



LIBRA HEALTH UK

**CANINE** MINERAL  
TEST & ANALYSIS  
**REPORT**

**OWNER NAME:** MISS LIBRA SAMPLE

**DATE:** 19/11/2024

# YOUR INFORMATION



LIBRA HEALTH UK

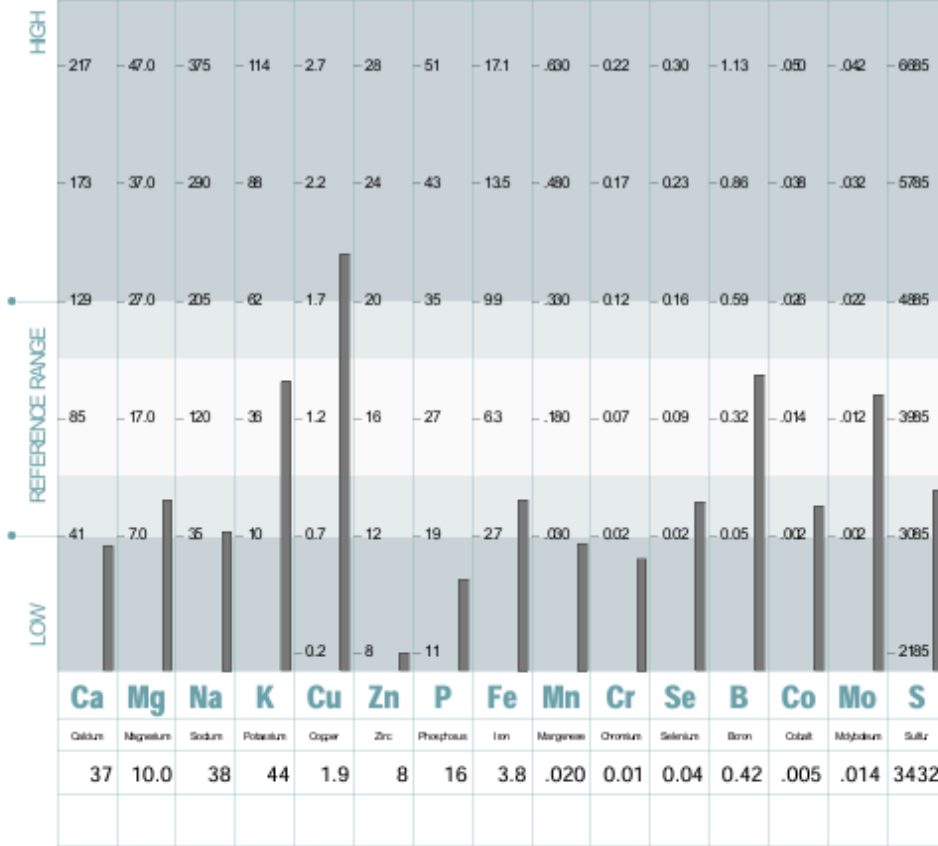
CANINE NAME: Cooper (Sample)

