



### I. Anti-MBP Antibodies Determined by ELISA

The results of serum anti-MBP antibodies in multiple sclerosis and other neurologic diseases are shown in Figure 1. Five of the 16 multiple sclerosis samples (31.2%) had positive anti-MBP antibodies (values above cut-off level, i.e., OD greater than 2 standard deviations). In other neurologic diseases, 7/30 (23.3%) patients with patients with other immune-mediated neurologic diseases, 2/21 (9.5%) patients with central nervous system infection (one with eosinophilic meningitis, another with cryptococcal meningitis), 2/12 (16.7%) with muscle dystrophy and 3/13 (23.1%) patients with miscellaneous neurologic diseases (one with dizziness, one with spinal cord tumor, and one with brain tumor) showed anti-MBP antibodies reactivity. No anti-MBP antibodies reactivity was found in serum from patients with cerebrovascular accidents, and central nervous system degenerative diseases.

Figure 2. further illustrates that in other immune-mediated neurologic other than multiple sclerosis, serum antibodies to MBP were found in the following : 5/14 (35.7%) patients with Guillain Barre' syndrome 1/3 patients with post-infectious encephalomyelitis, 1/1 patient with post-vaccinal myelitis, but none of the 9 neuropsychiatric SLE and of the 3 myasthenia gravis patients.

The results of cerebrospinal fluid anti-MBP antibody levels are shown in Figure 3. Values above 5 standard deviations are regarded as positive antibody to MBP. In patients with MS 2/10 (20%) had anti-MBP antibodies. Another 48 subjects showed the following results : 6/19 patients with immune-mediated neurologic diseases other than MS (these 6 patients comprised of 4 patients with GBS, one patient with post-vaccinal myelitis, Figure 4), 8/18 patients with central nervous system infections (2 patients with tuberculous meningitis, 2 patients with cryptococcal meningitis, 2 with gnathostomiasis, one with neurocysticercosis and another one with herpes simplex encephalitis), but none of 3 cerebrovascular accidents, and of 1 degenerative disease showed positive CSF antibodies to MBP by ELISA. Table 3. summarizes the anti-MBP antibodies finding both in serum and cerebrospinal fluid samples.

