## Ketamine infusions transform life-threatening situations

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Tessa Frank, a 24-year-old graduate student, shimmies her shoulders and takes a swig from her Starbucks cup and exclaims, "Oh, I've been waiting for this!"

She giggles, wipes the foam from her upper lip and explains that she has been in England for the past year and unfortunately for the Brits, they do not have the infamous pumpkin spice latte. She takes another sip and turns her attention back to the topic at hand.

"Ketamine is my miracle drug," she states with a straight face and focused demeanor.

A man carrying a motorcycle helmet hears her statement, raises his eyebrows and snickers.

This is a usual reaction when someone mentions ketamine; especially among those who have recreationally experimented with the powdered form of the drug. Most users remain unaware that the dissociative substance has been relevant in the medical world since the '70s as a battlefield and pediatric anesthetic. The abuse of ketamine did not begin until almost the '80s.

For individuals like Frank, ketamine is more than a party drug or an anesthetic.

As a teenager, Frank tore her calf muscle playing soccer. From there, needle-like pain spread rapidly throughout her body. Soon after, she was diagnosed with Complex Regional Pain Syndrome, a horrifically painful muscle condition that causes prolonged cramping and debilitation of limbs. At her worst her right arm was constantly seizing, causing her hand to remain in a claw position with her arm pressed tightly against her body.

"I used to call it my alien arm," said Franks, nearly upending her latte while demonstrating her newly developed range of motion.

After extensive research, she received her first ketamine infusion at 17. For three days she was given fentanyl to help her sleep with a



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continuous intravenous flow of ketamine. After the three-day inpatient experience, Frank had full control over her limbs for the first time in 13 months.

Frank still uses infusions several times a year and a ketamine nasal spray every eight hours to combat her chronic pain.

"From my perspective it's really great because I don't have to use

opioids for pain," said Frank.

Currently, drug overdose is the leading cause of accidental death in the United States. Prescription painkillers cause nearly half of all overdose deaths, according to the American Society of Addiction Medicine.

The M.D. Ph.D. candidate has seen the devastating effects of opioid addiction throughout her professional work. Frank managed a buprenorphine program at the Mountain Area Health Education Center, in an attempt to manage opioid dependence in Western North Carolina. She also recently completed a master's on chronic pain in England will travel to Italy to conduct pain research in several weeks.

"There has to be new options for patients and from a pain perspective, as you decrease accessibility to pain medicine you have to find other options and ketamine is a valid option for that," said the Asheville native.

Frank explained how ketamine and opioids bind to the same receptor called NMDA, prohibiting the release of glutamate, an excitatory chemical involved in most aspects of brain function and the nervous system. Opioids only remain bound for a short period of time, whereas ketamine can remain bound to the receptor for a prolonged period, allowing the beneficial effects of ketamine to be felt for weeks or even months.

Currently, insurance companies deem ketamine treatment as experimental and therefore do not cover the cost. A single infusion session can run anywhere between \$400 and \$1200, making it inaccessible to low-income patients.

"So you have these drugs that are traditionally used for pain that are detrimental to so many people, so

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