

Brain On Fire

It's not about addiction. It's about what made addiction the logical solution.

Austan Sloan • Recover-You

A note before you begin. This guide explains the neuroscience underneath trauma and addiction, and it argues plainly that sobriety alone is not the finish line. It includes a first-use account and a frank discussion of relapse. If you're in early recovery, none of this is a reason to stop doing what's keeping you sober. It's a case for adding the piece most treatment leaves out.

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When Trauma and Addiction Hijack the Brain

When you grow up in survival mode, your brain doesn't wire for peace. It wires for threat. The amygdala can become quicker to react. Stress hormones can become dysregulated. The nervous system learns to scan constantly, brace chronically, and treat stillness as danger rather than rest. Over time, that dysregulation can become the baseline. Not a symptom you can name, just the texture of daily life. You don't recognize it as trauma. You just call it who you are.

Addiction enters that environment not as a character flaw but as a neurobiological solution to an unsolved problem. A dysregulated nervous system may have few reliable ways to settle itself. Substances provide one fast, powerful route. They alter reward, stress, and pain systems and can produce something the brain has rarely, if ever, experienced: relief. Not euphoria. Relief.

You weren't chasing a high. You were chasing the absence of pain, and for a while, it worked precisely as intended.

The cost accumulates quietly, in progressive neuroadaptation, in tolerance, in a reward system increasingly unable to register anything natural as sufficient.

I didn't understand any of this when I got sober. I thought the hard part was finished. Instead, it was like someone turned the volume of my entire inner world up to maximum and left the room. Every emotion, every memory, every fear I had spent years suppressing was suddenly present at full intensity, with no buffer, no toolkit, and no warning that this was coming. That was the moment I understood I wasn't just dealing with addiction. I was dealing with everything addiction had been hired to manage.

This isn't weakness. It is the predictable outcome of two intersecting neurobiological processes: one that trained the brain to survive at any cost, and one that exploited that training with precision. Understanding the mechanism is not an excuse. It is the only accurate starting point for doing something about it.

The Cycle: One Feeds the Other

A Personal Reflection

The first time I used, I wasn't looking for anything in particular. Just the usual high school peer pressure. I had no idea what I was about to feel, or how completely I would come to depend on it. It wasn't the euphoria that got me. It was the relief. The moment it hit, it was like someone had turned the noise off for the first time in my life.

I could never understand why my friends didn't want to keep going the next day. They'd nurse their hangovers, decline, go home and sleep it off. I was still out there chasing it. I didn't know it yet, but I was already in different territory. The trap had already sprung. I just hadn't felt the teeth yet.

This is how the cycle starts, and why it's so hard to escape:

Trauma leads to overwhelm.

Substance use brings relief.

Withdrawal heightens stress and dysregulates dopamine.

Trauma symptoms worsen.

So you use again. And on, and on it goes.

This isn't about excuses. It's about understanding the mechanism. If you don't understand the system you're running inside, you'll spend years blaming yourself for loops your brain was trained to execute. Without intervention, that loop doesn't just persist. It becomes the architecture of your life.

This is the trap so many of us fall into. Not because we're reckless, but because our brains mistake relief for survival.

The Brain Under Siege

Here is the reality of trauma and addiction working in concert against four key structures.

Amygdala — The Alarm System Is Stuck On

Chronic trauma can sensitize threat-detection networks, including the amygdala, so ambiguous stress is more likely to register as danger. Withdrawal and early abstinence can add fear, irritability, and urgency through overlapping stress systems. That does not mean the amygdala stops distinguishing all ordinary stress from threat. It means the threshold can drop. A room can feel dangerous before you can explain why. Recalibration is possible, and trauma-focused treatment is one way to work on it.

