

## **Cerebrospinal Fluid (CSF)**

Cerebrospinal fluid (CSF) is a clear, colorless liquid that bathes the central nervous system. While the primary function of CSF is to cushion the brain within the skull and serve as a shock absorber for the central nervous system, CSF also circulates nutrients and chemicals filtered from the blood and removes waste products from the brain. Examining the fluid can be useful in diagnosing many diseases of the nervous system, including MS.

### **Fluid Obtained by ‘Spinal Tap’**

CSF is obtained by doing a lumbar puncture or “spinal tap.” A long, thin, hollow needle is inserted between two bones in the lower spine and into the space where the CSF circulates. One to two tablespoonfuls of the fluid are then withdrawn.

The CSF of people with MS usually contains elevated levels of IgG antibodies as well as a specific group of proteins called oligoclonal bands. Occasionally there are also certain proteins that are the breakdown products of myelin. These findings indicate an abnormal autoimmune response within the central nervous system, meaning that the body is producing an immune response against itself.

### **Other Tests Also Needed**

An abnormal autoimmune response in CSF is found in a number of other diseases, so the test is not specific for MS. Conversely, some 5-10% of patients with MS never show these CSF abnormalities.

Therefore, CSF analysis by itself cannot confirm or rule out a diagnosis of MS. It must be part of the total clinical picture that takes into account other diagnostic procedures such as evoked potentials and magnetic resonance imaging (MRI).

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### **See also...**

#### **Sourcebook**

- Diagnosis
- Evoked Potentials
- Immunoglobulin
- Magnetic Resonance Imaging (MRI)
- Myelin

#### **Society Web Resources**

- Diagnosis of MS  
[www.nationalmssociety.org/Diagnosis](http://www.nationalmssociety.org/Diagnosis)
- For People Newly Diagnosed  
[www.nationalmssociety.org/NewlyDiagnosed](http://www.nationalmssociety.org/NewlyDiagnosed)

## Book

Kalb R. (ed.) *Multiple Sclerosis: The Questions You Have; The Answers You Need* (3<sup>rd</sup> ed.). New York: Demos Medical Publishing, 2004.

—Ch. 2 Neurology

The National Multiple Sclerosis Society is proud to be a source of information about multiple sclerosis. Our comments are based on professional advice, published experience, and expert opinion, but do not represent individual therapeutic recommendations or prescription. For specific information and advice, consult your personal physician.

To contact your chapter, call **1-800-FIGHT-MS** (1-800-344-4867) or visit the National MS Society web site: [www.nationalmssociety.org](http://www.nationalmssociety.org).

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