

Consider the following information when a new analyte (test) is added to the laboratory handbook and at scheduled review.

Field	Detail	Essential?
Test Name (Analyte)	Zinc	Yes
Alternative Name(s) and Keywords	Zn, TPN (component)	Yes
Discipline/Specialty	Biochemistry	Yes
Description	Zinc is essential for the activity of many enzymes, including those involved in protein and nucleic acid synthesis.	Yes
Clinical Indication	Zinc deficiency is a well-known potential complication of parenteral nutrition if insufficient zinc supplementation is included. Patients who are catabolic, following trauma or major surgery for example, lose large amounts of zinc in urine and may become depleted. Patients with severe burns may also become depleted. Patients with acrodermatitis enteropathica have a defect in intestinal zinc absorption and may show a severe deficiency.	Yes
Patient Preparation	Serum zinc concentrations may fall following a meal, therefore assessment of zinc status should ideally be made on a fasting sample.	Yes
Specimen Container	Serum (both gel or plain collection tubes) is the preferred specimen. However both Lithium Heparin plasma and EDTA plasma are also suitable.	Yes
Container Image		Yes
Primary Sample Type	Blood	Yes
Minimum Volume Required <small>(<math>\mu</math>L for serum//blood/urine etc. unless otherwise stated)</small>	1.0mL	Yes
Special Precautions / Requirements	Haemolysed samples are not suitable for analysis due to the release of zinc from erythrocytes.	Yes
Transport and Storage Requirements	None.	Yes
Telepath Test Code	ZN	Yes
National Pathology Code <small>(READ/SNOMED CT)</small>		No
Reference Interval(s)	12.0 – 25.0 $\mu$ mol/L	Yes

Telephone Action Limit(s)	None.	Yes
Measurement Units	µmol/L	Yes
Clinical Interpretation	<p>The clinical effects of zinc deficiency include dermatitis and delayed wound healing. Zinc is relatively non-toxic but raised levels may be produced as a result of industrial exposure or excess administration. Drowsiness, lethargy and nausea and vomiting have been associated with exposure to high concentrations of zinc.</p> <p>Correct interpretation of trace element deficiency states requires assessment of plasma albumin and total protein as these are often low in post-operative/trauma states associated with plasma dilution. e.g . A plasma/serum [zinc] of 3.5 µmol/L associated with an albumin of 10g/L may not indicate a deficiency, whereas a plasma/serum [zinc] of 5.0 µmol/l associated with an albumin of 40g/L does.</p>	Yes
Useful Links / Guidelines	n/a	Yes
Common Interferences / Causes of Spurious Results	Haemolysed samples will have a falsely elevated zinc level due to release from erythrocytes. Due to the trace levels at which the analyte is naturally present, falsely elevated values may be obtained due to sample contamination from skin, dust or other environmental factors.	Yes
Availability of Clinical Advice	Clinical advice may be obtained from the duty biochemist on 0151 706 4755.	Yes
Significant Change Values	n/a	No
Testing Frequency / Minimum Re-testing Interval	n/a	Yes
Related tests	Cu and Se are both measured in the same panel of analytes.	Yes
Technology & Analytical Principle Used	Inductively coupled plasma mass spectrometry (ICP-MS) using collision cell.	Yes
EQA Scheme	TEQAS (as part of NEQAS)	Yes
Laboratory Performed	RLH	Yes
UKAS Accreditation Status	LCL (pending)	Yes

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