



# CSF Glucose

## Synonyms

## Clinical Indication

The CSF glucose concentration may be altered in a variety of pathologic conditions. Abnormally low CSF glucose concentrations can occur in bacterial meningitis and mycobacterial, mycoplasmal, and fungal CNS infections.

## Part of Profile / See Also

## Request Form

Combined Pathology manual Blood form or ICE request

## Availability / Frequency of Analysis

On request

## Turnaround Time

Same day

## Patient Preparation

None required.

## Sample Requirements

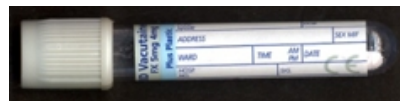
### Specimen Type

CSF

### Volume

Minimum of 0.5 ml.

### Container



CSF within a grey top (fluoride) tube

## Reference Range & Units

The normal CSF-to-serum glucose ratio is approximately 0.6; ventricular CSF has a higher glucose concentration than CSF in the lumbar space by 0.33 to 1.0 mmol/L

## Interferences

It normally takes several hours for the serum glucose to equilibrate with the CSF glucose.

## Interpretation & Clinical

### Decision Value (if applicable)

CSF glucose concentration may be altered in a variety of pathologic conditions. Abnormally low CSF glucose concentrations can occur in bacterial meningitis and mycobacterial, mycoplasmal, and fungal CNS infections. During recovery from meningitis, CSF glucose concentration tends to normalize more rapidly than do the CSF cell count and protein concentration.

The CSF glucose concentration is typically normal during most viral CNS infections, although exceptions have been reported in patients with meningoencephalitis due to mumps, choriomeningitis (LCM), enteroviruses, lymphocytic, herpes simplex, and herpes zoster viruses.

Low CSF glucose concentrations can also be observed in CNS infections due to *M. pneumoniae* and noninfectious processes, including malignant processes infiltrating the meninges, subarachnoid haemorrhage, and in CNS sarcoidosis. However, CSF glucose concentrations less than 1.0 mmol/L are strongly predictive of bacterial meningitis.

The CSF-to-serum glucose ratio has limited utility in neonates and in patients with severe hyperglycemia. CSF glucose levels rarely exceed 16.7 mmol/L even in patients with severe hyperglycemia

## References

Johnson KS and Sexton DJ. Cerebrospinal fluid: Physiology and utility of an examination in disease states In: UpToDate, Post, TW (Ed), UpToDate, Waltham, MA, 2014. Accessed 16/03/2018  
Beckman kit insert.

## Test code

CGLU

## Lab Handling

Centrifuge grey top (fluoride) tube and aliquot into a false bottom tube. Store at 4°C  
Samples stable for 7 days at 2-8°C.  
Samples stable for 2 days at 15-25°C