Hippocampus — Memory in Fragments

Prolonged stress and PTSD are associated, at the group level, with differences in hippocampal volume and function. The hippocampus helps with context, learning, and memory, but a smaller measurement does not prove that stress caused it in one person. Traumatic memory is also not literally stored in the body without time. What can happen is that sensory, emotional, and action-based learning gets triggered before the present is placed in context. Chronic substance use can add its own memory and learning problems. If your past feels uncontrollable and your

present feels unreliable, there are neurological reasons that may contribute. They are not a permanent verdict.

Prefrontal Cortex — The Brakes Are Gone

The prefrontal cortex supports planning, inhibition, consequence evaluation, emotional regulation, and the pause between urge and action. Under acute threat, those functions can lose influence as faster survival systems take priority. Addiction can further weaken control through learning, stress, and changes in reward and executive networks. The result is not a person with no voluntary control. It is a person trying to exercise control on a steeper neurological grade. Treatment builds traction. Shame does not.

Insula — Internal GPS Offline

The insula mediates interoception: the brain's continuous monitoring of the body's internal state, including hunger, pain, temperature, emotional valence, and the physical texture of fear or calm. Trauma can disrupt this signalling. The body sends data; the brain may misread it. Ordinary physical discomfort can get tagged as threat. Emotional distress can register as somatic crisis. Addiction layers onto this by recruiting the insula's role in craving and urge generation, strengthening substance-related signals while competing with everything else. The result can be a person disconnected from reliable self-knowledge: what they feel, what they need, what is actually happening inside them. Rebuilding that signal is not a secondary concern in recovery. It is foundational to it.

These aren't signs of weakness. They are the documented outcomes of a brain that survived something it was never equipped to survive alone.

The same neuroplasticity that encoded these adaptations is capable of encoding new ones. That process has a name. It has evidence behind it. And it begins with understanding what you're actually working with.

Why Addiction Makes Trauma Harder to Treat, and Vice Versa

During my first inpatient stay, I was convinced my mental health would stabilize once I got sober and stayed that way. I wasn't being naive. I was being told, implicitly, by the structure of every program I encountered, that sobriety was the destination. That belief nearly cost me my life.

For a trauma survivor, sobriety doesn't resolve the problem. It exposes it. Substances function as a pharmacological buffer against unprocessed emotional and physiological distress. Remove that buffer without addressing the distress underneath, and the distress doesn't dissolve. It surfaces, often with greater intensity than before, into a nervous system that has lost its only reliable coping mechanism and has not yet developed anything to replace it. The pain that substances were managing floods back with full force and zero tolerance.

This is where the misreading happens, and why it is so dangerous. The symptoms can recede. The life can begin to look functional. Relationships stabilize. Employment returns. From the outside, and sometimes from the inside, it registers as progress. But if the underlying system hasn't been addressed, nothing has actually been resolved. It has been suppressed: by distance, by structure, by the sheer relief of not being in active crisis anymore. That is not recovery. That is remission without repair. And remission has an expiry date that trauma will eventually set.

For many trauma survivors who used substances to regulate themselves, the substance was never just an escape. It was a substitute: a chemically induced approximation of safety, connection, or the capacity to feel regulated in your own body. When it's removed, what remains isn't absence. It's grief. For what the substance provided. For what the trauma took before it ever arrived.

Repeated relapse is too often framed as dishonesty, insufficient commitment, or a failure of willpower. Sometimes that framing has merit. But if you have cycled through relapse after genuine relapse, wanting it, working for it, watching it collapse anyway, the more precise question is this: was the underlying driver of the compulsion ever identified, named, and treated? In most standard treatment settings, it wasn't. Not because no one cared. Because the system was not built to look for it.

You were not trying to go back to something better. You were trying to go back to the wound, attempting to heal while the injury was still open.

That is not a cycle willpower reliably interrupts on its own. It is a cycle that accurate assessment, addiction treatment, and trauma-focused care can interrupt together. Concurrent care remains unevenly available. I was fortunate enough to attend a centre that offered it, but even there trauma-focused therapy was not standard. I had to ask. I had to push. That decision is probably why I'm still here.

