Approach to Altered Mental Status

NEUROLOGY & MENTAL STATUS

LR 9.6 — KEY DECISION RULE
Confusion Assessment Method[1]
for delirium (any cause); negative CAM has LR 0.16

Acute change from baseline in arousal, attention or thinking

→ ABCs, vitals, glucose; collateral: baseline, last known well, med changes[12]

→ Exam: GCS, attention, pupils, focal signs, meningismus; CAM or 4AT[1,2]

→ **Any emergency feature?**

Yes →

Emergency: treat now, then find the cause[12]

- Glucose <4 mmol/L: dextrose now ± thiamine[3,4,9]
- Airway at risk or GCS ≤8: call ICU
- Focal deficit, unequal pupils: code stroke
- Fever, stiff neck: cultures, dex + antibiotics[6]
- Seizure ≥5 min: benzodiazepine[5]
- Miosis, slow RR: naloxone[12]

→ **Lorazepam 4 mg IV or midazolam IM; naloxone 0.04 mg IV, titrate[5,12]**

If not: which cause category?

	Metabolic	Infection	Drugs & toxins	Primary CNS	Delirium, multifactorial
CAUSES	• **Hypoglycemia, hypoxia, hypercapnia** • **Wernicke (thiamine deficiency)** • Na, Ca, uremia, liver, endocrine	• **Meningitis, encephalitis** • **Sepsis** • Pneumonia; UTI only if GU symptoms[10]	• **Opioid or sedative toxicity** • **Alcohol or benzo withdrawal** • Serotonin syndrome, NMS, anticholinergics	• **Stroke, ICH, herniation** • **Nonconvulsive status epilepticus** • Post-ictal, subdural, PRES	• Age, dementia, sensory loss + insult[12] • Retention, constipation, pain
CLUES	• Asterixis, multifocal myoclonus[12] • Eye palsy, ataxia, EtOH, poor diet[4] • Hypoglycemia can mimic stroke	• Fever, headache, stiff neck, rash • New seizure; immunosuppressed	• Drugs started, stopped or missed[12] • Toxidrome: pupils, skin, HR, temp	• Focal deficit, gaze deviation, pupils • Unexplained coma; subtle twitching[7]	• No single cause once 1–4 excluded[12] • Hypoactive: quiet, sleepy, missed
WORKUP	• Lytes, Ca, creatinine, LFTs, VBG[12] • TSH, ammonia, cortisol if needed	• Blood cultures, CXR, lactate[10] • CT 1st: focal, seizure, GCS <10, immunosupp.[6]	• Med review; tox screen, levels • Acetaminophen, salicylate; ECG (QTc)	• CT ± CTA head and neck[12] • Urgent EEG if coma unexplained[7] • MRI if CT negative or subacute[12]	• Rescreen daily: CAM or 4AT[1,2] • Bladder scan; bowel and pain review[12]
MANAGE	• Thiamine 200 mg IV TID if Wernicke[4] • Low Na + symptoms: 3% NaCl[11] • Lactulose for liver; NIV for CO2	• Meningitis: dex + antibiotics before CT[6] • Acyclovir if encephalitis possible	• Stop deliriogenic drugs[8] • Benzos only for withdrawal, seizure[8]	• Code stroke; bleed: neurosurgery[12] • Status: benzo, then ASM load[5,12] • HOB 30°; reverse anticoagulant[12]	• Reorient, glasses, sleep, walk[8,12] • Antipsychotic only if unsafe[8,12] • Avoid benzos and restraints[8]

Stethopedia
stethopedia.ca/approach/altered-mental-status

Evidence [1] Wong 2010, JAMA [2] Tieges 2021, Age Ageing [3] Lega 2023, Can J Diabetes [4] Galvin 2010, Eur J Neurol [5] Glauser 2016, Epilepsy Curr [6] van de Beek 2016, Clin Microbiol Infect [7] Towne 2000, Neurology [8] Marcantonio 2017, N Engl J Med [9] Schabelman 2012, J Emerg Med [10] Nicolle 2019, Clin Infect Dis [11] Spasovski 2014, Eur J Endocrinol [12] Manual 2024–25, pp. 193, 198–199, 204, 212