containing high levels of selenium.

BORON (B)

The boron level is elevated. It should be noted that boron has been found to antagonize vitamin B2, thereby increasing vitamin B2 requirements when boron is elevated. One potential source of boron can be veterinary supplements and if applicable, should be reduced in the dog's diet at this time.

OTHER SOURCES OF BORON

- Antibiotics
- Dental hygiene products
- Cleaning solutions with boric acid

- Analgesics
- Insecticide Dusts
- Soap (borax)

Note: Elevated boron levels may be due to external contamination from soap and detergent residues.

COBALT (Co)

The cobalt level is below the established reference range for this essential trace element. Cobalt is an integral part of Vitamin B12 and it activates a number of enzymes within the body. Reduced levels can occur due to decreased dietary intake, poor absorption, infections, some medications and parasites. Increased bacterial colonization of the small intestine tends to inhibit

cobalt absorption. Cobalt absorption can also be diminished by high iron intake. A deficiency of cobalt may be responsible for the symptoms of pernicious anemia and a slow rate of growth.

NOTE:

The first step in reducing toxic metal accumulation is to isolate and remove the source. Assessment of chemicals presently being used within the dog's environment and testing of the food and water supply are suggested.

CONCLUSION

This report provides a unique insight into the dog's nutritional biochemistry. The recommendations contained within are specifically designed according to individual metabolic type and current mineral status. Additional recommendations may be based upon other supporting clinical data as determined by the attending veterinarian or trainer.

OBJECTIVE OF THE PROGRAM

The purpose of this program is to re-establish a normal balance of body chemistry through individually designed diet and supplement suggestions, enhancing the dog's ability to utilize the nutrients efficiently and resulting in improved energy production and health.

WHAT TO EXPECT DURING THE PROGRAM

The mobilization and elimination of toxic metals may cause temporary discomfort. This can be expected until removal of the excess metal is complete. Temporary modification of the program can aid in reducing the discomfort associated with the mobilization of the metals.

RECOMMENDATION	AM	NOON	PM
SYM-PACK	1	0	1
CALCIUM PLUS	0	0	1
PYRIDOX PLUS	1	0	0
MANGANESE PLUS	1	0	1
ZINC PLUS	1	0	1
VITAMIN C PLUS	1	0	0

THESE RECOMMENDATIONS MAY NOT INCLUDE MINERALS WHICH APPEAR BELOW THE IDEAL OR IN TURN MAY RECOMMEND MINERALS WHICH APPEAR ABOVE THE IDEAL ON THE TMA GRAPH. THIS IS NOT AN OVERSIGHT. SPECIFIC MINERALS WILL INTERACT WITH OTHER MINERALS TO RAISE OR LOWER TISSUE MINERAL LEVELS, AND THIS PROGRAM IS DESIGNED TO BALANCE THE DOG'S MINERAL LEVELS THROUGH THESE INTERACTIONS.

THESE RECOMMENDATIONS SHOULD NOT BE TAKEN OVER A PROLONGED PERIOD OF TIME WITHOUT OBTAINING A RE-EVALUATION. THIS IS NECESSARY IN ORDER TO MONITOR PROGRESS AND MAKE THE NECESSARY CHANGES IN THE RECOMMENDATIONS AS REQUIRED.
