



Cerebrospinal Fluid (CSF) Collection Guidelines

Collection

- Collect appropriate volumes of CSF in sequential order into four screw capped tubes.
 - Tubes should be sterile and have volume graduations.
 - Use tubes provided in the standard pre-packaged lumbar puncture kits or CSF collection kits. If not available, individually wrapped tubes may be practical during collection to maintain a sterile field.
 - Where practical, bulk wrapped sterile tubes are also acceptable, such as the 15 mL Sarstedt tubes (AHS 62.554.002).
- Affix label and number tubes consecutively with a pen, in the space provided on the label.
Note: Labels printed for Non-Gynecological Cytology orders do not provide a space to hand write tube#. Please don't use these labels, just put them in the biohazard bag along with the specimens.
- If tube labels are not numbered, the laboratory will presume the numbers etched directly on each tube indicate the correct collection order.

Volume Requirements

- Refer to the table (page 2) for required volumes which are divided into Minimum (Min.) and Ideal:
 - Minimum/Neonate volume – the volume of sample the laboratory uses to determine if a call to clinician is necessary to triage testing. If minimum volume requirements cannot be met for all ordered tests, the laboratory will call the clinician to inquire which tests can be cancelled.
 - Ideal volume – recommended volume to achieve highest likelihood of obtaining results or maximum sensitivity.
- For tests not listed on page 2, refer to the [Alberta Precision Laboratories Test Directory](#).
- Testing is delayed when insufficient volume of CSF is received, and/or specimens are not collected into separate numbered tubes

Ordering/ Requisition Requirements

- Order all required tests in Connect Care; note that the sequence in which tests are ordered does not affect which tube the test will be performed on. Testing is performed based on the algorithm outlined on page 2.
IMPORTANT: Contact your local laboratory if CSF sample is known or suspected for **CJD** before sending the samples.

Specimen Handling and Transport

- Take CSF specimens **immediately** (within 15 minutes) to the laboratory after collection; the pneumatic tube system may be used for transport to the laboratory.
- **Do not** refrigerate for any of the common tests listed on page 2. Some uncommon CSF tests that do require alternate handling and transport conditions have these indicated in the [Alberta Precision Laboratories Test Directory](#).
- **Do not** leave specimen on the reception counter; give directly to laboratory staff.

Laboratory Staff only

- CSF specimens with **CJD requests**: follow Transportation of Dangerous Goods (TDG) protocol and APL Biological and Chemical Exposure Response Plan (BCERP) procedures.



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Preferred Tube for testing	Routine Test Request	Volume (mL)		Additional Test Requests	Volume (mL)	
		Min/ Neonate	Ideal		Min/ Neonate	Ideal
#1 Hematology	Cell Count, CSF ¹	0.5	0.5			
#2- STERILE ⁴ Microbiology	CSF Culture, Routine	1.0	1.0	Fungal Culture (includes cryptococcal antigen)	3.0	3.0
#3- STERILE ⁴ Microbiology	Mycobacteria Culture Syphilis VDRL	1.0 0.5	7.0 1.0	Creutzfeldt-Jakob Disease Protein Screen CNS Infection NAT tests (combined volume, except REF) ²	2.0 0.5	2.0 1.0
#4 Hematology, Cytology & Chemistry	Cell Count, CSF ¹ (+/- Differential) Protein, CSF Glucose, CSF Non-Gynecological Cytology Leukemia/Lymphoma Immunophenotyping Protein Electrophoresis, CSF, Panel ³ Immunoglobulin G, CSF Albumin, CSF	0.5 0.15 0.15 1.0 2.0 0.5 0.3 0.3	1.0 0.5 0.5 2.0 10.0 1.5 0.5 0.5	Lactate Dehydrogenase (LD), CSF Lactate, CSF Rheumatoid Factor, Body Fluid Angiotensins Converting Enzyme (ACE), CSF Beta HCG, Quantitative, CSF Alpha Fetoprotein (AFP), CSF	0.5 0.2 0.2 0.2 0.2 0.2	1.0 0.5 0.5 0.5 1.0 1.0
≥#4	All other tests are preferred in Tube #4 (or higher); see Alberta Precision Laboratories Test Directory					

1. If “Subarachnoid Hemorrhage” is specified when ordering “Cell Count, CSF” then both Tube 1 and 4 will be assessed for RBCs. TNC (ie. WBC) count +/- differential is performed on tube 4.
2. The combined volume for microbial NAT (Nucleic acid Amplification Technique) tests performed within Alberta is 0.5 mL minimum or 1.0 mL ideally. These volumes will be adequate even if multiple such tests are ordered. The caveat is that this only applies to tests done in Alberta, identifiable by the lack of the suffix “Referred Test” or “REF” in the test name. Any tests with the “Referred Test” or “REF” in the name are done outside Alberta, and will require additional volumes collected for each (see: [Alberta Precision Laboratories Test Directory](#) for details).
3. “Protein Electrophoresis, CSF, Panel” always includes Immunoglobulin G and Albumin testing, but these can also be ordered separately. Please also order “Protein Electrophoresis, Serum, Panel” when ordering “Protein Electrophoresis, CSF, Panel”.
4. All tests listed under Tube #2 & Tube #3 must be kept sterile after collection (not to be opened/aliquoted by lab staff, except under sterile conditions). All other tests can be aliquoted using only standard precautions.