
Lab Dept: Chemistry

Test Name: SELENIUM LEVEL

General Information

Lab Order Codes: SELM

Synonyms: Se

CPT Codes: 84255 - Selenium

Test Includes: Selenium level reported in mcg/L.

Logistics

Test Indications: Monitoring selenium replacement therapy.

Selenium is an essential element. It is a cofactor required to maintain glutathione peroxidase (GSH-Px), an enzyme that catalyzes the degradation of organic hydroperoxides. The absence of selenium correlates with loss of GSH-Px activity and is associated with damage to cell membranes due to accumulation of free radicals.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: SES)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 - 3 days, test set up Monday - Saturday

Special Instructions: [See Container.](#) [See Collection.](#) [See Patient Preparation.](#)

Specimen

Specimen Type: Blood

Container: **Dark Blue top with Red Stripe** [Metal Free Navy (No additive) tube] – available from the laboratory)

Draw Volume: 2.4 mL (Minimum: 0.6 mL) blood

Processed Volume: 0.8 mL (Minimum: 0.2 mL) serum

Note: Submission of the minimum volume will not allow repeat analysis.

Collection: Routine venipuncture using the following procedure.

Royal Blue top, trace element tube: Draw blood into a dark blue top with red stripe trace element blood collection tube with no anticoagulant. Blood must be drawn directly into the tube with the use of a butterfly needle or other stainless steel needle.

Special Processing: Lab Staff: Allow the specimen to clot for 30 minutes. Centrifuge and carefully pour the serum into a Mayo Metal-free, screw-capped polypropylene tube (Mayo Supply T173). **Do Not** insert a pipet to accomplish the transfer and do not ream the clot with a wooden stick. Store and ship serum specimen at refrigerated temperatures. Make sure to result demographic information prior to sending specimen. Forward promptly.

Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

Sample Rejection: Red top tube is not acceptable; specimens other than blood, mislabeled or unlabeled specimens; grossly icteric

Interpretive

Reference Range:

Age:	Reference Range: (ng/mL)
0 – 2 months	45 – 90 mcg/L
3 – 6 months	50 – 120 mcg/L
7 – 9 months	60 – 120 mcg/L
10 – 12 months	70 – 130 mcg/L
13 months – 17 years	70 – 150 mcg/L
> Or = to 18 years	110 – 165 mcg/L

Critical Values: N/A

Limitations:

Selenium is quite volatile; therefore, careful specimen collection is necessary to ensure accurate results. High concentrations of gadolinium and iodine and barium are known to interfere with most metals test. If either gadolinium or iodine or barium-containing contrast media has been administered, a specimen cannot be collected for 96 hours.

Methodology:

Dynamic Reaction Cell Inductively Coupled Plasma Mass Spectrometry (DRC-ICP-MS)

References:

[Mayo Medical Laboratories](#) (November 2017)

Updates:

11/11/2008: Reference range previously listed as 95 - 165 ng/mL for all ages. Now separated into pediatric ranges.

5/31/2011: Reference range update.

11/23/2016: Minimum draw volume update due to short samples.

2/14/2017: Tube update.

11/8/2017: Collection volume update.

12/15/2022: Reference range and units updated.