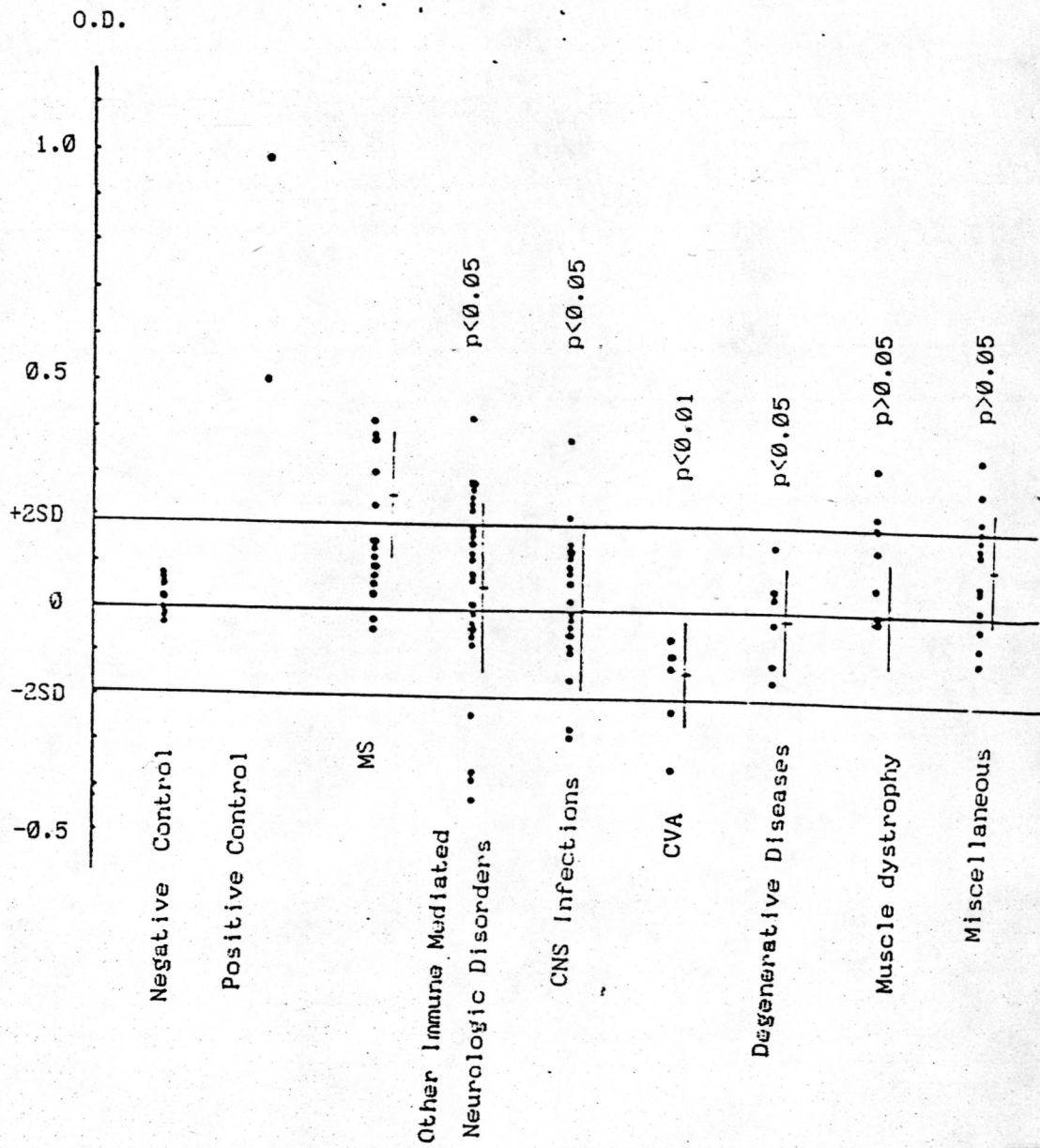


Figure 1. Serum antibody levels to Myelin Basic Protein in Multiple Sclerosis and other Neurologic diseases.

