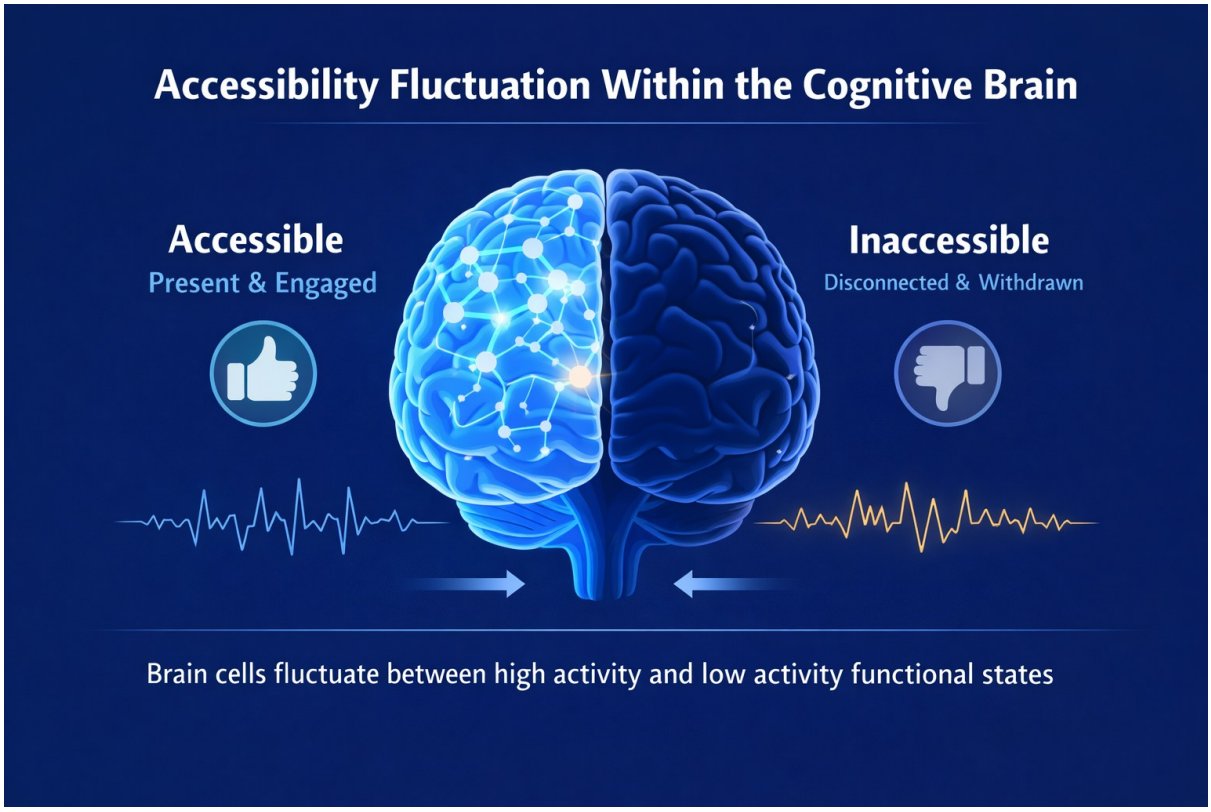
LAUNEX LTD

Why a person with dementia can seem present one moment and distant the next — new research reveals the brain's functional states



One of the most confusing and emotionally difficult aspects of dementia for families is the fluctuation.

A person may be present, engaged, and emotionally connected one moment — and distant, withdrawn, or cognitively inaccessible the next. This inconsistency is often interpreted as unpredictability, or even resistance.

But new research has revealed something critically important.

These changes reflect real-time shifts in how brain cells function.

A new study has mapped how individual brain cells produce proteins — the essential building blocks that allow neurons to communicate, regulate activity, and maintain cognitive stability. This research provides direct biological evidence that brain cells do not simply function or fail. They exist in different functional states, and these states change over time.

This discovery helps explain why dementia progression is not linear, but fluctuating.

The discovery: brain cells continuously shift between functional states

Using a newly developed molecular tracking technology known as Ribo-STAMP, researchers were able to observe protein production inside individual neurons in real time. This allowed scientists to see which brain cells were actively functioning and which were operating in a reduced activity state.