You're Not Weak. You're Wired for Survival

Trauma can build a brain optimized for threat detection rather than sustainable living. Many behaviours that followed made sense inside an environment that made ordinary responses impossible. Making sense is not the same as calling every behaviour harmless. It is how shame stops blocking the work.

When the relationship between trauma and addiction goes unexamined, the most available explanation is a label that describes the symptom and ignores the cause: addict, alcoholic, treatment-resistant. Treatment gets constructed around that label. The conditions that produced it are treated as background noise. Without the fuller clinical picture, the conclusion writes itself, and eventually you write it about yourself: something is fundamentally and permanently wrong with me.

That conclusion is not a clinical finding. It is a failure of assessment.

You reached a predictable destination given the conditions you were operating under. That destination is not evidence of defect. It is evidence of adaptation.

The lie: you're weak, broken, morally flawed.

The truth: you're adaptive. Your nervous system did exactly what it was conditioned to do.

Every way you coped was intelligent. It made sense in context. It just isn't working anymore. What protected you then is keeping you stuck now. That is not failure. That is a nervous system still executing the only program it was ever given.

Understanding the neurobiology underneath the compulsion locates the problem accurately, which is the only place from which real recovery can begin. Explanation is not absolution. It is orientation.

Recovery from trauma and addiction is not a checklist. It is not abstinence alone, or thirty days in treatment, or talk therapy that never names what it is talking about. Whatever path you take

may be more stable if it includes trauma-specific clinical work when trauma is part of the picture. Some people do stabilize through sobriety, time, medication, community, or other care. But if recovery keeps collapsing, ask a more precise question: was the origin of the compulsion ever assessed and treated, or only the substance? Untreated drivers do not politely disappear. They keep applying pressure.

I am not saying that to frighten you. I am saying it because I tried to navigate recovery without addressing the root, and I watched what happens. I have watched too many people not survive that attempt. Not for want of effort or desire, but because no one equipped them to look beneath the surface. They were treating the fire without ever asking what ignited it.

Not Recovered. Rebuilt.

Bone that heals from a fracture does not simply return to its original state. It lays down a callus, remodels, and gradually adapts to load. The temporary repair tissue may be thicker before remodelling; that does not mean every healed bone is permanently stronger than it was. Recovery works as a metaphor for the same reason: repair is not reversal. What heals can be structurally different without being inferior.

For years I understood the addiction as the central fact about me: the most truthful and most permanent thing I could say about who I was. What I did not understand was that trauma had been authoring that story long before the first drink, long before anything I could have chosen differently. Once I could see that clearly, once the mechanism was visible, I stopped trying to excavate some earlier, undamaged version of myself. That version did not exist. There was no before to return to. There was only forward, and what I was willing to build there.

This isn't asking you to feel hopeful. It's asking you to consider one possibility: that what you've been told about yourself is a less complete account than what the evidence actually supports.

The same neuroplasticity that encoded every survival adaptation you developed under conditions you did not choose is capable of encoding new ones under conditions you do. That process is not linear. It is not fast. It does not look like the person you were before, because that person was operating on a set of inputs that no longer have to define the outputs. You are not too damaged to change. You are too accurately wired for the wrong environment, and environments, unlike character, can be changed.

Before You Go

If you came here looking for an explanation and found one, be careful what you do with it next. An accurate account of the mechanism is not a permission slip, and it isn't a diagnosis either. It's orientation: knowing which problem you're actually solving.

The single most actionable thing in this guide is the thing I had to push for myself: trauma-specific clinical work, alongside whatever is currently keeping you sober rather than instead of it. Concurrent care exists. It is not standard. You will very likely have to ask.

And if you've relapsed more times than you can comfortably count, hold this: that history is not proof of a defect in you. In a great many cases it's proof that the wrong thing was being treated.

You weren't born broken. You were wired for an environment you didn't choose, and wiring can be changed.

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Sources & Further Reading

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