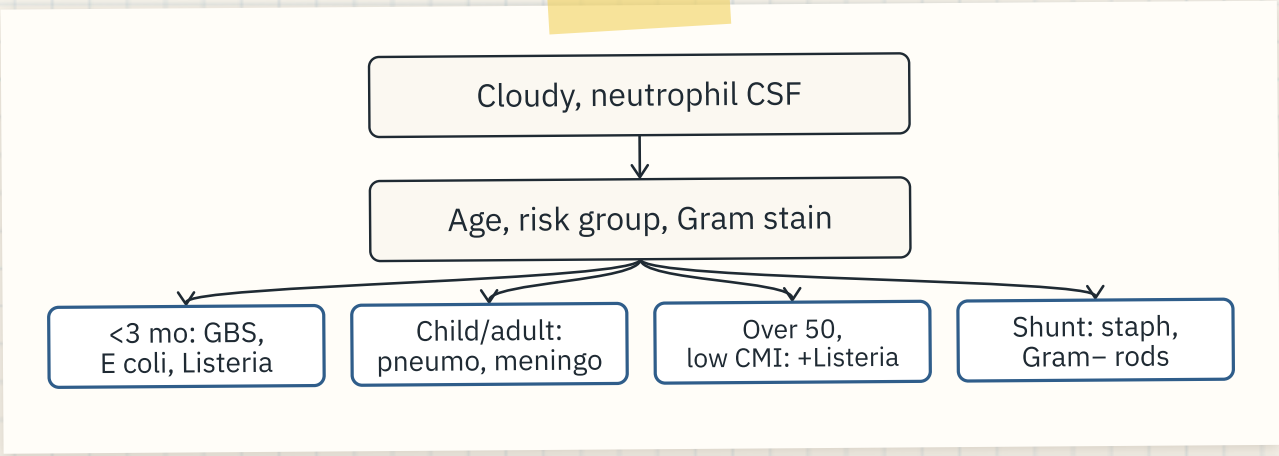
Meningitis organisms by age

Age and risk group pick the bacterium



Step by step

1. Bacterial CSF: neutrophils, high protein, low glucose
2. Gram+: GBS cocci chains, pneumococcus diplococci
3. Gram–: meningococcus diplococci, E coli rods
4. Gram+ rods: Listeria
5. Match age and risk group to the organism

Group	Organisms
Newborn (to ~3 months)	GBS, E coli, Listeria
Older infant, child	Pneumococcus, meningococcus
Adolescent, young adult	Meningococcus (second peak)
Adult	Pneumococcus, meningococcus
Over 50 or weak CMI	Add Listeria
Neurosurgery, shunt	Staph, gram-negative rods

Likely organism by age or risk group

CSF TO BLOOD GLUCOSE RATIO

$$\text{CSF glucose} / \text{blood glucose} \leq 0.4$$

children and adults; newborns use a different cut-off

Rule of thumb

CSF says bacterial; age says which

Example: blood 90, CSF 30 → 1/3, below 0.4

Viral: lymphocytes, normal glucose

Exam traps

- Reading the CSF alone: it does not name the organism.
- Forgetting Listeria after fifty or with weak cell-mediated immunity.
- Using the 0.4 ratio for newborns: they use a different cut-off.

Bacterial meningitis organisms by age and risk group

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/microbiology/bacterial-meningitis-organisms-by-age

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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