

Central nervous system (CNS) specimens

1. CSF

a. Lumbar puncture

- (1) Clean the puncture site with antiseptic solution and alcohol before needle insertion to prevent introduction of infection.
- (2) Insert a needle with stylet at the L3-L4, L4-L5, or L5-S1 interspace. When the subarachnoid space is reached, remove the stylet and spinal fluid will appear in the needle hub.
- (3) Slowly drain the CSF into the sterile leak-proof tubes. Three tubes are generally required for microbiology, hematology, and chemistry testing. The second tube drawn will generally go to microbiology, and the last tube drawn will generally go to hematology. (In traumatic taps, the CSF will often clear as the later tubes are collected.) *Note: Always send the most turbid tube to microbiology.*

b. Ommaya reservoir fluid

- (1) Clean the Ommaya reservoir site with antiseptic solution and alcohol prior to removal of Ommaya fluid to prevent infection.
- (2) Remove Ommaya fluid via the Ommaya reservoir unit, and place it in a sterile tube.

c. Brain abscess

Ninety percent of brain abscesses will grow anaerobic bacteria. Use E-swab transport system for anaerobes.

d. CNS biopsy samples

Obtain a biopsy sample from the lesion at surgery, and send it to the microbiology laboratory in an E-swab transport system.

Recommended Collection volumes for CNS specimens

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| Bacteria | 1-2 ML fluid | Send cloudiest CSF specimen to microbiology laboratory immediately; tube no. 2 is preferred. |
| Fungi | 2 ML fluid | Rule out <i>Cryptococcus spp.</i> , <i>Coccidioides immitis</i> |
| Anaerobes | NA | Brain abscess or CNS biopsy specimens only |
| Virus | 1-2 ML fluid | Refrigerate specimen for viral culture and for molecular testing. Each molecular test requires 0.5 ML of specimen. |