

26115-0008

Lab ID
Patient ID P000060
Ext ID 26115-0008

Test Patient

Sex: Female • 56yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
25-Apr-26

RED CELL MINERALS

Specimen type - Blood-Red Cell

Collected

15-Apr-26

Red Cell Minerals						
Test	Result	H/L		Reference	Units	
Chromium	1.10			(1.00-2.00)	ug/L	
Cobalt	0.22			(0.13-1.70)	ug/L	
Copper	1.2	H		(0.5-0.8)	ug/L	
Iodine	39.70			(20.00-160.00)	ug/L	
Magnesium	44.00			(39.00-58.00)	mg/L	
Manganese	16.80			(9.00-33.00)	ug/L	
Molybdenum	0.52	L		(0.60-2.00)	ug/L	
Selenium	164.00	L		(190.00-500.00)	ug/L	
Vanadium	0.07	L		(0.10-0.50)	ug/L	
Zinc	8.5	L		(8.6-14.5)	ug/L	

Red blood cell (RBC) analysis provides an assessment of intracellular mineral status over the lifespan of the erythrocyte (~120 days). Functional interpretation may assist in identifying links to mitochondrial activity, oxidative stress, inflammation, glucose regulation, and endocrine balance; however, results should be interpreted in conjunction with clinical findings and other laboratory investigations.

Essential Minerals Comment

About the element:

Selenium is an essential trace element incorporated into selenoproteins involved in antioxidant defence, thyroid hormone metabolism, and redox regulation.

Clinical significance of RBC:

RBC selenium is a useful marker of intracellular selenium status. Low levels may reflect reduced intake and may impair antioxidant enzyme activity. Functionally, low selenium may contribute to increased oxidative stress, altered thyroid hormone conversion, impaired immune regulation, and reduced cellular resilience.

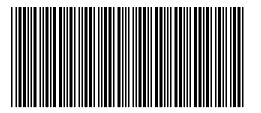
Suggested treatment considerations:

Optimise dietary intake and consider supplementation where appropriate. Correlation with thyroid markers and clinical features of oxidative stress or immune dysregulation may be helpful.

VANADIUM (V) LOW: The biological function of vanadium has not fully been substantiated, but there is evidence that it is essential for the growth of some animals. Vanadium may influence lipid metabolism, insulin function, and reduce caries formation in animals. Vanadium is poorly absorbed. **SOURCE:** All plant foods, especially soymeal and vegetable oils.

About the element:

Copper is an essential trace element involved in iron metabolism, antioxidant defence, mitochondrial function, and connective tissue formation.



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Clinical significance of RBC:

RBC copper reflects intracellular copper status and tissue distribution. Elevated levels may be associated with increased intake, altered copper metabolism, or impaired clearance. RBC measurements provide additional insight beyond serum copper, which is influenced by acute-phase responses.

Suggested treatment considerations:

Review dietary intake and supplementation. Consider correlation with serum copper, caeruloplasmin, and zinc status to assess overall trace element balance. Further evaluation may be warranted depending on clinical context.

ZINC LOW:

About the element:

Zinc is an essential trace element involved in immune function, antioxidant defence, gene expression, tissue repair, and enzyme activity.

Clinical significance of RBC:

RBC zinc reflects intracellular zinc status and is more stable than serum zinc. Low levels may suggest reduced intake, impaired absorption, or increased physiological demand. Functionally, low zinc may be associated with impaired immune regulation, reduced antioxidant capacity, compromised barrier integrity, and altered endocrine and reproductive function.

Suggested treatment considerations:

Review dietary intake and consider supplementation where appropriate. Assessment of zinc:copper balance may be useful, particularly where immune, inflammatory, or hormonal dysfunction is suspected.

MOLYBDENUM LOW:

About the element:

Molybdenum is a trace element required as a cofactor for enzymes involved in sulphur metabolism, aldehyde metabolism, and purine degradation.

Clinical significance of RBC:

RBC molybdenum reflects intracellular status over time. Low levels may indicate reduced intake, although clinically significant deficiency is uncommon. Functionally, low molybdenum may affect sulphite metabolism and related detoxification pathways, although the clinical impact is often modest unless deficiency is significant.

Suggested treatment considerations:

Review dietary intake and consider supplementation where clinically appropriate. Interpretation should be guided by the broader clinical picture.

VANADIUM LOW:

About the element:

Vanadium is a trace metal with no clearly established essential biological role in humans.

Clinical significance of RBC:

RBC vanadium reflects intracellular exposure. Low levels are generally not considered clinically significant.

Suggested treatment considerations:

No specific treatment is typically required. Interpretation should be guided by clinical context.

Methodology

Inductively Coupled Plasma Mass Spectrometry (ICP-MS)