

### CEREBROSPINAL FLUID ABNORMALITIES IN VARIOUS INFECTIONS

Condition	Pressure (mm H <sub>2</sub> O)	Cells/mL	Predominant Cell Type	Glucose (mg/dL)	Protein (mg/dL)	Examples
Normal	100–200	0–5	Lymphocytes	50–100	20–45	—
Bacterial or other purulent meningitis	> 300	100–10,000	PMNs	< 40 (< 50% of serum glucose)	> 100*	Acute bacterial meningitis, fulminant fungal meningitis, fulminant amebic meningoencephalitis
Aseptic meningitis	N or ↑	10–1000	Lymphocytes <sup>†</sup>	N	N or ↑ (< 100 mg/dL)	Most commonly, viral meningitis but also many other infectious and noninfectious causes, including partially treated bacterial meningitis and early listerial meningitis
Subacute or chronic meningitis	N or ↑	25–2000	Lymphocytes <sup>‡</sup>	↓	↑ or ↑↑	Meningitis due to TB, cryptococci, other fungi, sarcoidosis, Lyme disease, syphilis, cysticercosis, or tumor

\*Up to 14% of patients have a CSF protein level < 100 mg/dL on the initial lumbar puncture.

<sup>†</sup> PMNs may be present during the first 24–48 h of infection.

<sup>‡</sup> Mixed pleocytosis with lymphocytic predominance occurs in TB meningitis.

PMNs = polymorphonuclear leukocytes; ↑ = increased; ↑↑ = greatly increased; ↓ = decreased; N = normal.

NOTE: Figures given for pressure, cell count, and protein are approximations; exceptions are common. Similarly, PMNs may predominate in disorders usually characterized by lymphocyte response, especially early in the course of viral infections or tuberculous meningitis. Alterations in glucose are less variable and more reliable.

NOTE : CSF pleocytosis may be blunted or absent in immunocompromised patients.