DATE OF BIRTH: 03/05/2020

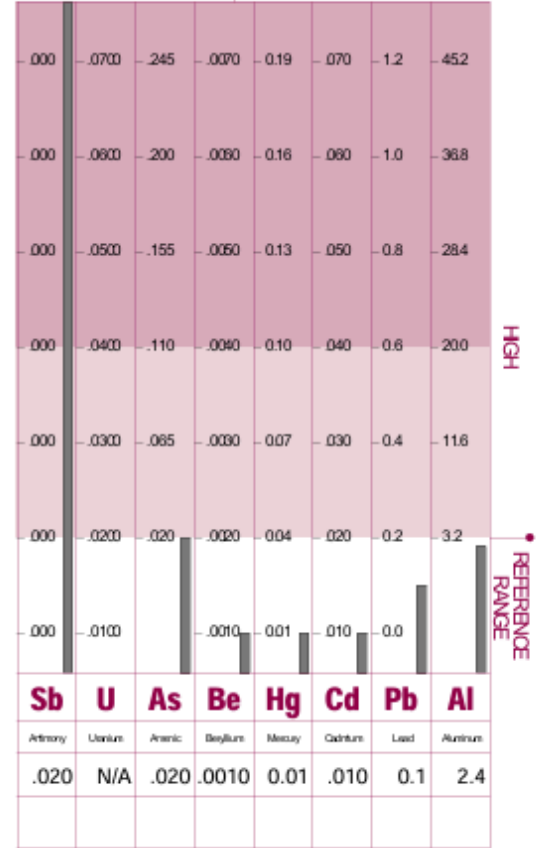
MEDICAL HISTORY: None

PRACTITIONER NAME: Lib Ally (Canine Nutritionist)

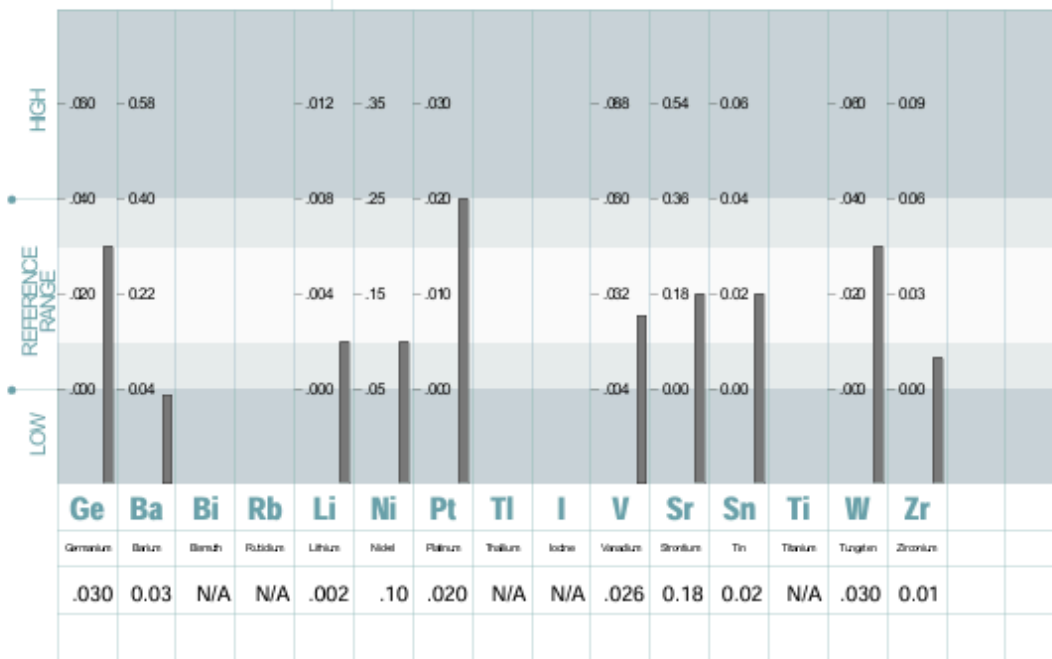
## NUTRITIONAL ELEMENTS



## TOXIC ELEMENTS



## ADDITIONAL ELEMENTS



\*<<: Below Calibration Limit Value Given Is Calibration Limit

\*QNS: Sample Size Was Inadequate For Analysis.

\*NA: Currently Not Available

Laboratory Analysis Provided by Trace Elements, Inc., an H. S. Licensed Clinical Laboratory. No. 45 D0981787

