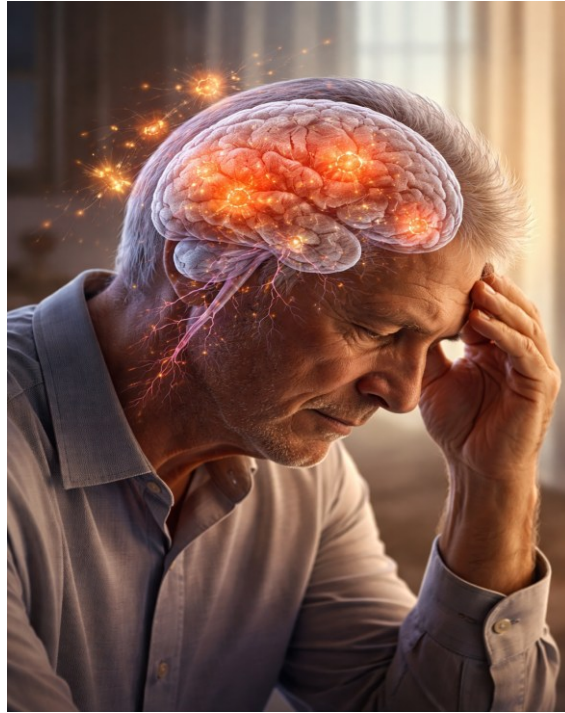




## Neuroinflammation in Parkinson's disease — what is happening beneath the surface



Parkinson's disease has traditionally been understood through its visible symptoms: tremor, rigidity, and changes in movement. But beneath these outward signs, a quieter and more complex process is taking place.

Neuroinflammation.

Emerging research shows that inflammation in the brain is not simply a response to damage. It is an active process that can contribute to the progression of Parkinson's disease, influencing how neurons function, deteriorate, and communicate.

### **What neuroinflammation means in the brain**

Neuroinflammation refers to the activation of the brain's immune system. Cells such as microglia respond to perceived threats, including damaged proteins and stressed neurons.

In the early stages, this response can be protective. It helps clear waste and maintain balance within the brain.

However, when this response becomes prolonged or dysregulated, it begins to have the opposite effect. Instead of protecting neurons, it contributes to their damage.

This creates a cycle.

Damage triggers inflammation.  
Inflammation contributes to further damage.  
Over time, this cycle can accelerate neuronal decline.

### **What the new research shows**

Recent advances now allow researchers to measure neuroinflammation more directly within the living brain. Using biomarkers and imaging techniques, scientists can track inflammatory activity and observe how it relates to disease progression.

This is a significant shift.

It moves neuroinflammation from being a theoretical concept to something observable and measurable.

What is becoming clearer is that higher levels of inflammation are associated with greater neuronal loss and more advanced disease stages.

### **Why this matters for understanding progression**

Parkinson's disease does not progress in a straight line. It evolves gradually, often with periods of relative stability followed by noticeable changes.

Neuroinflammation helps explain this pattern.

Rather than a single point of failure, the brain is experiencing ongoing stress. As inflammation persists, it disrupts the stability of neural networks, affecting movement, cognition, and emotional regulation over time.

This is not just degeneration.

It is a process of destabilisation.

### **From a Launex perspective — linking brain changes to behaviour**

At Launex, we understand neurological conditions through the lens of system stability.

As inflammation disrupts neural networks, the systems responsible for regulation begin to shift. Cognitive control may become less reliable. Emotional responses may become more pronounced. Behaviour may appear inconsistent or unpredictable.

These changes are not random.

They reflect underlying changes in how the brain is functioning.

Understanding this allows behaviour to be interpreted differently. Instead of seeing actions as isolated symptoms, they can be understood as expressions of a brain under increasing physiological strain.

## **Why this matters for care and support**

When neuroinflammation is viewed as part of the disease process, it changes how we respond.

It reinforces that individuals are not simply “losing ability.” They are experiencing a brain that is working under altered conditions.

This calls for a shift in approach.

Care needs to be responsive to changing stability, rather than fixed expectations of performance. Communication needs to adapt to what the brain can still access, rather than what it has lost.

When this alignment happens, connection remains possible.

## **The Launex perspective**

Neuroinflammation provides another piece of the puzzle in understanding Parkinson’s disease.

It highlights that progression is not driven by one factor alone, but by interacting processes that affect stability across brain systems.

For families and Dementia Care Specialists, this understanding matters.

Because when we recognise what is happening beneath the surface, we can respond in a way that supports the person, rather than reacting only to the symptom.

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