
Overview**Useful For**

Assessment of cerebrospinal fluid (CSF) IgG/albumin ratio in the absence of a paired CSF and serum specimen

Method Name

Nephelometry

NY State Available

Yes

Specimen**Specimen Type**

CSF

Ordering Guidance

The cerebrospinal fluid (CSF) index in which the CSF IgG/albumin ratio is compared to the serum IgG/albumin ratio aids in the diagnosis of individuals with multiple sclerosis. See SFIN / Cerebrospinal Fluid (CSF) IgG Index, Serum and Spinal Fluid.

Specimen Required

Collection Container/Tube: Sterile vial

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Reject Due To

Gross hemolysis OK

Gross lipemia OK

Gross icterus OK

Specimen Minimum Volume

0.5 mL

Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---------------|--------------------------|---------|-------------------|
| CSF | Refrigerated (preferred) | 28 days | |
| | Frozen | 28 days | |
| | Ambient | 14 days | |

Clinical & Interpretive

Clinical Information

Elevation of IgG levels in the cerebrospinal fluid (CSF) of patients with inflammatory diseases of the central nervous system (CNS) (multiple sclerosis [MS], neurosyphilis, acute inflammatory polyradiculoneuropathy, subacute sclerosing panencephalitis) is due to local CNS synthesis of IgG.

The 2 most commonly used diagnostic laboratory tests for MS are CSF index and oligoclonal banding. The CSF index is the CSF IgG to CSF albumin ratio compared to the serum IgG to serum albumin ratio. The CSF index is therefore an indicator of the relative amount of CSF IgG compared to serum, and any increase in the index is a reflection of IgG production in the CNS. The IgG synthesis rate is a mathematical manipulation of the CSF index data and can also be used as a marker for CNS inflammatory diseases.

Reference Values

CSF IgG: 0.0-8.1 mg/dL

CSF albumin: 0.0-27.0 mg/dL

CSF IgG/albumin: 0.00-0.21

Interpretation

Cerebrospinal fluid IgG index is positive (elevated) in approximately 80% of patients with multiple sclerosis.

Cautions

The cerebrospinal fluid (CSF) index can be elevated in other inflammatory demyelinating diseases such as neurosyphilis, acute inflammatory polyradiculoneuropathy, and subacute sclerosing panencephalitis. Oligoclonal banding in CSF is slightly more sensitive (85%) than the CSF index. The use of CSF index plus oligoclonal banding has been reported to increase the sensitivity to over 90%.

Clinical Reference

1. Tourtellotte WW, Walsh MJ, Baumhefner RW, Staugaitis SM, Shapshak P: The current status of multiple sclerosis intra-blood-brain-barrier IgG synthesis. *Ann NY Acad Sci.* 1984;436:52-67
2. Bloomer LC, Bray PF: Relative value of three laboratory methods in the diagnosis of multiple sclerosis. *Clin Chem.* 1981

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3. Hische EA, van der Helm HJ: Rate of synthesis of IgG within the blood-brain barrier and the IgG index compared in the diagnosis of multiple sclerosis. Clin Chem. 1987 Jan;33(1):113-114

4. Swanson JW: Multiple sclerosis: update in diagnosis and review of prognostic factors. Mayo Clin Proc. 1989 May;64(5):577-586

5. Markowitz H, Kokmen E: Neurologic diseases and the cerebrospinal fluid immunoglobulin profile. Mayo Clin Proc. 1983 Apr;58(4):273-274

Performance

Method Description

The cerebrospinal fluid (CSF) and albumin are determined by immunonephelometry on a Siemens Nephelometer II. CSF IgG and albumin, and CSF IgG/albumin ratios are reported. (Instruction manual: Siemens Nephelometer II Operations. Siemens, Inc; Version 2.3, 2008; Addendum to the Instruction Manual 2.3, 08/2017)

PDF Report

No

Specimen Retention Time

2 weeks

Performing Laboratory Location

Rochester

Fees & Codes

Test Classification

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

82042

82784

LOINC® Information

| Test ID | Test Order Name | Order LOINC Value |
|---------|------------------------|-------------------|
| CASF | IgG/Albumin Ratio, CSF | 2470-3 |

| Result ID | Reporting Name | LOINC® |
|-----------|------------------|--------|
| IGG_C | IgG, CSF | 2464-6 |
| ALB_C | Albumin, CSF | 1746-7 |
| AIGAC | IgG/Albumin, CSF | 2470-3 |