6/8/1999  
CURRENT TEST RESULTS

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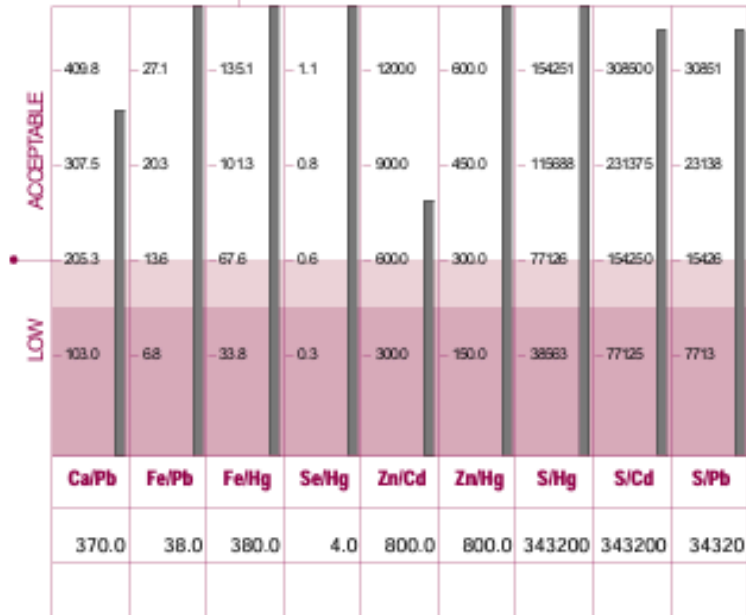
PREVIOUS TEST RESULTS



**SIGNIFICANT RATIOS**



**TOXIC RATIOS**



**ADDITIONAL RATIOS**

RATIO	CALCULATED VALUE		OPTIMUM
	Current	Previous	
Ca/Sr	N/A		NA
Cr/V	N/A		NA
Cu/Mb	N/A		NA
Fe/Co	N/A		NA
K/Co	N/A		NA
K/Li	N/A		NA
Mg/B	N/A		NA
S/Cu	N/A		NA
Se/Tl	N/A		NA
Se/Sn	N/A		NA
Zn/Sn	N/A		NA

**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 MINERALS**

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

**REFERENCE RANGES**

Generally, reference ranges should be considered as guidelines for comparison with the reported test values. These reference ranges have been statistically established from studying a population of "healthy" animals.  
 Important Note: The reference ranges should not be considered as absolute limits for determining deficiency, toxicity or acceptance.



## **INTRODUCTION TO MINERAL TESTING & ANALYSIS**

Hair is an ideal medium for mineral testing due to its unique characteristics.

It is formed from specialised cells in the hair follicle, which, during the growth phase, are exposed to the body's internal environment, including blood, lymph, and extracellular fluids.

As the hair grows and emerges from the skin, its outer layers harden, effectively locking in the metabolic products accumulated during formation.

This process creates a lasting record of the body's mineral status and nutritional and metabolic activity during that time.

The precise method of analysing mineral levels in hair is highly sophisticated. However, when performed to exact standards and correctly interpreted, it serves as an effective screening tool for identifying mineral deficiencies, excesses, and imbalances.

Hair Tissue Mineral Analysis provides both you and your vet with an economical and sensitive indicator of the long-term effects of diet, stress, toxic metal exposure, and their impact on your dogs mineral balance—information that is challenging to obtain through other clinical tests.

Understanding your dogs mineral status is crucial, as minerals are vital for life and optimal health. They play essential roles in cellular metabolism, structural support, nerve conduction, muscular activity, immune functions, antioxidant and endocrine activity, enzyme functions, water and acid/alkaline balance, and even DNA function.

Several factors can impact mineral nutrition, including food preparation, dietary habits, genetic and metabolic disorders, disease, medications, stress, environmental factors, and exposure to heavy metals.

It is rare for a human or animal to have a single nutrient deficiency; multiple nutritional imbalances are more common and contribute to increased adverse health conditions.

Mild and sub-clinical nutritional imbalances are estimated to be up to ten times more common than straightforward nutritional deficiencies.

The results of laboratory tests and the accompanying comprehensive report should not be viewed as diagnostic. Instead, this analysis serves as a screen tool to provide both owner and vet with an additional source of information for:

- Identifying Deficiencies
- Preventing Imbalances
- Supporting Growth and Development
- Managing Chronic Conditions
- Enhancing Overall Health

**These test results were obtained by a certified and accredited clinical laboratory adhering to analytical procedures that comply with governmental protocol and standards established by Trace Elements, Inc. U.S.A, and analysed by a UK Canine Nutritionist.**



## **UNDERSTANDING THE GRAPHS**

### **Nutritional Elements**

This section of the cover page visually displays the test results for each reported nutritional element and compares them to the established population reference range. Values that fall above or below the reference range indicate a deviation from "normal." The more significant the variation, the greater the likelihood of a deficiency or excess.

