

Delirium

What is delirium?

An acute and often intermittent disturbance of thought, perception and levels of awareness.

NICE focuses on the following features at presentation:

- Cognitive function: for example, worsened concentration*, slow responses*, confusion.
- Perception: for example, visual or auditory hallucinations.
- Physical function: for example, reduced mobility*, reduced movement*, restlessness, agitation, changes in appetite*, sleep disturbance.
- Social behaviour: for example, lack of cooperation with reasonable requests, withdrawal*, or alterations in communication, mood and/or attitude.

* means this is a feature of **hypoactive** delirium, which is the type that is most commonly missed. The other main type, **hyperactive** delirium, is more florid, with hallucinations and agitations, and the nursing staff will be sure to let you know. You can also get a mixed picture.

How common is it?

It happens in about 15%-20% of all hospital admissions.

Who is at risk?

Patient factors: Pre-existing dementia, over 65 and male
 Disease factors: Severe illness, hip fractures, post-operative (especially emergency operations)
 Hospital factors: Frequent changing of ward/staff, not tracking down hearing aids/spectacles

How do you define delirium?

Using the CAM diagnostic algorithm:

The Confusion Assessment Method (CAM) Diagnostic Algorithm

Feature 1: *Acute Onset and Fluctuating Course*

This feature is usually obtained from a family member or nurse and is shown by positive responses to the following questions: Is there evidence of an acute change in mental status from the patient's baseline? Did the (abnormal) behavior fluctuate during the day, that is, tend to come and go, or increase and decrease in severity?

Feature 2: *Inattention*

This feature is shown by a positive response to the following question: Did the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?

Feature 3: *Disorganized thinking*

This feature is shown by a positive response to the following question: Was the patient's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

Feature 4: *Altered Level of consciousness*

This feature is shown by any answer other than "alert" to the following question: Overall, how would you rate this patient's level of consciousness? (alert [normal]), vigilant [hyperalert], lethargic [drowsy, easily aroused], stupor [difficult to arouse], or coma [unarousable])

If you have BOTH features 1 and 2, and ONE of features 3 or 4, then you have delirium.

What is the mechanism of delirium?

It's not known. Relative cholinergic deficiency / relative dopaminergic excess is a popular theory at the moment. Hypercortisolism also seems to be a common theme to many of the known causes.

What are the causes?

The most common cause is an infection, but there are plenty of others.

You can split the causes into intracranial and extracranial. The intracranial causes go by the mnemonic 'BENT' and the extracranial ones go with 'MINDS'. Together, they form BENT MINDS.

Intracranial:

Blood problems – haemorrhage or CVA
Epilepsy, post ictal
Neoplasms (which can also be extracranial)
Trauma

Extracranial:

Metabolic, endocrine and electrolyte – (“don't forget **mee...**”
 Metabolic: hypoxia, hypoglycaemia, hepatic encephalopathy, uremic encephalopathy
 Electrolyte: Na, K and Ca disturbances
 Endocrine: mainly thyroid disorders and Cushing's

Infection – Common: Chest infection, UTI
 Less common: Wound, lines, cellulitis, meningitis/encephalitis, abscess
 Desperate: Malaria

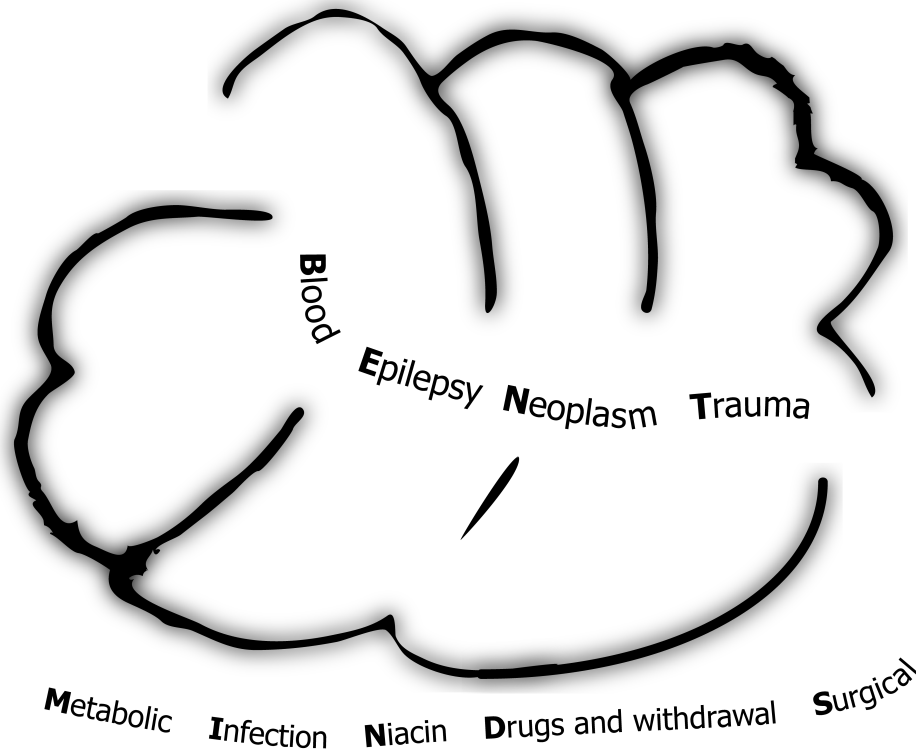
Niacin, thiamine and B12 deficiency

Drug and drug withdrawals – I like to think that in elderly people, their class 'A' drugs are the **anticholinergics**, **anticonvulsants**, **antidepressants** and **analgesics** that send them on mind-altering trips. Also class B, like **benzodiazepines**. Plus steroids, and plenty more. Don't forget withdrawals, especially alcohol, opiate and benzodiazepine.

