

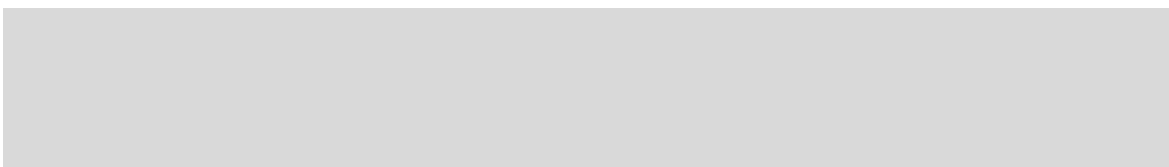
Cerebrospinal Fluid

Synonyms	CSF, LP, lumbar puncture
Clinical Indication	<p>CSF samples are usually taken for the investigation of meningitis. This may be acute or chronic and infective or non-infective.</p> <p>CSF samples from suspected CJD cases must only be collected by prior arrangement with the Requesting Clinician and the National CJD Reference & Research Unit in Edinburgh. The Requesting Clinician will contact the CJD Surveillance Unit in Edinburgh (Tel 0131 537 3075) with clinical details and get agreement from the CJD Unit to test prior to sample collection to assess the likelihood of CJD.</p>
Part of Profile / See Also	<p>Routine investigations:</p> <p>Culture for Bacteria (& Fungi where indicated) - Antibiotic sensitivity and identification will be performed on all significant isolates. Microscopy for presence of WBCs, RBCs and organisms - Cell count and WBC differential will be performed if applicable.</p> <p>Additional investigations:</p> <p>Further testing may be indicated as a result of initial microscopic examination.</p> <p>Other investigations may also be carried out if specifically requested e.g. Mycobacteria, Cryptococcus (CrAg), Syphilis, 16S rRNA PCR etc.</p> <p>Please refer to: PF-PTD-215 for AFB/Mycobacteria investigations PF-PTD-333 for Cryptococcal Antigen test</p>
Request Form	<p>ICE or Medway order comms form (handwritten request - only if order comms not available)</p> <p>For CJD, the appropriate CSF RT-QulC form must also be completed and accompany the sample to the Ref Lab.</p> <p>The CJD Surveillance Unit no longer arranges the shipment of the CSF samples to their laboratories. The shipment will be arranged by the requesting laboratory. The sender must complete the Surveillance Unit's CSF test request form, which must be emailed to the Surveillance Unit as requested.</p> <p>Provide detailed clinical information, including date of onset, contact with any suspected infection, travel history, immunosuppression and any previous, current or intended, antibiotic therapy.</p>
Availability / Frequency of Analysis	<p>On request.</p> <p>The Microbiology Laboratory MUST be notified prior to sending ALL CSF samples.</p> <p>Telephone the laboratory during normal working hours on 01268 968285/01268 968232</p> <p>Out of hours, contact the on-call Microbiology Biomedical Scientist via the hospital switchboard</p>

Turnaround Time

- 72 hours
- CSF microscopy results should be available within 2 hours of receipt.
- Viral investigations – referred tests - subject to TAT of Reference Lab
- CJD investigations – referred test - Referral Lab TAT of 10-15 working days after receipt of the CSF sample
- Cryptococcal Ag – referred test - Referral Lab TAT of 24 hours
- AFB investigations –
 - Microscopy – weekdays – during normal working hours
 - Microscopy - at weekends and bank holidays - when specifically requested as urgent by clinicians
 - Culture up to 56 days.
 - Fastrack is a specialist referral test and is subject to Referral Lab TATs

Patient Preparation



Sample Requirements

Three CSF fractions should be collected for Microbiological investigations. These should be collected sequentially and labelled 1, 2 & 3 in order of collection.
Separate / additional samples to be sent to Biochemistry for Glucose, Protein, investigation of suspected SAH (last / least blood-stained fraction for Xanthochromia), Oligoclonal banding. CSF for CJD investigation i.e., RT QuIC analysis requires a minimum of 0.5 ml of CSF.

Specimen Type

Fluid from lumbar puncture

Volume Container

Ideally a volume of 1ml for each tube



White Capped sterile universal CE marked

Reference Range & Units



Interferences

Presence of blood, an elevated protein > 1g/l or >20 WBCs will invalidate the RT QuIC CJD test.

Interpretation & Clinical

A WBC:RBC ratio of 1:500 to 1:1000 is generally regarded as not indicative of infection.

Normal CSF values:

Leucocytes	Neonates	less 28 days	0-30 cells x 10 ⁶ /L
	Infants	1 to 12 months	0-15 cells x 10 ⁶ /L
	Children/Adults	1 year +	0-5 cells x 10 ⁶ /L
Erythrocytes	No RBCs should be present in normal CSF		

The presence of RBCs in CSF can result from an intra-cerebral or sub-arachnoid haemorrhage or from a traumatic lumbar puncture (LP) in which peripheral blood contaminates the CSF.

References

PHE SMI B27i6.1 Investigation of Cerebrospinal Fluid

Test code

CSF, CJD, BPCR, PCRC, RCRA, JCAA



Accredited to
ISO 15189:2022

Lab Handling

Routine MC&S - Process on receipt

CJD referrals – CSF to be frozen (preferably at minus 70°C to minus 80°C) within 2-3 hours of receipt at Pathology First Lab. To be transported to CJD Ref Lab on dry ice by arrangement