

Delirium is a Medical Emergency, Not a Nuisance of Aging.

A Clinical Action Pathway
for Australian Hospitals and
Emergency Departments.

**Affects 10–30% of
hospitalised adults.
Up to 66% of cases
are missed.**

The 66% Missed Rate and the Cost of Inaction.

The Incidence Reality

10–30% prevalence in general medical wards. Spikes to 35–65% in post-operative hip fracture patients and 45–87% in the ICU.

The Diagnostic Blind Spot

Up to two-thirds (66%) of delirium cases in Australian hospitals are not identified at presentation. Under-recognition is the greatest risk factor for poor outcomes.

The Systemic Toll

Carries a 1.9- to 3.2-fold increase in in-hospital mortality (22–76% at one year). Costs the Australian healthcare system \$1.7 billion annually. Accelerates cognitive decline and new aged-care placements.

The Subtype Spectrum: The Quietest Patients Are in the Most Danger.

Hypoactive (Most Common, Most Missed)

- **Features:** Lethargy, decreased motor activity, apathy, flat affect, withdrawal.
- **Clinical Context:** Characteristic of hepatic encephalopathy and medication-induced cases.
- **The Danger:** Routinely missed. Never wait for agitation; routine CAM screening is mandatory.


Mixed (The Hallmarks of Fluctuation)

- **Features:** Alternates between hypoactive and hyperactive states.
- **Clinical Context:** The most common overall pattern in hospitalised older adults.
- **The Danger:** Requires serial CAM assessments (every 8–12h) to capture the fluctuation.

Hyperactive (Often Identified)

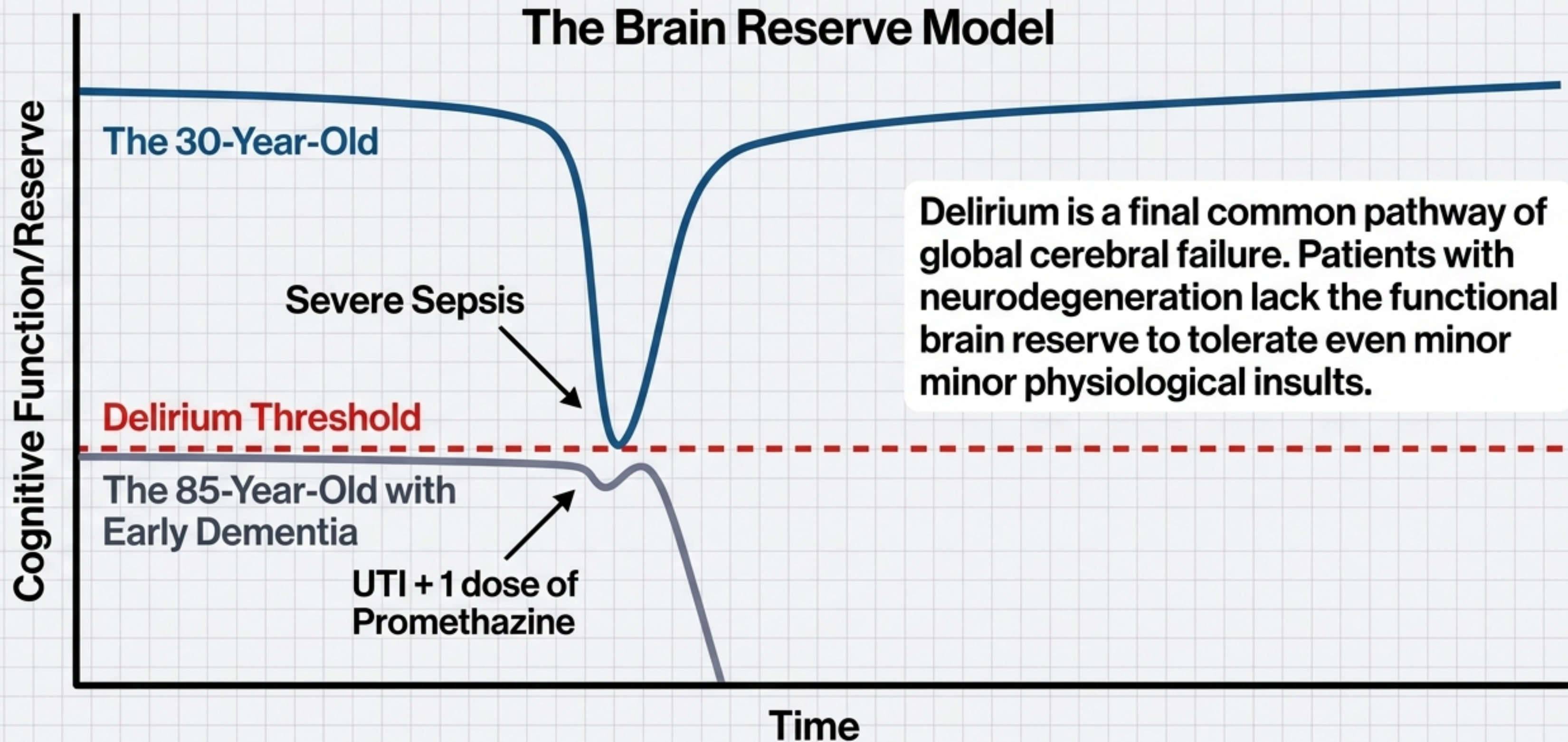
- **Features:** Agitation, restlessness, hallucinations, combativeness, pulling at lines.
- **Clinical Context:** Typical in EDs and acute wards.
- **The Danger:** Prompts clinical review, but triggers dangerous knee-jerk responses (chemical restraints).

