

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)	Selenium	Yes
Alternative Name(s) and Keywords	Selenium, Se, TPN (component)	Yes
Discipline/Specialty	Biochemistry	Yes
Description	Selenium is required as a prosthetic group for a number of enzymes including glutathione peroxidase, which forms part of the antioxidant system involved in protecting the cell against oxidation of membranes and other structures by free radicals.	Yes
Clinical Indication	Selenium deficiency (as Keshan disease) is encountered in some areas of the world (e.g. parts of China) where intake is low due to the low selenium content of the soil. Se deficiency is most likely to be encountered, however, in patients on long-term total parenteral nutrition and it is these patients who should be monitored at regular intervals.	Yes
Patient Preparation	There are no particular requirements as to time, or avoidance of food or drink for collection of specimens for serum selenium. Selenium measurement cannot be accurately made in samples from patients that have moderate to high levels of gadolinium in their blood, most commonly found after the use of gadolinium as a radiocontrast material in MRI imaging.	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	1.0mL	Yes
Special Precautions / Requirements	None.	Yes
Transport and Storage Requirements	None.	Yes
Telepath Test Code	SE	Yes

National Pathology Code (READ/SNOMED CT)		No
Reference Interval(s)	0.6 – 1.5 µmol/L	Yes
Telephone Action Limit(s)	None.	Yes
Measurement Units	µmol/L	Yes
Clinical Interpretation	Selenium deficiency has been associated with long-term intravenous nutrition, because of the low levels of selenium in the fluids. Clinical symptoms of cardiomyopathy, muscle pain, and muscular weakness are responsive to selenium supplementation, but are not seen in all patients with extremely low selenium status, indicating that there may be other interacting factors. Even mild to moderate selenium deficiency appears to be responsible for initiation and progression of autoimmune thyroid disorders.	Yes
Useful Links / Guidelines	n/a	Yes
Common Interferences / Causes of Spurious Results	Gadolinium (Gd) present in blood cannot be distinguished from Se and so falsely elevated values may be obtained – for this result Se results are not released on individuals with significant Gd present in the sample. This is most often present after the use of radiocontrast material.	Yes
Availability of Clinical Advice	Interpretation and interference advice available from duty biochemist via LCL customer care on 0151 7064755.	Yes
Significant Change Values	n/a	No
Testing Frequency / Minimum Re-testing Interval	As required.	Yes
Related tests	Cu and Zn measured in same panel.	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

Form completed by: Hannah Fearon

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Change control completed by:

Date:

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