Surgery – post operative, especially major/emergency trauma.

Also pain and constipation, both common in the post operative period, can contribute.

Sleep deprivation – I forgot to add this to the mnemonic because I was so sleepy.



How should I investigate delirium?

1. You will need to know the patient's baseline status, which means talking to the family or care home.
2. You should do a mental state examination, so that progress can be monitored during the admission.
3. You then need to seek reversible causes.
 - a. History is invaluable. Are there new focal neurological signs? Any LOC or falls? Localising infection symptoms? Recent medication changes?
 - b. Examination for neurological signs and infection sources, including the ears and throat
 - c. FBC, U&Es, glucose, calcium, magnesium, LFTs, TFTs and vitamin B12 levels are needed in most patients. You may also seek blood cultures, syphilis serology, drug levels and troponin depending on the patient's case.
 - d. CXR – pneumonia, heart failure, other causes of hypoxia
 - e. Urine analysis - UTI
 - f. ECG – myocardial ischaemia
 - g. ABG if hypoxic
 - h. If no cause identified from all of this, then a CT Head is often justified. Lumbar punctures/EEGs may eventually be needed for CNS infections/encephalopathy.

How do I treat delirium?

Firstly, treat the cause.

There are also some tricks for improving delirium of any etiology. It helps to orientate the patient at every opportunity. Ensure they know where they are, what time it is and who the staff are. Avoid moving the patient between

wards, and try to have the same staff for the same patient if possible.

You can also follow NICE guidance on how to prevent/treat the reversible causes:

Clinical factor	Preventive intervention
Cognitive impairment or disorientation	<ul style="list-style-type: none"> • Provide appropriate lighting and clear signage. A clock (consider providing a 24-hour clock in critical care) and a calendar should also be easily visible to the person at risk. • Reorientate the person by explaining where they are, who they are, and what your role is. • Introduce cognitively stimulating activities (for example, reminiscence). • Facilitate regular visits from family and friends.
Dehydration or constipation	<ul style="list-style-type: none"> • Encourage the person to drink. Consider offering subcutaneous or intravenous fluids if necessary. • Seek advice if necessary when managing fluid balance in people with comorbidities (for example, heart failure or chronic kidney disease).
Hypoxia	<ul style="list-style-type: none"> • Assess for hypoxia and optimise oxygen saturation if necessary.
Immobility or limited mobility	<ul style="list-style-type: none"> • Encourage the person to: <ul style="list-style-type: none"> – mobilise soon after surgery – walk (provide walking aids if needed – these should be accessible at all times). • Encourage all people, including those unable to walk, to carry out active range-of-motion exercises.
Infection	<ul style="list-style-type: none"> • Look for and treat infection. • Avoid unnecessary catheterisation. • Implement infection control procedures in line with 'Infection control' (NICE clinical guideline 2).
Multiple medications	<ul style="list-style-type: none"> • Carry out a medication review for people taking multiple drugs, taking into account both the type and number of medications.
Pain	<ul style="list-style-type: none"> • Assess for pain. Look for non-verbal signs of pain, particularly in people with communication difficulties. • Start and review appropriate pain management in any person in whom pain is identified or suspected.
Poor nutrition	<ul style="list-style-type: none"> • Follow the advice given on nutrition in 'Nutrition support in adults' (NICE clinical guideline 32). • If the person has dentures, ensure they fit properly.
Sensory impairment	<ul style="list-style-type: none"> • Resolve any reversible cause of the impairment (such as impacted ear wax). • Ensure working hearing and visual aids are available to and used by people who need them.
Sleep disturbance	<ul style="list-style-type: none"> • Avoid nursing or medical procedures during sleeping hours, if possible. • Schedule medication rounds to avoid disturbing sleep. • Reduce noise to a minimum during sleep periods⁴.

⁴ See 'Parkinson's disease' (NICE clinical guideline 35) for information about sleep hygiene.

Wandering patients

Keep the patient safe using the **least restrictive management**. In my first month as an F1, I was tempted to give haloperidol to a wandering patient. I learnt from the sister that you can keep a wandering patient behind the nurses desk to do crosswords (well, write scribbles in the boxes) and have a sandwich. The causes I look for now are pain, hunger/thirst and needing the loo.

When do I use medications?

Try to avoid them as much as possible. There are only two reasons for medicating in delirium:

1. The patient is distressed
2. The patient is a risk to themselves or others

Hypoactive patients may be distressed without you realising it.

In either case, use de-escalating techniques, such as finding out the exact cause for the upset, and asking the patient what they would like done. Do not assume a delirious patient does not understand what they are upset about – they usually do! Having relatives or carers around can be very helpful here.

If these techniques do not work, then NICE recommends:

*"If a person with delirium is distressed or considered a risk to themselves or others and verbal and non-verbal de-escalation techniques are ineffective or inappropriate, consider giving **short-term** (usually for 1 week or less) **haloperidol** or **olanzapine**. Start at the lowest clinically appropriate dose and titrate cautiously according to symptoms."*

In a patient with Parkinson's or Lewy Body dementia, you would be very cautious about giving antipsychotics. In fact, you almost certainly would not.

Olanzapine is associated with stroke, and should be avoided in patients who are at risk of stroke.

Where can I learn more?

NICE guidance
BMJ Best Practice
Patient UK

And the SBAs on drcrunch.co.uk of course