Differentiating the Acute Crisis from the Chronic Baseline.

	Delirium		Dementia
Onset	Acute (hours to days)		Insidious (months to years).
Course	Fluctuating, worse at night		Gradually progressive.
Attention	Impaired (hallmark)		Relatively preserved until late stages.
Consciousness	Altered (clouded/lethargic)		Clear until advanced disease.
Reversibility	Usually reversible if cause treated		Generally irreversible.

Up to 50% of hospitalised patients with delirium have pre-existing dementia. Always consider baseline cognitive disorders and arrange post-discharge neuropsychological follow-up.

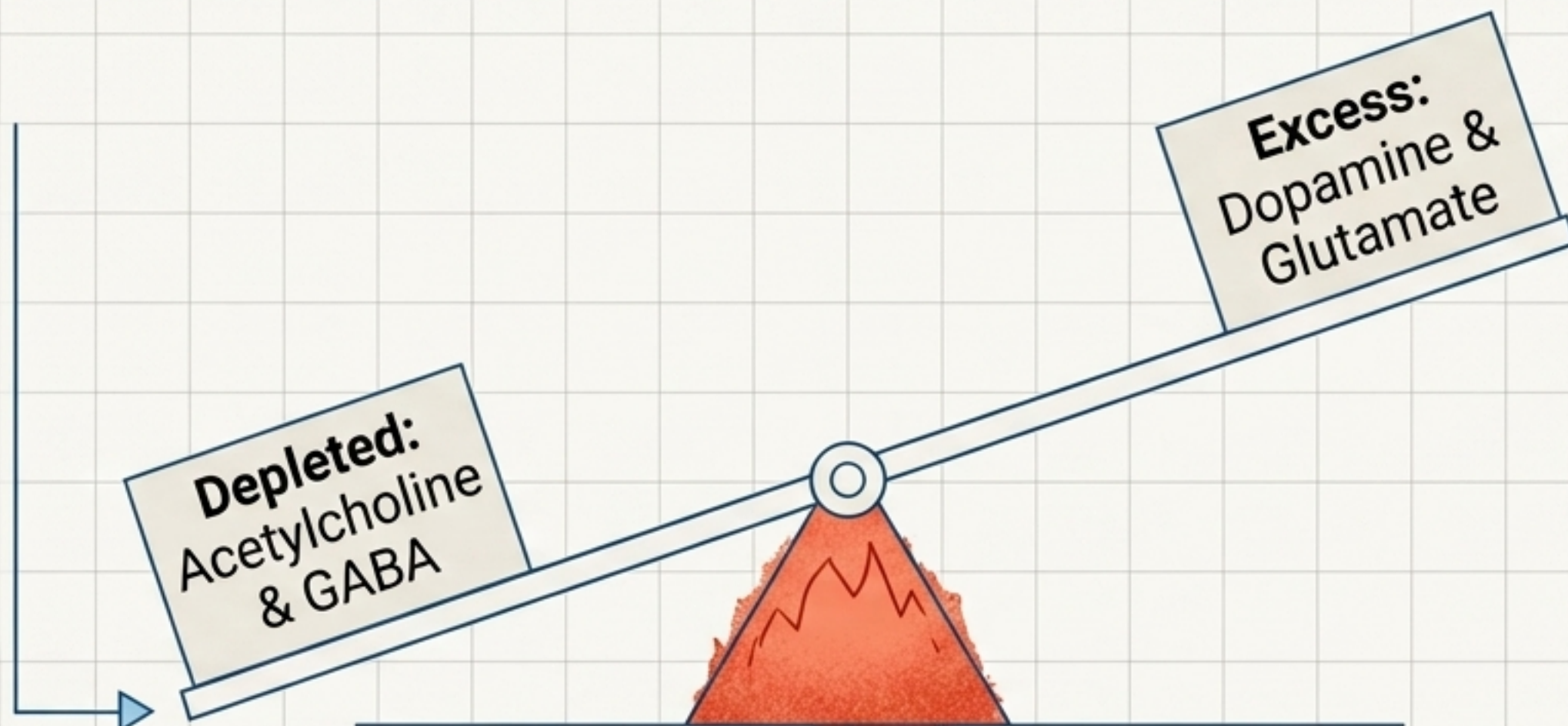
The Vulnerable Brain: Why Minor Insults Trigger Major Crises.



