

Frequent Gabapentin Use Tied to Higher Risk of Dementia and Cognitive Decline

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STORY AT-A-GLANCE

- › Gabapentin is a synthetic drug originally approved for seizures. It's now widely prescribed off-label for chronic pain, despite limited evidence and rising concerns over safety
- › A recent study found that chronic back pain patients with six or more gabapentin prescriptions had a 29% higher dementia risk and 85% higher mild cognitive impairment risk
- › An earlier Taiwanese study linked gabapentin and pregabalin to a 45% increased dementia risk, with younger adults showing the highest vulnerability and dose-related worsening
- › Other reported side effects include brain fog, dizziness, sedation, psychiatric symptoms, respiratory depression, and withdrawal, especially in older adults, polypharmacy users, or those with prior substance use
- › Natural pain relief strategies like walking, core strengthening, reducing sedentary time, and dietary shifts help relieve chronic low back pain without long-term drug risks. DMSO offers additional support

Chronic pain affects over 51 million adults in the United States, interfering with daily function, mental health, and quality of life.¹ As pressure mounts to reduce opioid prescribing, alternative drugs have taken their place. Among them, gabapentin has emerged as one of the most commonly used options for long-term pain, with nearly 70 million prescriptions written each year.²

Though originally developed to treat epilepsy, gabapentin is now routinely prescribed for a range of chronic conditions, particularly those considered neuropathic. If you've been diagnosed with neuropathy, fibromyalgia, or chronic back pain with a nerve component, there's a good chance your doctor has recommended it.³ But as more people take it, new concerns emerge.

Patients and doctors alike have reported changes in memory, focus, and overall mental clarity over time, raising questions about the effects of gabapentin beyond pain relief. Case in point, a recent study published in the journal *Regional Anesthesia and Pain Medicine* showed how this drug, designed to calm overactive nerve signals, is also dulling mental sharpness in ways that are only starting to come into focus.⁴

What Is Gabapentin and How Did It Become So Widely Used?

Gabapentin is a fully synthetic pharmaceutical compound, originally developed in the 1990s as an adjunct treatment for partial seizures.⁵ It belongs to a class of drugs called gabapentinoids, which also include pregabalin (Lyrica) and mirogabalin.^{6,7}

Though its molecular structure mimics gamma-aminobutyric acid (GABA), the brain's primary calming neurotransmitter, gabapentin acts through a different pathway. Over time, it moved from niche neurology drug to a mainstream option for chronic pain, a transition shaped mainly by aggressive marketing campaigns.

- **Gabapentin acts through calcium channel modulation** — Unlike GABA, gabapentin does not bind to GABA receptors or enhance GABA signaling. Instead, it attaches to the alpha-2-delta subunit of voltage-gated calcium channels in the central nervous system. This reduces the release of excitatory neurotransmitters like glutamate and norepinephrine, helping to calm overactive nerve signaling.⁸
- **A major marketing push helped drive off-label prescribing for unapproved uses** — As interest in gabapentin grew, the drug's manufacturer, Pfizer, launched an aggressive campaign to promote it beyond its approved use. The strategy focused

on encouraging physicians to prescribe gabapentin for a wide range of unapproved indications, including migraines, anxiety, bipolar disorder, and general chronic pain.

- **Despite legal penalties, gabapentin became a staple of chronic pain management** – This marketing push eventually led to a federal investigation, uncovering evidence that the company had illegally promoted the drug for off-label uses. The case resulted in a nearly billion-dollar fine (one of the largest at the time), but the practice had already succeeded in embedding gabapentin into mainstream pain management.

Despite limited evidence for many of these uses, long-term prescribing has become routine. Patients are often kept on gabapentin for years without formal reassessment, and dose adjustments are rarely made even when the benefits are unclear.

- **Gabapentin misuse is on the rise** – Although often described as non-addictive, gabapentin is frequently misused, particularly in individuals with a history of substance use. It's often taken in high doses to induce euphoria or sedation, mimicking opioids or benzodiazepines. Up to 22% of people with opioid use disorder report misusing gabapentin.⁹

As use has spread, so has concern over the long-term effects of these medications on the brain, especially in patients who take them continuously with little monitoring.

Gabapentin and Dementia Risk in Chronic Pain Patients

The featured study explored whether frequent gabapentin use increases the risk of cognitive decline in adults with chronic low back pain. Using health records from 2004 to 2024, researchers tracked how often patients were prescribed gabapentin and whether they later developed dementia or mild cognitive impairment.¹⁰

- **Over 26,000 adults were tracked across matched groups** – Researchers analyzed medical records from adults with chronic low back pain who had no prior history of gabapentin use, dementia, epilepsy, stroke, or cancer. They created two well-

matched groups – those prescribed gabapentin and those who weren't.

They were then matched by age, gender, other health conditions, and use of pain medications and grouped by how many prescriptions they received, from just three to a dozen or more. This design helped isolate gabapentin as the key variable, strengthening the reliability of the results.