Protein production is essential because proteins allow neurons to:

- Transmit signals
- Maintain connections with other neurons
- Regulate cognitive processes
- Sustain memory and perception

When protein production is high, neurons remain active and capable of communication. When protein production decreases, neuronal communication weakens.

This does not mean the neuron has died.

It means the neuron has shifted into a lower functional state.

This distinction is critical.

Brain cells do not simply disappear. Their accessibility changes.

Why function fluctuates even when the brain structure remains present

One of the most important findings of this study is that neurons may still contain the genetic instructions required for normal function, but may not actively translate those instructions into proteins at a given time.

In practical terms, this means the brain may still have the biological capacity for certain functions, but may not consistently execute them.

This explains why a person living with dementia may be able to communicate clearly in one moment and struggle to do so shortly afterward.

The underlying neural structure may still exist, but its functional availability fluctuates.

This fluctuation is not under conscious control.

It reflects the biological state of neuronal activity at that moment.

How this aligns with the Launex Dementia Brain Map™: accessibility depends on which brain systems remain functionally active

The Launex Dementia Brain Map™ explains dementia progression as a shift in functional accessibility between three major brain systems: the Cognitive Brain (Head Brain), the Emotional Brain (Heart Brain), and the Survival Brain (Gut Brain).

This new research provides molecular evidence supporting this functional transition.

Different brain systems maintain protein production capacity at different rates. As Alzheimer's disease progresses, cognitive systems responsible for reasoning and executive function lose stable protein production first. Emotional systems remain functional longer. Survival-based systems remain accessible longest.

This explains why reasoning becomes difficult before emotional connection is lost, and why emotional recognition often persists even when memory fails.

The brain is not uniformly shutting down.

It is reorganising functional accessibility.

Why emotional connection often remains when cognitive reasoning declines

The research found particularly significant differences in protein production within the hippocampus, a brain region essential for memory formation. This region is one of the earliest affected in Alzheimer's disease.

As hippocampal protein production declines, memory formation becomes unstable.

However, emotional processing systems rely on different neural networks that often maintain functional stability for longer.

This explains why individuals living with dementia may forget recent events but still recognise emotional tone, respond to reassurance, and maintain relational connection.

Emotional accessibility often remains after cognitive accessibility declines.

This reflects functional preservation within emotional brain systems.

Why fluctuations are not random — they reflect biological changes in real time

Families often describe moments when the person appears more present, followed by periods of withdrawal or reduced engagement. This research confirms that these fluctuations reflect real biological changes in neuronal function.

Neurons may temporarily increase or decrease protein production depending on neurological stability, energy availability, and disease progression.

This creates periods where communication is more accessible, and periods where it becomes more difficult.

The person is not choosing these changes.

The brain's functional state is determining accessibility.

Understanding this removes misinterpretation and allows communication approaches to adapt accordingly.

Why this changes how dementia must be understood and approached

Dementia is often described as progressive brain cell loss. While structural degeneration does occur, this research confirms that functional change occurs long before cell death.

Brain cells first lose stability in how they function, communicate, and regulate cognitive systems.

This means the person may still be present neurologically, but less consistently accessible.

Care approaches must therefore align with the brain systems that remain accessible, rather than relying solely on cognitive reasoning that may no longer be reliably available.

Emotional safety, familiarity, and stability become essential because these systems remain functional longer.

The future of dementia care lies in understanding accessibility, not simply decline

This research provides clear evidence that dementia progression reflects a dynamic neurological process, where functional accessibility shifts across brain systems.

Understanding this allows families and professionals to adjust communication, reduce distress, and preserve relational connection for longer.

The person is not disappearing suddenly.

The brain is transitioning between functional states.

Recognising which systems remain accessible allows meaningful connection to continue.

The Launex perspective

The Launex Dementia Brain Map™ provides families and professionals with a structured framework to understand these neurological transitions and adapt care accordingly.

Dementia does not remove the person.

It changes which neurological systems remain consistently accessible.

When care aligns with those systems, communication improves, trust stabilises, and emotional connection can be preserved throughout the progression of the condition.

You can explore the Launex Family Pathway and Launex Dementia Carer Specialist™ training at https://www.launexltd.com

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