The Pathophysiology See-Saw: Neuroinflammation and Transmitter Collapse

Why anticholinergics fail the brain:

They further
deplete
already
critically low
Acetylcholine.



Why antipsychotics are used:

Dopamine
antagonists act
as blunt
instruments to
suppress severe
hyperactive
excitability.

Neuroinflammation &
Disrupted Blood-Brain Barrier
(IL-1 β , IL-6, TNF- α)

Biomarker Insight: Elevated serum neurofilament light chain (NfL) and S100B persist months after resolution—delirium causes lasting neuronal injury.

The Triggers: Routine Screening is the Only Defense Against the Blind Spot.

1. All patients aged ≥ 65 years.

2. All patients with known/suspected cognitive impairment.

3. All post-operative patients (especially hip fracture).

4. Any acute change in behavior or consciousness (ward or ICU).

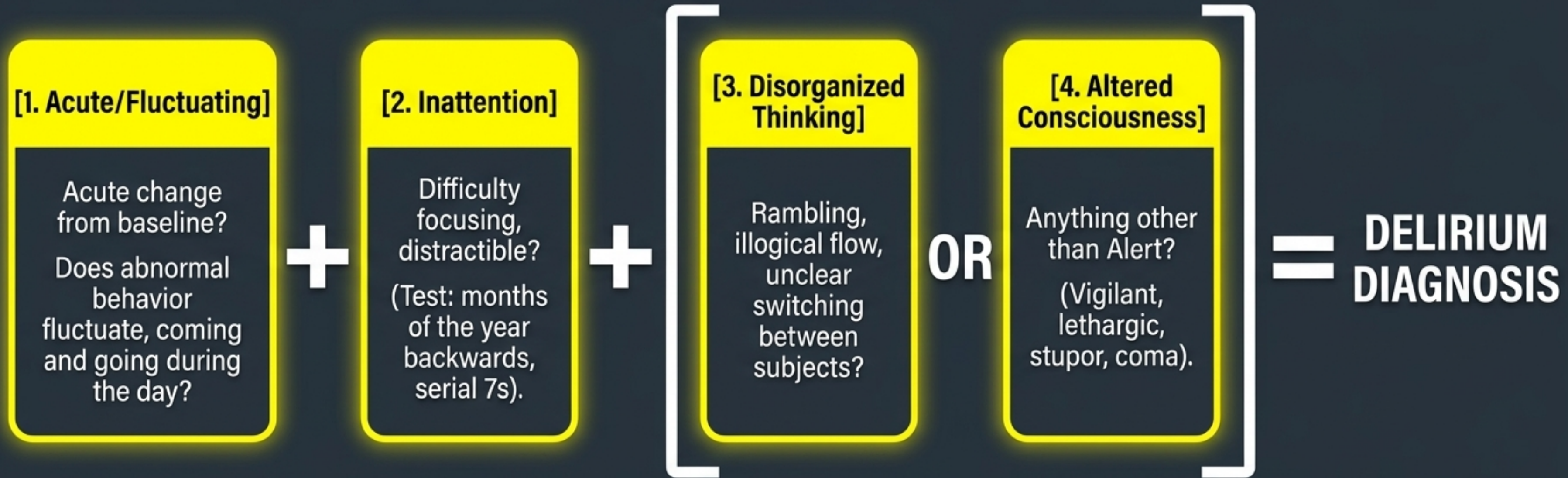
The Action Protocol

Tool: Short CAM (5 min) or **4AT** (2 min, **high sensitivity for ED**). Use **CAM-ICU** for ventilated patients.

Frequency: On presentation, then minimum every shift (q8–12h).

Documentation: Must handover CAM result to the next clinician.

The Diagnostic Formula: The Confusion Assessment Method (CAM).



If the patient is lethargic, Feature 4 is met. You do not need disorganized thinking to confirm hypoactive delirium.

The DIMS Dashboard: Systematically Hunting the Precipitants.

DRUGS (30-40% of cases)

- Anticholinergics (promethazine, oxybutynin)
- Benzodiazepines
- Opioids (beware untreated pain as well)
- Corticosteroids (typically first 5 days)
- Polypharmacy (≥ 5 meds)

INFECTION

