



Healing the Brain After Addiction

The brain is made up of many interconnected parts, but here are a few key areas involved in addiction and the process of healing and positive change. As a group: Review and discuss the following:

● **Emotion & Survival System** - This system reacts quickly to stress, emotions, and bodily urges—often without conscious thought.

Amygdala – Triggers fear, anger, and cravings (especially in early recovery)

🧠 **Addiction Insight:** When triggered, the amygdala can make you feel like something is urgently wrong—even if the threat is emotional or imagined. **Group Question:** *Have you ever had this experience?*

Hippocampus – Remembers emotional and substance-related memories that can fuel relapse

🧠 **Addiction Insight:** The hippocampus stores powerful memories tied to people, places, smells, and sounds—anything your brain associates with using. **Group Question:** *Has this unique, sometimes strange, yet powerful situation ever happened to you?*

Insula – Detects body urges like cravings, withdrawal symptoms, pain, or nausea

🧠 **Addiction Insight:** The insula links your internal body state to emotions, so even being tired, hungry, or tense can trigger cravings.

● **Thinking & Control System** - Consider these three important parts of the brain that work together to help you stay balanced and make decisions:

Prefrontal Cortex (PFC) – Supports logic, self-control, and planning ahead; helps you resist cravings and think through choices.

Anterior Cingulate Cortex (ACC) – Helps you manage emotions, notice inner conflict, and connect thoughts with feelings—especially when torn between urges and goals.

Orbitofrontal Cortex (OFC) – Weighs short-term rewards against long-term consequences; when weakened by substances, risky choices can feel more appealing than safe ones.

🧠 **Addiction Impact:** Substances can impair this entire system, making it harder to pause, reflect, and make values-driven decisions—especially during triggers or cravings. **Group Question:** *Can you think of a time when your emotions or cravings made it hard to pause and think clearly or make a good decision?*



● **Reward & Habit System** - This system drives pleasure, motivation, and routines—whether healthy or destructive. Addiction can hijack it, making the brain chase substances over natural rewards and reinforcing automatic habits. It has **three main parts** that work closely together:

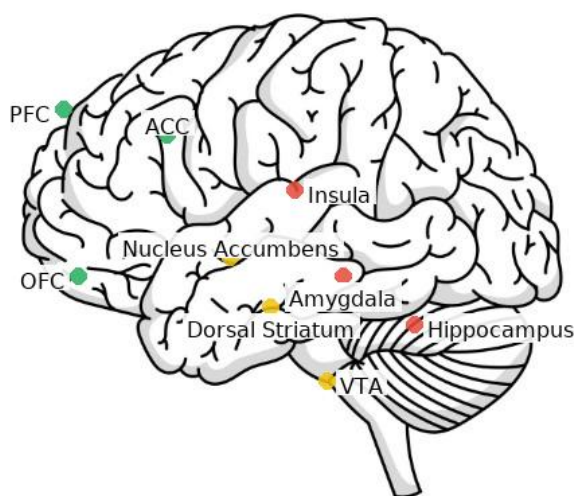
Nucleus Accumbens – The brain's “pleasure center,” activated by rewards and cravings. Substances overstimulate it, making natural rewards feel less satisfying.

Ventral Tegmental Area (VTA) – Kicks off dopamine release, which fuels motivation. Drugs flood this pathway, making it harder to feel good without them.

Dorsal Striatum – Builds habits and routines, good or bad. In addiction, it helps lock in automatic patterns of use—even when a person doesn't want to keep going.

🧠 **Addiction Impact:** This system becomes rewired by addiction. Over time, the brain associates pleasure and relief only with substance use, making it hard to feel joy from natural sources. - **Have there been times when things that used to feel good or enjoyable started to feel flat, boring, or not the same anymore?**

Key Brain Regions in Addiction and Positive Change



● **Emotion & Survival System** – Amygdala, Hippocampus, Insula

● **Thinking & Control System** – Prefrontal Cortex (PFC), Anterior Cingulate Cortex (ACC), Orbitofrontal Cortex (OFC)

● **Reward & Habit System** – Nucleus Accumbens, Ventral Tegmental Area (VTA), Dorsal Striatum

“Neuroplasticity means the brain can change. Every sober day and recovery-oriented choice helps strengthen healthier circuits. With consistency, those circuits become the brain's new foundation”

- **Michael Teti, LCSW, LCADC, CCS**