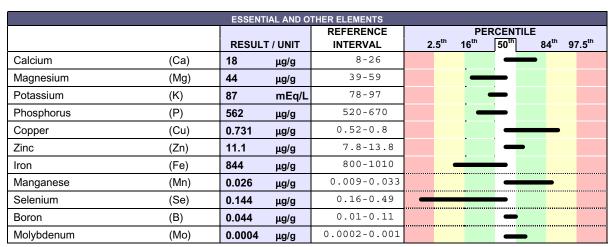


	PATIENT:	Sample Report	TEST REF: TST-NL-XXXXX		
I	TEST NUMBER:	T-NL-xxxxxx	COLLECTED:	dd-mm-yyyy	PRACTITIONER:
	GENDER:	M/F	RECEIVED:	dd-mm-yyyy	Nordic Laboratories
	AGE:	XX	TESTED:	dd-mm-yyyy	ApS
١					

TEST NAME: Packed Red Blood Cell (RBC) Elements

Toxic & Essential Elements; Packed Red Blood Cells



	TOXIC METALS				
			REFERENCE	PERCENTILE	
		RESULT / UNIT	INTERVAL	95 th 99 th	
Arsenic	(As)	0.0018 μg/g	< 0.008		
Cadmium	(Cd)	0.0008 μg/g	< 0.002		
Cesium	(Cs)	0.0086 μg/g	< 0.015		
Chromium	(Cr)	0.0002 μg/g	< 0.0005		
Lead	(Pb)	0.009 μg/g	< 0.05		
Mercury	(Hg)	0.0078 μg/g	< 0.01		
Thallium	(TI)	< 0.00004 μg/g	< 0.00005		

SPECIMEN DATA

Comments:

Date Collected: 05/20/2024 Methodology: ICP-MS

Date Received: **05/24/2024**Date Reported: **05/28/2024**

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PATIENT:	Sample Report	TEST REF: TST-NL-XXXXX		
TEST NUMBER: GENDER: AGE:	T-NL-XXXXXX M/F XX	COLLECTED: RECEIVED: TESTED:	dd-mm-yyyy dd-mm-yyyy dd-mm-yyyy	PRACTITIONER: Nordic Laboratories ApS

TEST NAME: Packed Red Blood Cell (RBC) Elements

PACKED BLOOD CELL ELEMENTS REPORT

INTRODUCTION

This analysis of elements in packed blood cells was performed by ICP-Mass Spectroscopy following acid digestion of the specimen in a closed microwave system. For a given element, these procedures measure the sum of the amounts of surface-adhering and intracellular content, regardless of chemical form. For units of measurement, mg/l is approximately equivalent to ppm, and mcg/l is approximately equivalent to ppb.

The packed cells are not washed, and therefore, a very small amount of residual plasma remains as part of the specimen. Washing would eliminate some important plasma membranebound elements. Because the cells are not washed, the DDI reference range may vary from published ranges for intracellular content of washed erythrocytes. Blood cell specimens that are not adequately centrifuged, per the kit instructions, may yield distorted or invalid results because of excess plasma content.

Packed blood cell analysis is intended to be a diagnostic method of assessing insufficiency or excess of elements that have important functions inside blood cells or on blood cell membranes. Additional testing of whole blood or serum/plasma or other body tissues may be necessary for differential diagnosis of imbalances. Additional testing also may be necessary to assess specific dysfunctions of assimilation, transport, retention, or excretion of elements. Packed blood cell element analysis is additionally intended to determine elevated or excessive levels of five potentially toxic elements that can accumulate in erythrocytes: thallium, arsenic, cadmium, lead, and mercury.

If an element is sufficiently abnormal per the blood cell measurement, a descriptive text is included with the report. For elements with essential or beneficial functions, a text will print if the measured result is below -1.5 standard deviations from the mean of the reference population, or if the result is above +1.5 standard deviations from the mean of the reference population. For potentially toxic elements, a text prints whenever the measured result exceeds the expected range. If no descriptive element texts follow this introductory discussion, then all essential cell elements were measured to be within +1.5 SD, and all measured potentially toxic elements were within expected ranges.

Doctor's Data states the reference range as +1 SD from the mean of the reference population. This is considered to be the nutritionally and physiologically optimal range for elements with essential or beneficial functions. Physiological imbalance corresponds to levels beyond +1 SD but pathological consequences are not expected until the blood level is beyond +2 SD. Element levels beyond +2 SD may only be temporary nutritional problems or they may reflect a failure of homeostasis to control blood quantities. Pathological consequences depend upon cell and tissue functions which are disrupted by such levels.

SELENIUM LOW

Selenium (Se) has two documented functions as an enzyme activator in humans: (1) activation of the enzyme T4 to T3 prohormone deiodinase for balance in thyroid hormone level, and (2) activation of glutathione peroxidase for reduction of peroxides by oxidation of glutathione. Erythrocytes are a tissue of choice for assessing glutathione peroxidase function and selenium status. In its antioxidant function, selenium works with vitamin E. Vitamin E functions to prevent oxidation of cell membranes and fatty acids, while glutathione, via the peroxidase enzyme, works to undo oxidation after it has happened.

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PATIENT:	Sample Report	TEST REF: TST-NL-XXXXXX		
TEST NUMBER: GENDER: AGE:	T-NL-XXXXXX M/F XX	COLLECTED: RECEIVED: TESTED:	dd-mm-yyyy dd-mm-yyyy dd-mm-yyyy	PRACTITIONER: Nordic Laboratories ApS

TEST NAME: Packed Red Blood Cell (RBC) Elements

Symptoms and conditions that can result from Se deficiency include: increased susceptibility to viral infections, increased inflammation during infection or following exposure to xenobiotics or oxidant chemicals, hardening or sclerosing of tissue, muscle pain and tenderness, and possibly hypothyroid function with subnormal T3.

Selenium deficiency usually is the result of a poor quality diet or one which has emphasized highly refined foods. However, there are geographical regions in the world where the soil contains little Se, and even unprocessed food grown in such soils can be deficient in Se. Selenium often is lost through urinary wasting in cystinuria; hyperaminoaciduria conditions and renal transport disorders may feature Se wasting.

Laboratory tests for further assessment of Se status are: determination of erythrocyte glutathione peroxidase functional activity, measurement of serum T3 and T4, and measurement of hair Se level (barring exogenous Se contamination primarily from shampoos). 24-hour urine amino acid analysis may be informative if Se wasting is suspected.

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