- UTI (beware asymptomatic bacteriuria—don't treat just for confusion)
- Pneumonia
- Cellulitis
- COVID-19/Influenza
- Meningitis/Encephalitis

METABOLIC

- Hyponatraemia
- Hypoglycaemia (<4.0 mmol/L is an emergency)
- Uraemia (eGFR <15)
- Hepatic Encephalopathy
- Hypoxia
- Wernicke's (Give IV thiamine BEFORE glucose)

STRUCTURAL / SENSORY

- Stroke/Bleed
- Non-convulsive status epilepticus
- Urinary retention / Constipation (routine bladder scan needed)
- Sensory deprivation (missing glasses/hearing aids)

The Stratified Investigation Pathway.

Essential Baseline (Perform on ALL new-onset cases)

Bloods: FBE, U&E, Electrolytes (Ca/Mg/PO4), BGL, LFTs, TFTs.

Micro: Urinalysis & culture (interpret cautiously).

Imaging/Physio: Chest X-ray, 12-lead ECG (Mandatory before antipsychotic use to check QTc), Pulse oximetry \pm ABG.

Directed & Specialist Investigations

Infectious/Toxic: Blood cultures, CRP/Procalcitonin, Ammonia (on ice), BAC / Urine drug screen.

Neurological (Referral): Non-contrast CT Brain (suspected stroke/bleed/trauma), MRI Brain, EEG (suspected non-convulsive status), Lumbar Puncture (Do not delay empirical acyclovir/antibiotics for LP).

Initial Management: The 4 Parallel Tracks.

Track 1: Identify & Treat Cause (The Anchor)

Cease offensive meds, administer empirical antibiotics, correct electrolytes, hydrate, relieve retention/pain. (Never assume just one cause).

Track 2: Non-Pharmacologic Support (First-Line for ALL)

Reorientation, sleep architecture, early mobilisation, sensory optimization. (Target: Reduce incidence by 30-40%).

