

# Delirium Diagnosis

- [Improving Hospital Delirium Screening and Documentation](#)
- [Evaluating the Effectiveness of Educational Intervention on ICU Nurses' Knowledge of Delirium: A Quasi-Experimental Approach](#)
- [Perioperative polygenic and APOE-based genetic risk assessment for neurocognitive disorders: a biobank study of surgical patients](#)
- [AI and Machine Learning for Detection and Management of Delirium in Care Home Residents](#)
- [Development of a Nomogram Model to Predict the Risk of Postoperative Delirium in Cardiac Surgery Patients](#)
- [Incidence of delirium post cardiac surgery: Discrepancy between clinical observation, DOS scores, and single-lead EEG](#)
- [Early Detection of Sepsis-Associated Encephalopathy Through Polymorphic Delta Waves in Single-Channel EEG: A Case Report](#)
- [Clinical frailty scale at ICU discharge predicts ICU readmission and post-ICU mortality: A retrospective single-center study](#)

---

Unlike [dementia](#), [delirium](#) has an acute onset, motor signs ([tremor](#), [myoclonus](#), [asterixis](#)), slurred speech, altered consciousness (hyperalert/agitated or lethargic, or fluctuations), [hallucinations](#) may be florid.

Consultation-liaison [psychiatry](#) could improve the recognition rate of postoperative delirium in elderly patients, and shorten hospitalization time. The training of mental health knowledge for non-psychiatrists could improve the ability of early identify and treatment of delirium <sup>1)</sup>.

---

It is a corollary of the criteria that a diagnosis of delirium usually cannot be made without a previous assessment, or knowledge, of the affected person's baseline level of cognitive function. In other words, a mentally disabled person who is suffering from this will be operating at their own baseline level of mental ability and would be expected to appear delirious without a baseline mental functional status against which to compare.

## Confusion Assessment Method for the Intensive Care Unit

Early [detection](#) is crucial because the longer a patient experiences delirium the worse it becomes and the harder it is to treat. Currently, identification is through intermittent clinical assessment using standardized tools, like the [Confusion](#) Assessment Method for the [Intensive Care Unit](#). Such tools work well in clinical research but do not translate well into clinical practice because they are subjective, intermittent, and have low [sensitivity](#). As such, healthcare providers using these tools fail to recognize delirium symptoms as much as 80% of the time.

## EEG

EEG shows pronounced diffuse slowing.

Delirium-related biochemical derangement leads to electrical changes in electroencephalographic (EEG) patterns followed by behavioral signs and symptoms. However, continuous EEG monitoring is not feasible due to the cost and the need for skilled interpretation. Studies using limited-lead EEG show large differences between patients with and without delirium while discriminating delirium from other causes. The [Ceribell](#) is a limited-lead device that analyzes EEG. If it is capable of detecting delirium, it would provide an objective physiological monitor to identify delirium before symptom onset. This pilot study was designed to explore relationships between Ceribell and delirium status. Completion of this study will provide a foundation for further research regarding delirium status using the Ceribell data <sup>2)</sup>.

---

Hut SC, Dijkstra-Kersten SM, Numan T, Henriquez NR, Teunissen NW, van den Boogaard M, Leijten FS, Slooter AJ. EEG and clinical assessment in delirium and acute encephalopathy. *Psychiatry Clin Neurosci*. 2021 May 16. doi: 10.1111/pcn.13225. Epub ahead of print. PMID: 33993579.

---

Early [neutrophil-to-lymphocyte ratio](#) (NLR) elevation may also predict delayed-onset [delirium](#), potentially implicating systemic inflammation as a contributory delirium mechanism <sup>3)</sup>.

## Neuroimaging

Older age, headache, coagulopathy, decreased level of consciousness, seizures, and history of falls. Conversely, infection was associated with a reduced yield.