- **Gabapentin use was linked to higher rates of cognitive decline** – Patients who received six or more prescriptions had a 29% higher risk of developing dementia and an 85% higher risk of mild cognitive impairment compared to those who never took gabapentin. These results suggest that frequent gabapentin use contributes to cognitive decline, even in low-risk individuals.
- **Younger adults faced the greatest increase in risk** – In patients aged 18 to 64, gabapentin users had more than double the risk of being diagnosed with dementia and mild cognitive impairment compared to matched controls. These findings raise concern about neurological effects in people far younger than the typical age for cognitive disorders.
- **More prescriptions meant greater risk** – Patients who received gabapentin three to five times did not show a statistically significant increase in cognitive diagnoses, but those with 12 or more prescriptions had a 40% higher risk of dementia and a 65% higher risk of mild cognitive impairment. This suggests that chronic use, rather than occasional prescribing, drives the changes observed.
- **Study limitations temper interpretation, but the trend is strong** – As a retrospective study, the findings show association rather than direct causation. Data on dose, treatment duration, and adherence were not included, and some cognitive symptoms may have emerged before formal diagnosis.

Still, the clear dose-response pattern and the strength of the associations, especially in younger adults, support the need for clinical vigilance. The researchers concluded:

"Gabapentin prescription in adults with chronic low back pain is associated with increased risk of dementia and cognitive impairment, particularly in non-elderly adults. Physicians should monitor cognitive outcomes in patients prescribed gabapentin."¹¹

As off-label use of gabapentin continues to rise, this study adds to concerns that drugs targeting nerve signals may also affect memory, attention, and brain health in unintended ways.

Earlier Taiwanese Study Links Gabapentinoids to Dementia

Adding support to these recent findings, a 2023 retrospective cohort study published in *Frontiers in Pharmacology* examined whether long-term use of gabapentin or pregabalin was associated with an increased risk of dementia. The researchers used data from Taiwan's National Health Insurance Research Database (NHIRD), focusing on adults who received a first-time prescription for one of these drugs between 2000 and 2015.¹²

- **Large-scale data showed a 45% increased dementia risk** — Researchers analyzed 206,802 patients, including 34,467 who had taken gabapentin or pregabalin for at least 90 days. After adjusting for age, gender, and other health conditions, users were 45% more likely to develop dementia than non-users. The elevated risk held steady across both sexes and a wide range of comorbidities.
- **Younger adults faced a disproportionately high risk** — Among patients under 50, those taking gabapentin or pregabalin were more than three times as likely to develop dementia compared to similar individuals who didn't use the drugs. This finding raises concern that younger brains, with higher plasticity and different drug processing, are especially vulnerable to long-term cognitive effects.
- **Risk increased with cumulative dose** — Similar to the Regional Anesthesia and Pain Medicine research, this study found a clear dose-response relationship between dementia risk and the use of gabapentin or pregabalin. Those with low cumulative exposure showed no significant increase, but high-dose users had markedly elevated risk.

- **Biological mechanisms explain the cognitive effects** — As mentioned earlier, gabapentin and pregabalin bind to the alpha-2-delta subunit of voltage-gated calcium channels, which disrupts the balance between excitatory and inhibitory signaling in the brain.

The study provided further insights, highlighting that alpha-2-delta subunits are overexpressed in the hippocampus, the brain's memory center, making this region especially sensitive to long-term interference.

These results add important context to other studies linking gabapentin to cognitive decline. The pattern is not limited to a single country, drug, or methodology. Instead, it's showing up across large populations and independent datasets, pointing to a broader, more consistent concern.

What Are the Broader Health Effects of Gabapentinoids?

While these drugs are widely prescribed and framed as a low-risk alternative to opioids, that perception is increasingly at odds with real-world outcomes. Beyond their sedative effects, these drugs influence multiple systems in your body. Some of their other long-term side effects include:

- **Cognitive and psychiatric effects** — Many patients describe sleepiness, dizziness, lethargy, a creeping sense of mental fog, slowed thinking, and emotional numbness. These effects interfere with memory, attention, and emotional stability over time.¹³ Pregabalin has also been linked to episodes of confusion, agitation, hallucinations, and even psychosis.¹⁴
- **Respiratory problems** — In 2019, the U.S. Food and Drug Administration (FDA) issued a warning about gabapentin's role in respiratory depression, especially when used with opioids or other central nervous system depressants. Even standard doses may dangerously slow breathing in older adults, people with lung issues, or patients on sedating medications.¹⁵

- **Body and coordination issues** — Long-term use is linked to weight gain, swelling (peripheral edema), digestive issues, and fatigue. Many users also report ataxia, which is a loss of coordination that makes them feel unsteady or "off balance."

These side effects are especially risky for older adults vulnerable to falls or frailty.¹⁶ Even when patients want to stop taking gabapentinoids, doing so isn't always easy, as they cause withdrawal symptoms like anxiety, insomnia, restlessness, and nausea.¹⁷ This burden locks patients into long-term use, even when the benefits are unclear or absent.