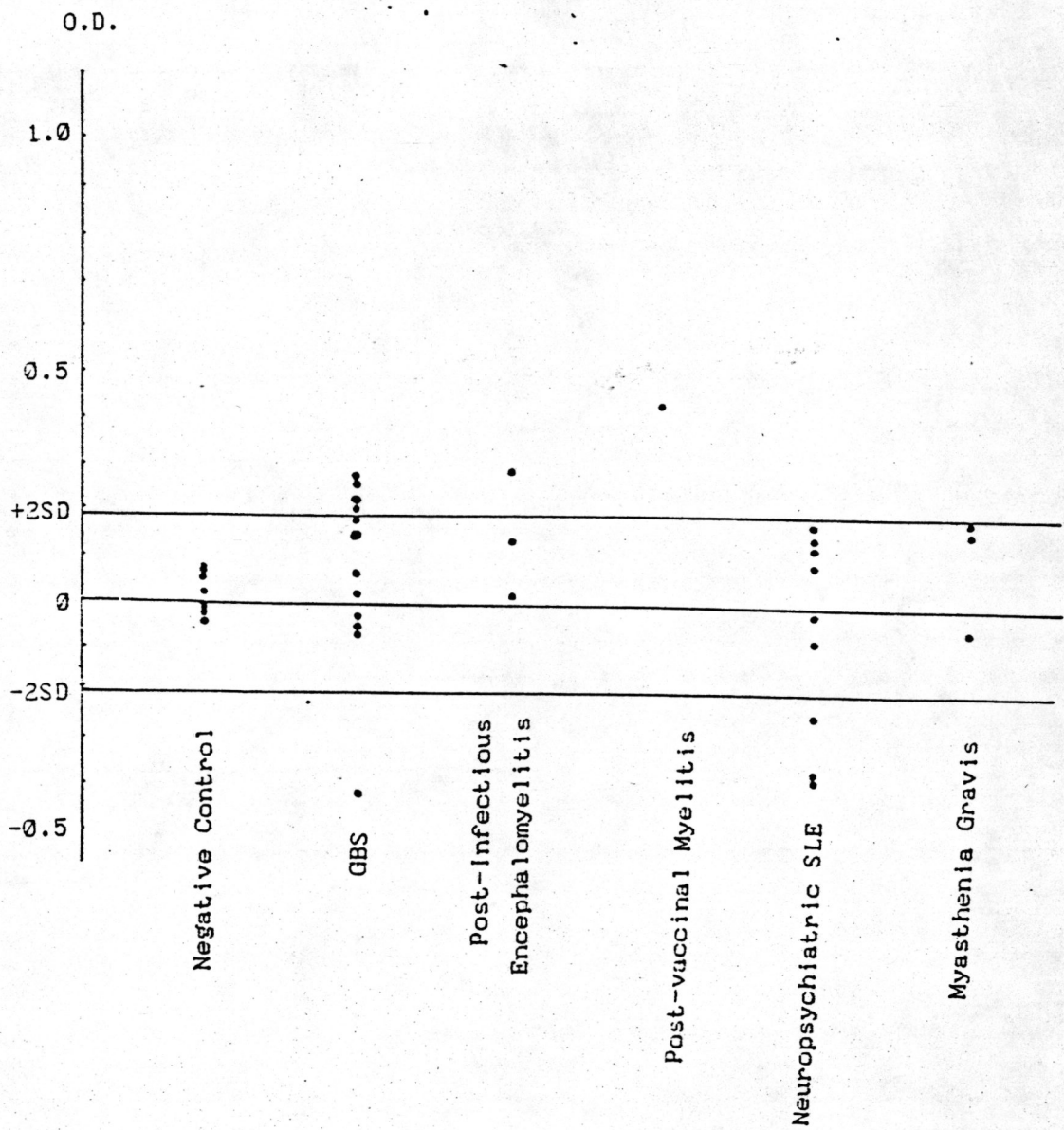


Figure 2. Serum antibody levels to Myelin Basic Protein in Immune Mediated Neurological Diseases other than Multiple Sclerosis.