In higher-risk patients and settings, there should be a push toward earlier neuroimaging as indicated by clinical examinations and individual risk factors. In the meta-analysis, the yield of head CT was higher in ICU patients and those who had focal neurological deficits in addition to altered mental status and was especially high in neuro ICU settings <sup>4)</sup>

Neuroimaging should not replace a clinical exam, even in ICU settings; ICU patients should have their sedation reduced to properly test for delirium <sup>5)</sup>.

Delirium has a complex and fluctuating course with underlying causes that are often multifactorial; identifying a CNS lesion does not necessarily exclude other causes, and vice-versa <sup>6)</sup>.

The risks of neuroimaging need to be considered in the decision-making process <sup>7)</sup>.

## CT

The use of CT head to diagnose the etiology of delirium and AMS varied widely and yield has declined. Guidelines and clinical decision support tools could increase the appropriate use of CT head in the

diagnostic etiology of delirium/AMS <sup>8)</sup>.

<sup>1)</sup>

Xie Q, Liu XB, Jing GW, Jiang X, Liu H, Zhong BL, Li Y. The Effect of Consultation-Liaison Psychiatry on Postoperative Delirium in Elderly Hip Fracture Patients in the General Hospital. Orthop Surg. 2023 Jan 3. doi: 10.1111/os.13501. Epub ahead of print. PMID: 36597675.

<sup>2)</sup>

Mulkey MA, Hardin SR, Munro CL, Everhart DE, Kim S, Schoemann AM, Olson DM. Methods of identifying delirium: A research protocol. Res Nurs Health. 2019 May 30. doi: 10.1002/nur.21953. [Epub ahead of print] PubMed PMID: 31148216.

<sup>3)</sup>

Reznik ME, Kalagara R, Moody S, Drake J, Margolis SA, Cizginer S, Mahta A, Rao SS, Stretz C, Wendell LC, Thompson BB, Asaad WF, Furie KL, Jones RN, Daiello LA. Common biomarkers of physiologic stress and associations with delirium in patients with intracerebral hemorrhage. J Crit Care. 2021 Mar 23;64:62-67. doi: 10.1016/j.jcrc.2021.03.009. Epub ahead of print. PMID: 33794468.

<sup>4)</sup>

Madsen TE, Khoury J, Cadena R, et al. Potentially missed diagnosis of ischemic stroke in the Emergency Department in the Greater Cincinnati/Northern Kentucky stroke study. Acad Emerg Med. 2016;23(10):1128-1135. doi:10.1111/acem.13029

<sup>5)</sup>

Venkat A, Cappelen-Smith C, Askar S, et al. Factors associated with stroke misdiagnosis in the emergency department: a retrospective case-control study. Neuroepidemiology. 2018;51(3-4):123-127. doi:10.1159/000491635

<sup>6)</sup>

The 2019 American Geriatrics Society Beers Criteria® Update Expert Panel. American Geriatrics Society 2019 updated AGS Beers criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc. 2019;67(4):674-694. doi:10.1111/jgs.15767

<sup>7)</sup>

Reznik ME, Rudolph JL. "Yield" to the time-brain dilemma: The case for [neuroimaging](#) in delirium. J Am Geriatr Soc. 2023 Jan 6. doi: 10.1111/jgs.18206. Epub ahead of print. PMID: 36606371.

<sup>8)</sup>

Akhtar H, Chaudhry SH, Bortolussi-Courval É, Hanula R, Akhtar A, Nauche B, McDonald EG. Diagnostic yield of CT head in delirium and altered mental status-A systematic review and meta-analysis. J Am Geriatr Soc. 2022 Nov 26. doi: 10.1111/jgs.18134. Epub ahead of print. PMID: 36434820.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

[https://neurosurgerywiki.com/wiki/doku.php?id=delirium\\_diagnosis](https://neurosurgerywiki.com/wiki/doku.php?id=delirium_diagnosis)

Last update: **2024/06/07 02:55**