### **Toxic Elements**

The toxic elements section presents the results for each reported toxic element. Ideally, all levels should be as low as possible and within the lower white section. Test results that appear in the upper dark red areas should be considered statistically significant but not necessarily clinically significant. Further investigation is needed to determine the potential clinical significance.

### **Additional Elements**

This section displays the results of additional elements for which there is limited documentation. These elements may be necessary for biochemical functions and might adversely affect biochemical processes. Further research will help to understand their role, interrelationships, and appropriate therapeutic applications or treatments.

### **Significant Ratios**

The significant ratios section highlights the important nutritional mineral relationships. This section includes calculated values based on the respective elements. Mineral relationships (balance) are as important, if not more so, than individual mineral levels. The ratios reflect the critical balance that must be maintained between the minerals in the body.

### **Toxic Ratios**

This section shows the relationships between critical nutritional elements and toxic metals. Each toxic metal ratio result should ideally be within the white area of the graph, with higher values being better. Toxic ratios that fall within the darker red area may indicate an interference of that toxic metal with the utilization of the nutritional element.

### **Additional Ratios**

The additional ratios section provides calculated results on some extra mineral relationships. Currently, there is limited research and documentation regarding these ratios.





## 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.

## ADRENAL FUNCTION

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

## 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.

### LOW TISSUE CALCIUM (Ca)

Tissue calcium is moderately depressed. This can be a normal physiological response to increased stress or workloads. *A moderately low tissue calcium can be considered normal when the dog is dominant in sympathetic neuro-endocrine function.*

### CALCIUM/PHOSPHORUS RATIO WITHIN NORMAL RANGE

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

### MAGNESIUM (Mg)

Tissue magnesium is within the "acceptable" range. The metabolic utilisation 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.

### MANGANESE (Mn)

Manganese is required for carbohydrate and lipid (fat) metabolism as well as skeletal development, formation, and reproduction.

Studies have shown that in some species, tissue levels are affected by intake. Therefore, a low tissue manganese may indicate that adequate manganese in the diet should be maintained.

### 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.

### LOW ZINC/COPPER (Zn/Cu) RATIO

Excessive copper intake and retention will contribute to a zinc deficiency. Increased zinc supplementation as well as a reduction in foods containing high levels of copper is recommended at this time.

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





Mineral concentrations will vary according to soil content and fertilising 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

### **ZINC (Zn) LOW**

Zinc is required for many enzyme functions, and is one of the minerals most sensitive to the effects of stress.

Increased workload and other stressors, such as illness, will significantly increase zinc requirements.

A deficiency of zinc can lead to:

- Impaired Growth
- Delayed Wound Healing
- Infections
- Weight Loss
- Skin and Coat Changes
- Loss of Appetite
- Lowered Resistance
- Decreased Sperm Motility
- Reproductive Failure
- Decreased Alertness

### **ZINC AVAILABILITY AND FOODS CONTAINING PHYTATES**

Phytic acid found in cereal grains and soybeans will bind with zinc in the intestinal tract, decreasing its absorption and availability, thereby increasing zinc requirements.

Zinc supplementation should be started or increased if there is a high intake of dog food containing high levels of these grains.

### **CHROMIUM (Cr) AND FAT METABOLISM**

Chromium, which is involved in carbohydrate and lipid (fat) metabolism acts as a potentiator for the effects of insulin.

In some animals, chromium supplementation has been shown to improve lipid metabolism by decreasing cholesterol levels and plaque formation in the aorta.

**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.

## RECOMMENDATIONS

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

These recommendations may not include minerals which appear below the ideal range, and also in turn, include minerals which may appear above the ideal range 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 regime is designed to balance the dogs 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.

Canine Nutritionist

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**THANK YOU**  
FOR USING **LIBRA**