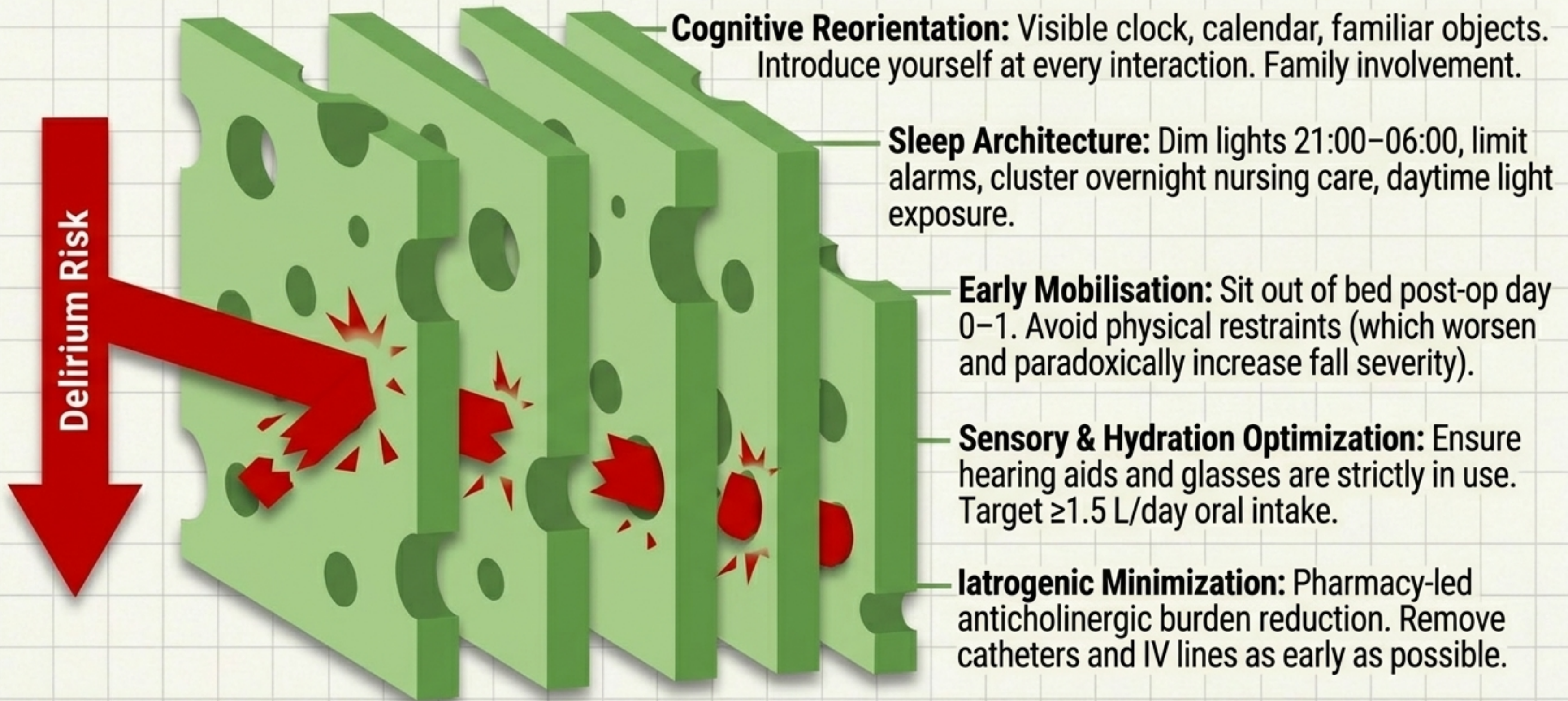
Track 3: Cautious Pharmacotherapy (Last Resort)

Target specific severe distress or safety risks ONLY. TGA Black-Box constraints apply. Does not treat underlying delirium.

