

# **Ketamine Therapy & NAD+ Therapy**

## Combination Treatment for Mental Health and Overall Improved Quality of Life

**Ketamine** is a medication that was developed in the 1960s and approved by the FDA in 1970 for use as a general anesthetic. Today, 50 years later, ketamine is still recognized as one of the safest and most widely used anesthetics in the world, including the United States, for both humans and animals. Ketamine is also a medical therapy used to treat some mental conditions including anxiety, depression, PTSD and mood disorders. It is also used to treat chronic pain conditions, as well as enhance cognition and memory.

Ketamine is very well researched and has recently been found to have powerful effects on the way information travels through the brain. This communication enhancement is what makes ketamine such an effective tool to not only fight depression, but also improve one's mood, memory, cognition and overall outlook on life. The medical community is also looking at ketamine to help with the fight against cognitive diseases such as dementia and Alzheimer's Disease due to ketamine's ability to produce new synapses in the brain. The multiple beneficial actions of ketamine therapy can be seen both short term and long term. For some patients the results are instant, while for others it can be more gradual, but either way the results from treatment are real and can literally be life-changing for most patients.

By improving connections and messaging in the brain, we look at ketamine as a form of liquid ambition and a way to improve people's perspective on life. As Dr. Agin likes to say, "when it comes to the puzzle of life, ketamine can help you find the pieces that fit correctly, as well as help you to identify the pieces that don't fit or belong at all. Helping to identify what is missing or what doesn't belong in your life puzzle is the first step to living a happier, healthier, smarter, and more fulfilled life."

In regards to depression, unlike traditional antidepressants that target the brain's serotonin and noradrenaline systems, ketamine appears to block a receptor called NMDA. Because ketamine works on receptors and not on shifting hormone balances, the effects are dramatically faster. While traditional antidepressants can take anywhere from 4 to 8 weeks to start taking effect, ketamine starts to work almost immediately, sometimes within minutes, without the notorious side effects of psychiatric medications. Ketamine has remarkably fast antidepressant effects and has been used for treatment-resistant depression, especially in those patients with active and severe suicidal ideations. In fact, ketamine has shown reduction in depression in as little as 40 minutes. Ketamine therapy is given in doses much lower than when it is used as an anesthetic and is administered very slowly through an intravenous (IV)

infusion. This type of ketamine treatment does not induce general anesthesia and is not FDA approved for these particular conditions.

**NAD+ IV Therapy** is also known as NAD+ Longevity Therapy or NAD+ Brain Restoration Therapy. NAD is the acronym for nicotinamide adenine dinucleotide - a derivative of Vitamin B3. Found in virtually all living cells, NAD+ is essential to sustaining life. A fascinating aspect of NAD+ is its dual role in protecting against factors that age us. This includes mitigating chemical stress, environmental toxins, inflammation, DNA damage, and failing mitochondria (powerhouse of our cells.) At the same time, NAD+ also promotes longevity by facilitating DNA repair and providing cellular benefits associated with caloric restriction and exercise. NAD+ is also necessary for the production of a group of proteins called “Sirtuins” which play a key role in aging, cell death, stress resistance, inflammation, energy efficiency, and mitochondrial biogenesis (creation of more powerhouse cells.)

Research has shown that people with low levels of NAD+ are at a higher risk for developing problems related to addiction, depression, anxiety, other mental disorders and chronic diseases. Recent studies have shown that enhancing NAD+ levels can profoundly reduce oxidative cell damage in the brain reducing risks for disease. The actions of NAD+ make it an excellent brain regeneration therapy through inflammation reduction and restoration of neurotransmitters in your brain.

Neurotransmitter balance can improve symptoms of acute and chronic depression on its own, or it can act as an ideal co-therapy alongside other traditional and non-traditional treatments, including Ketamine Therapy. Stimulating production of important neurotransmitters such as dopamine, serotonin, and noradrenaline can directly improve mood, brain function and also prevent future mental illness.

Understanding the role of mitochondrial function in psychiatric disorders may also lead to a better understanding of how alternative therapies can provide substantial benefits when compared to standard therapies for patients with mental illness.

#### **Common Conditions for Ketamine/NAD+ Therapy:**

- Depression
- Mood disorders
- Acute and chronic pain
- Fibromyalgia
- Obsessive-compulsive disorder (OCD)
- Post-traumatic stress disorder (PTSD)
- Anxiety Disorders
- Stress Disorders including improved response to stress
- Spectrum disorders including Rhett and Autism

- Neurodegenerative protection against dementia and Alzheimer's Disease
- Cognitive enhancement and memory improvement