How to Address Chronic Low Back Pain Without Long-Term Medications

For those dealing with persistent low back pain, the goal is often to find lasting relief without relying on long-term pharmaceuticals like gabapentin. The good news is that there are lifestyle-centered strategies that not only reduce pain and disability but also help resolve the underlying drivers of chronic discomfort, including:

1. **Walk several times a day, even in small amounts** — Many people assume **walking** should wait until pain improves, but it's one of the most important tools for recovery. Short walks of around two to five minutes at a time help your spine gently compress and decompress, rehydrate discs, and activate stabilizing muscles. Walking multiple times daily also helps loosen the hips and lower back, especially when done consistently rather than in a single long session.
2. **Break up sedentary time** — Sitting for long stretches, whether at a desk, in a car, or on the couch, puts sustained pressure on spinal discs and weakens postural muscles. Even minor interruptions to sitting make a difference.

Stand up every 20 to 30 minutes, shift positions, or do a few slow movements to reset your body. A standing desk with a **walking pad** is also useful. Over time, this protects spinal tissues and reduces the risk of flare-ups.

- 3. Build core strength and glute stability** – Back pain is rarely just about the back. Weak abdominal and gluteal muscles force the spine to absorb more strain. Targeted strength exercises, like bird-dogs, hip bridges, and wall sits, help restore balance across your body and prevent movement compensations that prolong or worsen pain. These exercises are simple, do not require equipment, and can be scaled to any ability level.
- 4. Take micro-breaks for movement and stress relief** – Back pain often worsens when tension and anxiety build up, so weaving simple relaxation techniques into your day makes a real difference. **Slow, steady breathing** and gentle movements like neck rolls help release the muscle tightness and mental strain that fuel pain. Every couple of hours, take a moment to pause, close your eyes, and inhale deeply through your nose.

Exhale just as slowly, allowing your body to shift out of that tight, anxious state. This calms your nervous system and lowers stress hormones that tend to amplify pain. Follow it with a light, fluid movement. Lift your arms overhead, do a few easy lunges, or stretch your spine. Nothing strenuous, just enough to keep blood flowing and tension from settling in.

- 5. Prioritize nutrition and weight management** – Excess body weight puts continuous strain on your spine, like hauling a heavy backpack everywhere you go. To ease that burden, steer clear of ultraprocessed foods loaded with seed oils high in **linoleic acid**, a known mitochondrial disruptor. Instead, fuel your body with whole foods and enough **healthy carbohydrates** to support steady cellular energy.

Even modest shifts in diet lighten the load your back carries with every step. As your weight decreases, movement becomes easier and less painful. You'll also gain more stamina, making it easier to stay active and build momentum with daily habits that support long-term recovery.

6. Consider dimethyl sulfoxide (DMSO) – If you're seeking additional relief from chronic back pain without turning to long-term pharmaceuticals, one lesser-known option that deserves attention is DMSO, a naturally derived compound that has been used for decades to reduce inflammation, relieve pain, and improve tissue healing.

Its ability to penetrate deeply into tissues and carry other substances with it has led to numerous successful therapies, especially for musculoskeletal injuries and chronic pain conditions. To learn more about how DMSO works, how it's used, and how it may complement or even replace conventional treatments, read "[Unlocking DMSO's Potential – Revolutionary Combination Therapies for Pain, Infections, and More.](#)"

Each of these steps addresses the underlying drivers of chronic low back pain without relying on gabapentinoids. For a closer look at how these daily habits reduce pain and restore function, read "[Basic Lifestyle Changes Reduce Chronic Back Pain Disability.](#)"

Frequently Asked Questions (FAQs) About Gabapentin and Its Cognitive Effects

Q: What is gabapentin used for?

A: Gabapentin is a prescription drug originally approved to treat seizures. Today, it's commonly prescribed off-label for chronic nerve-related pain, fibromyalgia, anxiety, and migraines.

Q: Is gabapentin safe for long-term use?

A: Long-term use of gabapentin is widespread, but emerging research has linked frequent use to an increased risk of cognitive impairment and dementia, especially with high prescription counts or prolonged duration.

Q: Who is most at risk from gabapentin's side effects?

A: Older adults, individuals taking multiple medications, and those with a history of mental health or substance use issues are more vulnerable to gabapentin's side effects.

Q: What are alternatives to gabapentin for chronic low back pain?

A: Lifestyle-centered strategies, including frequent walking, core strengthening, breaking up sedentary time, stress management, and diet improvement, are shown to reduce chronic pain and disability without the long-term risks of pharmaceuticals.

Q: What is DMSO and how does it help with pain?

A: Dimethyl sulfoxide (DMSO) is a naturally derived compound used to reduce inflammation and support tissue healing. It penetrates deeply into muscles and joints, making it a helpful option for pain relief.

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