

Delirium Prevention

Stop delirium before it starts—use many non-drug steps together (orientation, sleep, movement, glasses, hearing aids) in every at-risk patient.

THE ONE-LINE TRUTH

Find patients who might become confused in the hospital, then use simple, non-drug steps to keep their brain organized before delirium starts.

The chain — how it unfolds

1. Patient at risk enters the hospital (older age, already has dementia or serious illness, hearing or vision loss). — why: Their brain is already working at full capacity to stay organized—the hippocampus (memory and map center), prefrontal cortex (focus and decision center), and reticular activating system (alertness center) have no reserve left. Any new stress can tip them into confusion.
2. Hospital environment removes the brain's tools: take away glasses and hearing aids, bright lights and noise all night, no clocks or windows, lying in bed twenty-four hours a day, tubes and wires attached. — why: The thalamus (the brain's relay station) cannot send clear signals to the cerebral cortex because the eyes and ears are not working well. The suprachiasmatic nucleus (the brain's clock) loses its rhythm because there is no difference between day and night. The hippocampus cannot build a map of where you are because the room has no landmarks. Sensory deprivation plus sensory overload at the same time—this is the perfect recipe for delirium.
3. Doctors give medicines that fog the brain: benzodiazepines for 'anxiety,' diphenhydramine for sleep, high-dose opioids for pain, or anticholinergic drugs. — why: These medicines block acetylcholine receptors in the basal forebrain, hippocampus, and prefrontal cortex (the neurotransmitter that keeps you alert and able to think) and increase dopamine in the striatum and frontal cortex (which can cause hallucinations and agitation). The brain's chemistry becomes unbalanced and it cannot process information anymore.
4. Sleep is broken every one to two hours for vital signs, blood draws, or medicines. No deep sleep for days. — why: Without deep sleep, the glymphatic system (the brain's waste-clearing network) cannot flush out toxins like beta-amyloid, the hippocampus cannot save memories, and acetylcholine and GABA (the brain's main calming signal) cannot reset. The brain becomes toxic and confused—like a computer that has not been restarted in days.

5. The brain loses the ability to focus, know where it is, or tell what is real. Delirium is now present. — why: The final common pathway: acetylcholine drops in the basal forebrain and hippocampus, dopamine rises in the striatum, inflammation markers (cytokines like interleukin-6 and tumor tissue death (necrosis) factor-alpha) flood the brain, plus no sleep plus sensory chaos → the reticular activating system, prefrontal cortex, hippocampus, and thalamus shut down their ability to organize information. The patient becomes confused, agitated, or very quiet and withdrawn.
6. If not caught early, delirium causes: longer hospital stay, higher risk of death, permanent cognitive decline (new or worse dementia), higher chance of nursing home placement, and more falls or injuries. — why: Delirium is not just confusion that goes away—it is a brain injury. Every day of delirium increases the risk of permanent damage. Neurons in the hippocampus and prefrontal cortex are stressed, synapses (connections between brain cells) are lost, inflammation damages blood vessels in the brain, and some patients never return to their baseline thinking.
7. Prevention works: multicomponent, non-drug bundle (orientation, sleep, mobility, vision and hearing, avoid harmful drugs) cuts delirium by thirty to fifty percent. — why: Give the brain back its tools—let the thalamus send clear signals by providing glasses and hearing aids, protect the glymphatic system's waste-clearing by ensuring sleep, keep blood flowing to the brain by encouraging movement, remove acetylcholine-blocking medicines—and the reticular activating system, prefrontal cortex, and hippocampus can stay organized. This is the Hospital Elder Life Program (HELP) model, and it is the standard of care. No single drug prevents or treats delirium as well as this bundle does.

Spot it — what you see, and why

- Older age (over 65 years): As the brain ages, it loses some of its backup cells and connections. That means less reserve to stay clear when stress hits — like infection, surgery, or new medicine. An older brain tips into confusion more easily because it has less cushion to absorb the blow.
- Hearing or vision problems: When you cannot see or hear well, fewer signals reach the brain from the outside world. The brain relies on those signals to stay grounded — to know where you are, what time it is, and what is happening around you. Without them, confusion creeps in more easily.
- Dementia or memory problems: A brain already damaged by dementia has fewer healthy cells and weaker connections. It works near its limit every day. Any new stress — an infection, a hospital stay, pain — pushes it past that limit and triggers delirium (sudden, severe confusion that swings hour by hour).