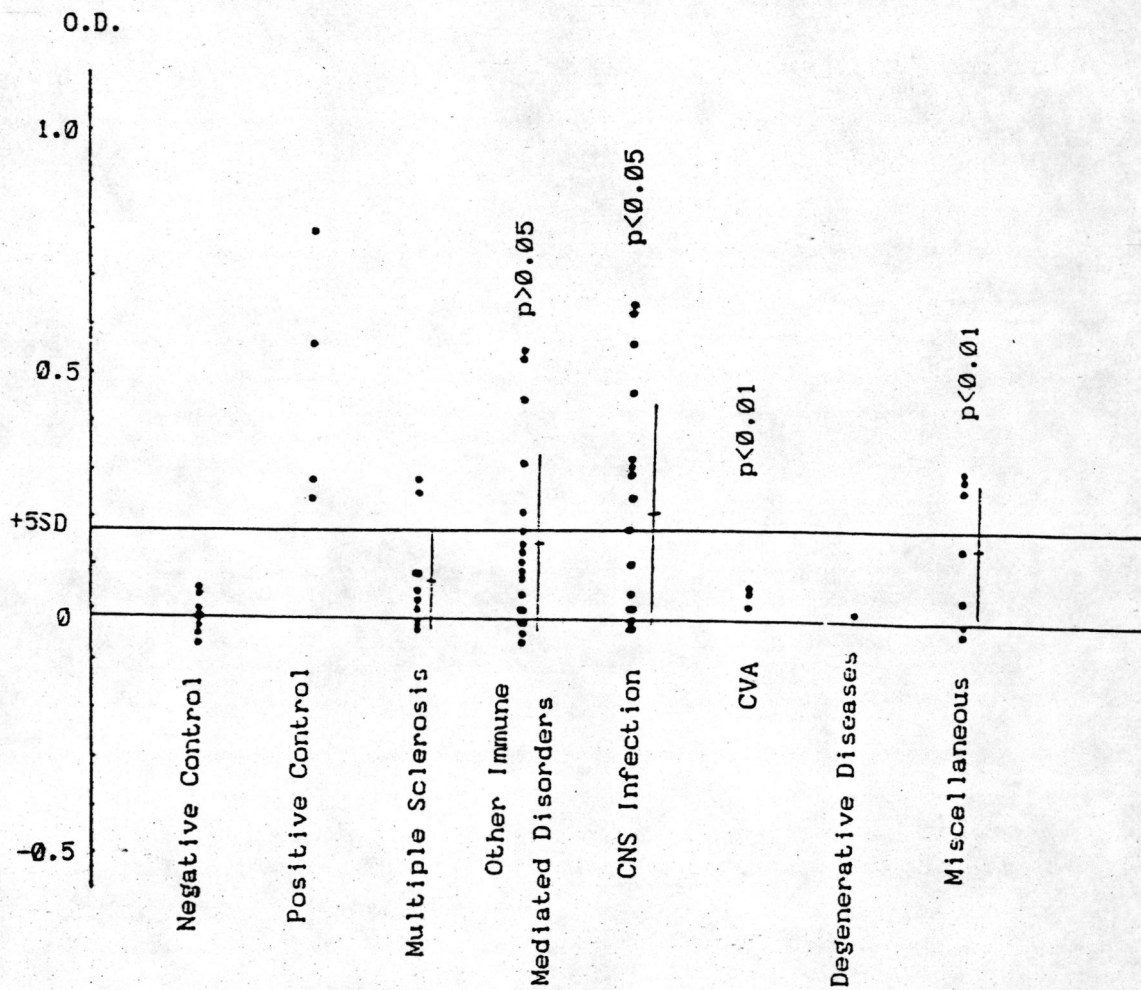


Figure 3. Cerebrospinal fluid antibody levels to Myelin Basic Protein in Multiple Sclerosis and Neurological Diseases.