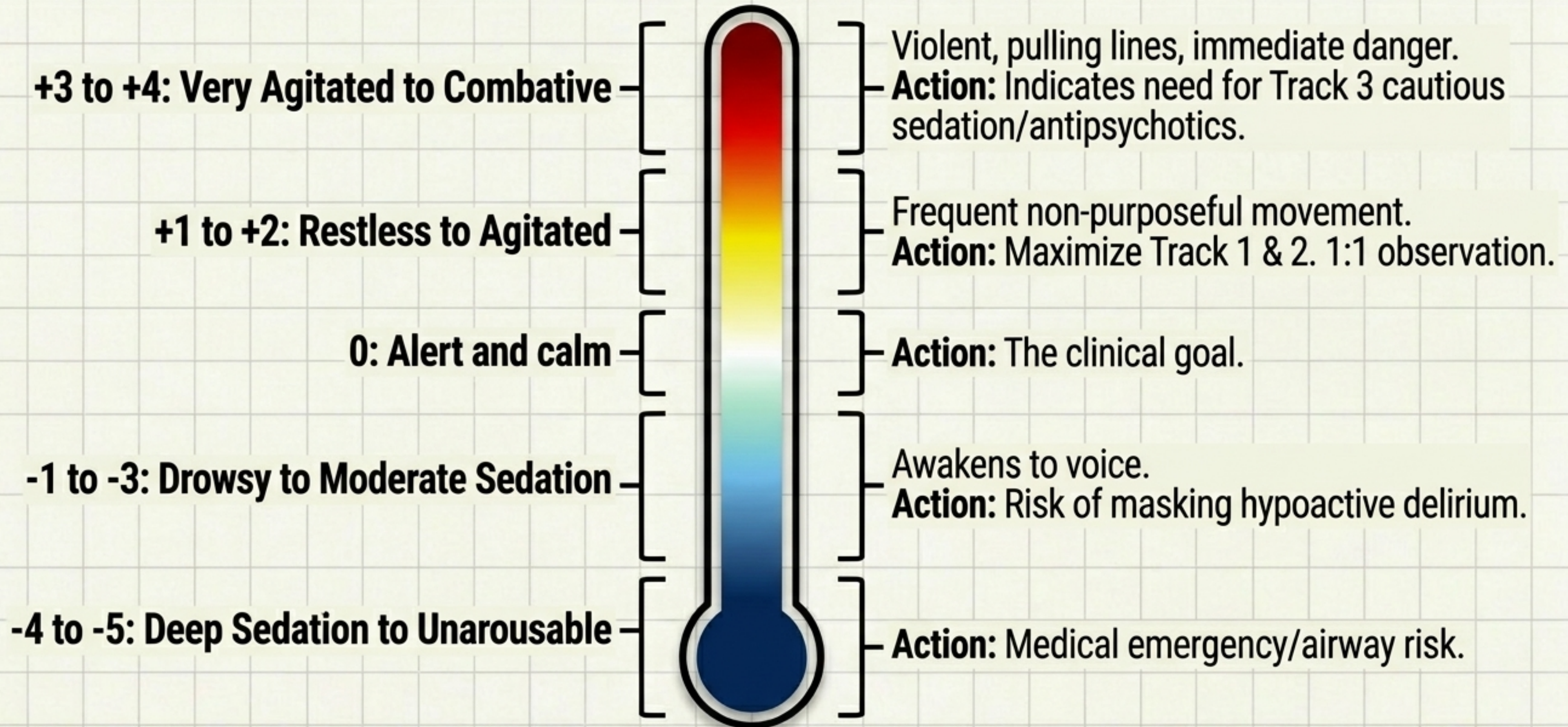
Track 4: Prevention & Monitoring

Identify high-risk factors (age ≥ 65 , hip fracture), implement HELP bundles, q8h CAM tracking.

The Swiss Cheese Prevention Model: The HELP Bundle.



Severity Stratification: The Richmond Agitation-Sedation Scale (RASS).



THE TGA BLACK-BOX GATE: PHARMACOTHERAPY IS NOT A CURE

THE BLACK-BOX WARNING

All antipsychotics carry a Therapeutic Goods Administration (TGA) black-box warning for increased mortality in elderly patients with dementia-related psychosis.



ANTIPSYCHOTICS DO NOT TREAT THE UNDERLYING CAUSE OF DELIRIUM. THEY ARE INDICATED ONLY FOR SEVERE AGITATION THREATENING SAFETY OR HIGHLY DISTRESSING PSYCHOTIC SYMPTOMS.

THE RESTRAINT MANDATE

Physical restraints are a last resort. Must be medically documented, reviewed every 2 hours, and ceased at earliest opportunity. Restraints frequently worsen delirium.

The Pharmacotherapy Cheat Sheet (Lowest Effective Dose, Shortest Duration).