- Taking three or more medicines (polypharmacy): Each medicine changes brain chemistry. When you take many at once, they bump into each other and multiply side effects. Certain types — sleeping pills, strong pain pills (especially opioids), antihistamines (allergy pills), and bladder pills — are especially good at fogging the brain and triggering delirium.
- Recent surgery or anesthesia: Anesthesia medicines flood the brain to put it to sleep. Afterward, the brain has to reboot — and in older people, that reboot sometimes stalls. Add in pain, inflammation, and the body's stress hormones (like cortisol), and the brain's normal rhythm gets scrambled, leading to confusion.
- Severe illness or infection: When the body fights a serious infection or illness, immune cells release chemicals called cytokines (messengers that rally the fight). Those cytokines travel through the blood to the brain and scramble its signals. Low oxygen, low blood pressure, or high fever also starve or overheat brain cells, causing confusion.

Red flags — act now

- New or sudden confusion that was not there before (the main sign delirium has started)
- Being very sleepy and hard to wake up (may mean the brain is dangerously slowed or shutting down)
- Seeing or hearing things that are not real, or believing things that make no sense (hallucinations or delusions — signs the brain is misfiring badly)

Treat it — in this order

1. Assess delirium risk at admission using a validated tool (e.g., age above 70, known dementia, severe illness, vision or hearing loss, abnormal sodium or glucose) → Identifies which patients need prevention before confusion starts. Catching risk early lets you stop the domino before it falls.
2. Reorient constantly: put a clock and calendar in the room, open the window, tell them the date and where they are, explain who you are and why they are here — repeat every two hours → The hippocampus (the brain's memory and map center) builds a map of where the person is. A confused brain is one that lost its GPS. Reorienting fixes the map so the brain can stay organized.
3. Stop or reduce anticholinergic drugs (diphenhydramine, oxybutynin), benzodiazepines (lorazepam, diazepam), opioids (morphine, oxycodone), and other sedating medicines → These drugs turn off the brain's alarm system. Anticholinergics block acetylcholine (the brain's main attention and memory signal), benzodiazepines boost GABA (the brain's main calming signal, which slows brain waves too much), opioids sedate the whole system. Removing them lets the brain wake up and stay clear.

4. Restore the sleep-wake cycle: lights on and blinds open during the day, lights off and quiet at night, no unnecessary alarms or care rounds between 10 p.m. and 6 a.m. → The suprachiasmatic nucleus (the brain's clock, a tiny spot in the hypothalamus that runs the 24-hour rhythm) gets reset. Confusion is what happens when the brain's clock breaks. Fixing the clock fixes the signal that keeps the brain awake during the day and asleep at night.
5. Return glasses and hearing aids immediately; assign the same nurse and doctor each shift; involve family in care rounds and daily decisions → The brain gets sensory input (see, hear) and recognizes trusted voices. Familiar people and faces are the brain's anchor to reality. Without them, the hospital is a confusing blur.

Your top priorities at the bedside

1. Place a large clock and calendar where the patient can see them from the bed, open the window blinds during the day, and tell the patient the date, time, location, and why they are in the hospital every 2 hours and during every interaction. — why: The brain needs constant environmental cues to stay oriented. Sensory input (light-dark cycles, visible time markers, repeated verbal orientation) keeps the reticular activating system (the brain's wakefulness center) synchronized and prevents the disorganized thinking that leads to delirium.
2. Make sure the patient wears their glasses and hearing aids during all waking hours, and check that the devices are clean and working properly each shift. — why: Sensory deprivation confuses the brain because it cannot process its surroundings accurately. Correcting vision and hearing lets the hippocampus (memory center) and prefrontal cortex (reasoning center) work normally, which are the first brain areas to fail in delirium.
3. Review the medication administration record (MAR) with the provider every day and request to stop or reduce anticholinergic drugs (diphenhydramine, hydroxyzine, oxybutynin, promethazine), benzodiazepines (lorazepam, diazepam), and sedating antihistamines. — why: Anticholinergics block acetylcholine receptors in the brain, which directly impairs memory and attention. Benzodiazepines enhance GABA (a calming brain chemical) too much, causing sedation and confusion. Removing these drugs restores normal neurotransmitter balance.