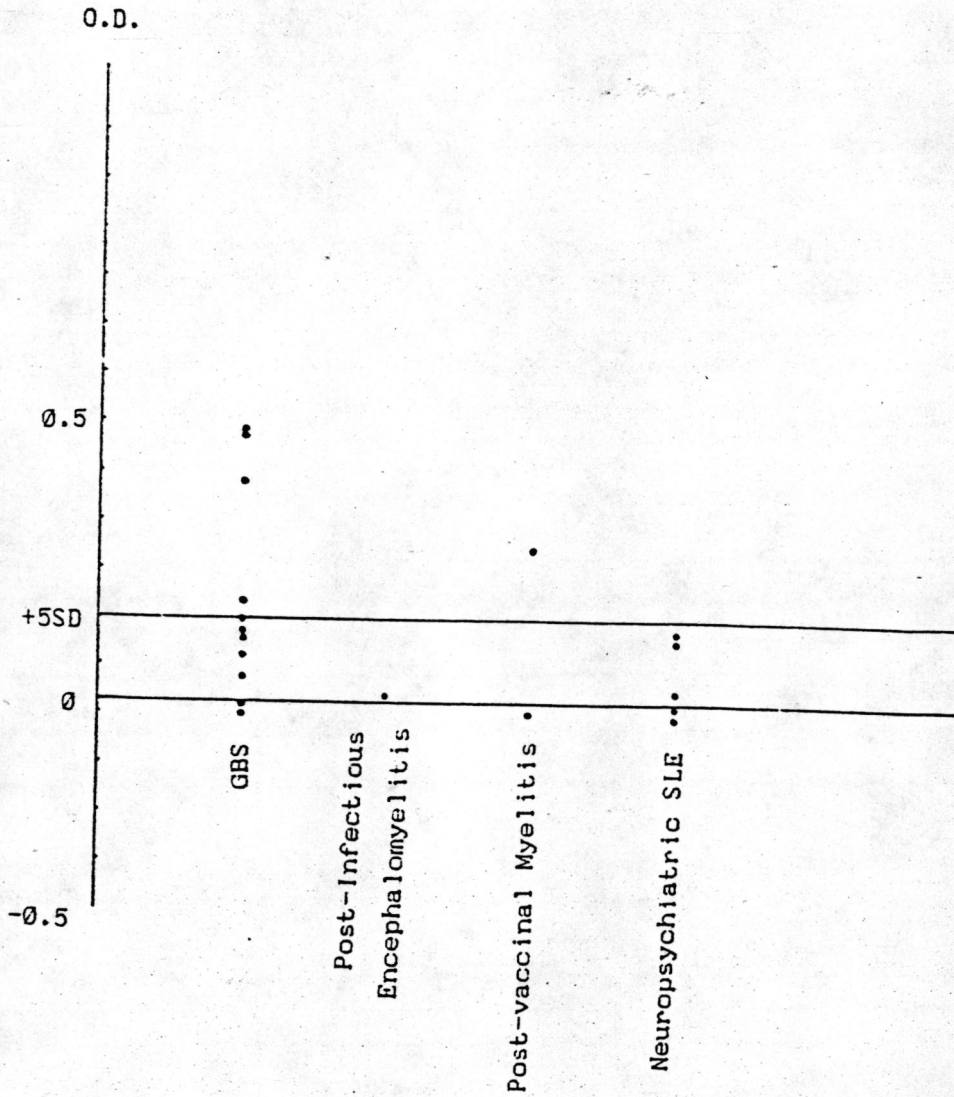


Figure 4. Cerebrospinal fluid antibody to Myelin Basic Protein in Immune Mediated Neurological Disorders other than Multiple Sclerosis.

**Table 3** Antibody to Myelin Basic Protein in Patients with Multiple Sclerosis and Other Neurologic Diseases.

Neurologic disease	Serum Anti-MBP Ab	CSF Anti-MBP Ab
	No. positive/tested(%) (Total = 104)	No. positive/tested(%) (Total = 58)
Multiple sclerosis	6/16 (31.2%)	2/10 (20%)
Guillain Barre'Syndrome	5/14 (35.7%)	4/11 (36.4%)
Post-infectious		
encephalomyelitis	1/3 (33.3%)	0/1
Post-vaccinal myelitis	1/1	1/2
Neuropsychiatric SLE	0/9	0/5
Myasthenia gravis	0/3	-
CNS infections :		
Tuberculous meningitis	2/5 (40%)	2/3 (66.7%)
Cryptococcal meningitis	1/2	2/2
Neurocysticercosis	0/3	1/1
CNS gnathostomiasis	0/1	2/2
Eosinophilic meningitis	1/1	0/1
Rabies encephalitis	0/5	0/2
viral encephalitis	0/4	1 <sup>a</sup> /7
Cerebrovascular accidents	0/6	0/3
CNS degenerative disease	0/6	0/1
Muscle dystrophy	2/12	-
Miscellaneous	3 <sup>b</sup> /13	3 <sup>c</sup> /7

- " a " = patient with herpes simplex encephalitis.
- " b " = 1 patient each with dizziness, spinal cord tumor and brain tumor.
- " c " = 1 patient each with plasmacytoma with neuropathy, benign monoclonal IgA gammopathy with neuropathy and spinal cord tumor.

#### CSF analysis in MS patients

The results are shown in Table 4. This study revealed that all except 2 of 12 patients with multiple sclerosis had increased CSF IgG/CSF albumin ratio, and all but 3 had increased CSF IgG index and IgG synthesis. This indicated that 75-83% of MS patients had intrathecal IgG synthesis.

**Table 4** CSF analysis in MS patients (patients positive intrathecal IgG synthesis/patients tested)

	IgG/Alb <sub>e</sub> (>0.25)*	IgG index (>0.77)*	IgG synthesis (>3 mg/day)*
MS	10/12 (83.3%)	9/12 (75 %) <sup>+</sup>	9/12 (75 %) <sup>+</sup>

\* = values that indicate intrathecal IgG synthesis.

+ = percentage of patients with intrathecal IgG synthesis.