

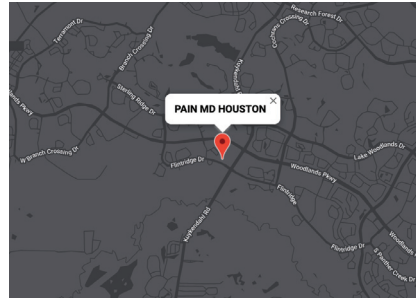
How To Get Started

- ▶ CALL: (281) 204-8993
EMAIL: Ketamine@PainMDHouston.com
- ▶ RECEIVE EMAIL PACKET
- ▶ RETURN PACKET FOR EVALUATION AND CONSULTATION

USE THIS QR CODE FOR MORE INFORMATION!



- STEP 1: OPEN THE CAMERA ON YOUR PHONE
- STEP 2: POINT AT CODE & A LINK APPEARS
- STEP 3: CLICK ON THE LINK AND VISIT SITE



10857 Kuykendahl Rd Suite 120, The Woodlands TX 77382



PAIN RELIEF
DEPRESSION THERAPY
REGENERATIVE MEDICINE
SURGICAL AVOIDANCE



How long and often are treatments?

▶ FOR DEPRESSION:

INITIAL TREATMENT IS
THREE DAYS PER WEEK —————> FOR TWO WEEKS
2 HOURS EACH

or

TWO DAYS PER WEEK —————> FOR THREE WEEKS
2 HOURS EACH

FOLLOW UP WITH TWO HOUR BOOSTER EVERY
FOUR TO SIX WEEKS

▶ FOR PAIN

INITIAL TREATMENT IS
THREE DAYS PER WEEK —————> FOR TWO WEEKS
2 HOURS EACH

FOLLOW UP WITH TWO HOUR BOOSTER EVERY
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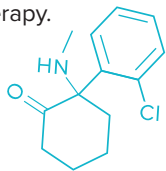
INFUSION THERAPY

KETAMINE, LIDOCAINE,
GROWTH FACTORS
FOR DEPRESSION
PAIN AND ANXIETY

WHAT IS KETAMINE?

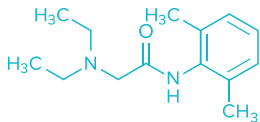
- ▶ Ketamine is a medication that has been widely used in humans as an anesthetic since 1970.
- ▶ In the last 15 years, new uses for this old drug have been discovered for people with difficult to treat pain and psychiatric disorders.
- ▶ An anesthetic used for sedation, pain relief, and treatment of certain mood disorders.
- ▶ An appropriate choice in people who have not responded to first-line therapies.
- ▶ The use of ketamine for therapeutic purposes is given in low doses titrating up to a higher dose depending on initial response to therapy.

- ▶ A great option for people who have been on long-term opioid medications with persistent pain.



WHAT IS LIDOCAINE?

- ▶ A commonly used anesthetic used for pain relief.
- ▶ Recent research has shown Lidocaine can provide a great therapeutic relief of acute pain.
- ▶ Has anti-inflammatory properties to reduce circulating inflammatory proteins in the bloodstream.



WHAT ARE GROWTH FACTORS?

- ▶ Potent anti-inflammatory for whole body inflammation.
- ▶ Placenta umbilical cord derived amniotic fluids.

KETAMINE FOR DEPRESSION

Ketamine has been used for the treatment of major depressive disorders, bipolar, anxiety and other treatment-resistant psychiatric and mood disorders.

Ketamine can provide fast-acting relief, many people feel therapeutic effects within hours.

WHAT TYPE OF DEPRESSION PATIENTS ARE SUITABLE FOR KETAMINE?

Patients who have been diagnosed with treatment-resistant depression, PTSD, or generalized anxiety disorder are candidates for Ketamine infusion therapy. This includes patients with depression disorders, bipolar and general anxiety. Patients with recurrent thoughts of suicide or bouts of anger can also benefit from Ketamine infusion therapy.

When a patient has not responded adequately to first-line therapies, Ketamine infusions may be considered as the next step. Ketamine treatments are not for those with mild depression or mood swings.

HOW DOES KETAMINE WORK?

The truth is that all mood disorders, including depression, are very complex and vary widely from case-to-case. This is evidenced by the low response rate for various SSRIs in depression. Scientists have identified many other changes that are thought to contribute to or cause depression. A key change is neuronal atrophy, characterized by the loss of synaptic connections in key cortical and limbic brain regions which are important for mood. This neuronal atrophy is thought to occur due to decreased expression of growth factors, such as brain-derived neurotrophic factor (BDNF).

Recent studies have demonstrated that Ketamine, an N-methyl-D-aspartate (NMDA) receptor antagonist, increases spine synapses in the prefrontal cortex and can also reverse the deficits cause by chronic stress. Research has shown that this occurs by transient disinhibition of glutamate transmission, followed by compensatory glutamate bursts at the neuronal synapse. This leads to concomitant increase in BDNF, initiating a cascading signal pathway that ultimately increases neuronal spine formation.

KETAMINE FOR PAIN

Ketamine is indicated in chronic, persistent pain that has not gotten better with other conservative and interventional treatments, or in people who keep needing to increase medication dosages.

Ketamine works against a chemical receptor (NMDA) that modulates pain effectively breaking the cycle of feeling pain at a chemical level. It reduces the number of active NMDA receptors to treat pain.

Types of pain that Ketamine Infusion Therapy can help

- ▶ Fibromyalgia
- ▶ Neuropathic pain
- ▶ Complex regional pain syndrome
- ▶ Traumatic spinal cord injury
- ▶ Some types of nerve and back pain
- ▶ Some types of migraines/headaches
- ▶ Amputation Pain and phantom limb syndrom

RESEARCH ARTICLES ON KETAMINE

Murrough et al. (2013). "Antidepressant efficacy of ketamine in treatment-resistant major depression: a two-site randomized controlled trial" *Am J Psychiatry* 170(10): 1134-1142

Ballard, et al. (2014). "Improvement in suicidal ideation after ketamine infusion: relationship to reductions in depression and anxiety." *J Psychiatry Res* 58: 161-166

Rodriguez, et al. (2013). "Randomized controlled crossover trial of ketamine in obsessive-compulsive disorder: proof-of-concept." *Neuropsychopharmacology* 38(12): 2475-2483

Schweitzer's E, Viscusi E, Buvandedran A, et al. Consensus guidelines on the use of intravenous ketamine infusions for acute pain management from the American Society of Regional Anesthesia Dan Pain Medicine, the American Academy of Pain Medicine, and the American Society of Anesthesiologists. *Reg Anesth Pain Med.* 2018;43(5):456-66.

Ketamine Infusions for Chronic Pain: A Systematic Review and Meta-analysis of Randomized Controlled Trials *Anesthesia & Analgesia*: July 2019 - Volume 129 - Issue 1 - p 241 -254 doi:10.1213/ANE.00000000000004185