Drug	Dose & Route	Organ Adjustment	Key Cautions
Haloperidol (D2 Antagonist)	0.5–1 mg PO/IM/IV (Max 4-5mg/24h in elderly).	Reduce in hepatic impairment. Lowest dose in renal.	QTc prolongation (avoid if >500 ms). High EPS risk. Avoid in Lewy Body Dementia.
Quetiapine (Atypical)	12.5–25 mg PO BD (titrate up to 50-100mg BD).	Reduce in hepatic impairment.	Sedation, orthostatic hypotension, falls risk. Lower EPS risk.
Olanzapine (Atypical)	2.5–5 mg PO/IM OD (Max 10mg/day in elderly).	Reduce in hepatic (CYP1A2 metabolism).	Anticholinergic effects may worsen hypoactive delirium. Do NOT co-administer IM olanzapine with IM benzodiazepines.
Diazepam (Benzodiazepine)	ONLY for alcohol/benzo withdrawal or hepatic encephalopathy. Worsens normal delirium.	Avoid in renal impairment (active metabolites accumulate); use Lorazepam instead.	Respiratory depression, paradoxical agitation.

THE TRAJECTORY OF CARE: MONITORING & DISCHARGE.

EVERY 4–8 HOURS

CAM/4AT screening.
Document subtype
and RASS score.
Vital signs, fluid
balance,
bladder scans.

DAILY

Pharmacy-led
anticholinergic burden
review.
Reassess need for any
prescribed
antipsychotics (aim to
cease within 48-72h).
Repeat ECG at 24-48h
if on haloperidol.

48–72 HOURS

Review all DIMS
workup results. If no
improvement,
reconsider missed
causes (CT brain, EEG,
LP) and escalate to
geriatrics/neurology.

POST-DISCHARGE (2-4 WEEKS)

Delirium accelerates
cognitive decline.
Mandatory GP follow-up
for cognitive screening
(MoCA/MMSE), PTSD
symptom review, and
aged-care support
assessment.

First Nations Health: Adjusting the Diagnostic Lens

Epidemiology & Age Shift

Higher burden of chronic disease (renal, cardiac, diabetes) means delirium frequently occurs at ages 45–65 years.

Standard age-based screening algorithms (≥ 65) will miss these patients.

Communication & Cultural Safety

The CAM tool may confound language barriers with inattention.

Crucial to utilize Aboriginal Interpreter Services, Aboriginal Health Practitioners (AHPs), and Aboriginal Liaison Officers (ALOs).

Family presence is central to healing.

Pharmacology & Remote Nuances

Beware high anticholinergic burden from historically common remote medications (e.g., Promethazine/Phenergan for sedation, Hyoscine/Buscopan).

High prevalence of hearing impairment (otitis media) mimics inattention.

Edge Cases & Physiological Vulnerabilities.

Renal Impairment

Uraemia (eGFR <15) directly causes delirium. Avoid Diazepam (metabolites accumulate); use Lorazepam. Significantly reduce Morphine (M6G accumulation causes neuroexcitation).

Hepatic Impairment

Distinct treatment for Hepatic Encephalopathy (Lactulose 20-30mL q2h + Rifaximin).

Reduce Haloperidol/Quetiapine by 50%.

Pregnancy & Postpartum

A medical emergency. Broaden differential to Eclampsia, Cortical Venous Thrombosis, PRES.

Haloperidol is Cat B3; avoid Olanzapine. Benzodiazepines risk neonatal withdrawal.

Paediatrics

Affects 15-30% of PICU admissions. Use Cornell Assessment (CAPD).

Non-pharmacologic: Parental presence is paramount. Avoid routine benzodiazepine sedation (use dexmedetomidine).

The Clinical Bottom Line.



Screen the Blind Spot

Hypoactive delirium kills quietly. Routine CAM screening for at-risk patients (≥ 65 , post-op, cognitive impairment) is a non-negotiable standard of care.



Hunt the Precipitants

Delirium is rarely unifactorial. Systematically apply the DIMS framework and treat the underlying physiological collapse.



Protect the Brain

Stack non-pharmacological interventions (HELP bundle). Chemical restraints do not cure delirium—they only mask the crisis at the cost of increased mortality.

Delirium is a final common pathway of cerebral failure.
Treat it with the urgency of an organ in crisis.