

## 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

### Specimen Minimum Volume

0.5 mL

### Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

### Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
CSF	Refrigerated (preferred)	28 days	
	Frozen	28 days	

	Ambient	14 days	
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## 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 Dec;27(12):2011-2013
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

**Day(s) Performed**

Monday through Friday

**Report Available**

Same day/1 to 2 days

**Specimen Retention Time**

2 weeks

**Performing Laboratory Location**

Rochester

**Fees & Codes****Fees**

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact [Customer Service](#).

**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	Test Result Name	Result LOINC® Value
IGG_C	IgG, CSF	2464-6
ALB_C	Albumin, CSF	1746-7
AIGAC	IgG/Albumin, CSF	2470-3