3 Novel Ways How Low-Dose Naltrexone Therapy Can Revolutionize Addiction Treatment, According to Science

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Naltrexone, a potent opioid antagonist commonly used to treat opioid abuse disorder and alcoholism, has shown novel efficacy in treating a host of chronic health conditions in tiny doses. As a long-acting antagonist drug, naltrexone occupies the μ-opioid receptor without inciting a pharmacologic effect; it effectively blocks other opioids, like heroin, morphine and methadone, from binding to these sites. Studies have shown that once-a-month depot injections of naltrexone, under the brand name Vivitrol, has better compliance and efficacy in preventing relapse than the daily oral tablet. However, when taken at a tenth or even a hundredth of the traditional dosage to treat addiction, this drug exhibits completely different effects that are pharmacologically unique.

At approximately 1/10th or less of the dose used in medication-assisted therapy (MAT) for opioid addiction, low-dose naltrexone (LDN) and very low-dose naltrexone (VLDN) exert different pharmacologic effects. This low dosage exhibits efficacious pharmacologic therapy for various conditions, including opioid detoxification, chronic pain, the prevention of cocaine relapse (when combined with tetrahydropalmatine) and the treatment of various autoimmune disorders.[1–3] This blog explores three novel applications of LDN and VLDN therapy, and how they are poised to revolutionize addiction treatment, according to the latest science.

What is Naltrexone & How Does It Work?

Naltrexone and naloxone are competitive, pure opioid antagonists that effectively occupy the μ-opioid receptor and remove/block other agonists from binding to the receptor.[4] As antagonists, these drugs bind to the opioid receptors but *do not* elicit a pharmacological response.[5] This is why this drug is successfully used in medication-assisted therapy (MAT) when treating opioid addicts and alcoholics at the classic dose of 50mg. Curiously enough, the "buzz" you get from the first couple drinks is physiologically the result of your opioid receptors being stimulated, similar to taking a Vicodin. This is why naltrexone is effective for alcohol addiction as well. However, LDN and VLDN therapy do not block the effect of full-agonist opioids and, in fact, relapsing after LDN therapy can be dangerous, as studies have shown exposure to antagonists such as naltrexone and naloxone can reduce opioid tolerance and actually *increase the density of opioid receptors over time.*[4] While naltrexone and naloxone sound similar, they are two different drugs with important distinctions worth mentioning.

Naltrexone & Naloxone: Two Pharmacologically Unique Drugs Being Used in the Battle Against the Opioid Epidemic

While naltrexone and naloxone both have a high affinity for occupying the μ-opioid receptor, naltrexone has a much longer half-life and is slower acting than naloxone. For these reasons, it is used to treat a variety of conditions, most commonly opioid use disorder and problematic drinking. On the other hand, naloxone is rapidly acting and has been approved by the FDA for treating opioid overdose. Oral naltrexone (and injectable Vivitrol) is classically prescribed at 50mg doses for MAT therapy.[1] As mentioned, LDN is still only being used off-label. Dr. Bihari was actually the first physician to utilize LDN as an off-label therapy and introduce it into clinical practice.

Dr. Bihari Introduces the Off-Label Use of LDN Therapy for AIDS Treatment

In 1985, Dr. Bihari was the first physician to utilize LDN therapy for the treatment of the severe autoimmune condition known as HIV/AIDS.[6] "Following Dr. Bihari's initial off-label use of naltrexone in doses ranging from 1.5 mg to 3 mg as an adjunct therapy for acquired immune deficiency syndrome (AIDS) in the 1980s, low-dose naltrexone (LDN) has been introduced into clinical practice."[6] Very low-dose naltrexone (VLDN) therapy utilizes even lower doses, and has proved to be efficacious in opioid detoxification—even from methadone—without causing precipitated withdrawal syndrome.[3]

Large Scale LDN Trials Still Pending as Off-

Label Use Increasing

Since large scale clinical trials have yet to reproduce and confirm the various benefits brought to light by LDN therapy, its use is still limited to off-label prescription. Following Dr. Bihari's breakthrough discovery of LDN as a potent immune-modulator, various further applications of LDN have been discovered. Based upon the currently available evidence that supports the use of LDN for addiction treatment, there are three primary reasons to use naltrexone at lower doses.

Reason #1: VLDN Therapy Can Facilitate Opioid Detoxification by Reducing Dependence

While many modern treatments for opioid detoxification are far from impressive and, at times, even ineffective, "medical detoxification remains a required step before long-term interventions."[3] While the use of opioid antagonist drugs have shown "inconsistent results" in improving opioid detoxification, recent studies have shown very low dose naltrexone (sometimes referred to VLNTX as well) was efficacious in **reducing opioid tolerance and dependence in animal *and* clinical studies.**[3] Furthermore, a 2009 study showed "that the administration of VLNTX is a safe and effective method to reduce withdrawal severity and treatment discomfort in opioid-dependent participants undergoing methadone detoxification."[3]

A Curious and Important Note About Precipitated Withdrawal

Precipitated withdrawal syndrome (PWD) is a hellish condition that occurs when either a partial agonist/antagonist (like buprenorphine/Suboxone) or a full antagonist (like naltrexone/Vivitrol) is concurrently consumed (at their traditional dosages) with full agonists (like heroin, morphine, or hydrocodone). In such a case, drugs such as buprenorphine (Suboxone) and Vivitrol (naltrexone) have *significantly* greater binding affinities to the μ-opioid receptors than traditional opiates of abuse. This is why a short period of abstinence is needed before induction to buprenorphine treatment, and an even longer period of time is needed before an induction to naltrexone. **Normally, concurrent use of naltrexone (at its traditional 50mg dosage) and full or partial opioid agonists will precipitate withdrawal or cause PWD. However, careful VLDN administration has been shown to be effective in methadone detoxification and *not* induce PWD.**[3] **This is an important note for patients and caregivers alike.** Since LDN and VLDN use is still considered off-label, its application is not yet mainstream. Opioid detoxification should always be done—and is most successful—under medical supervision. Learn how our team at Evolve Indy can help you or a loved one through drug or alcohol rehabilitation at EvolveIndy.com

Indianapolis Treatment Team Successfully Detoxes Patients Using Short-Term Buprenorphine

Our treatment team has found great efficacy in using short-term buprenorphine (a few days) and then further suggesting Vivitrol therapy or abstinence. This greatly attenuates the majority of the withdrawal, as well as offers patients the choice to utilize an option such as Vivitrol or abstinence. In the case of detoxification and chronic illness, patients should ask their providers about LDN and VLDN therapy. To learn more about how we help patients comfortably detox and build new lives in recovery, visit us at EvolveIndy.com.

Many Patients Struggle with Long-Term, Long-Acting Opiate (LAO) Detox

Many patients struggle with methadone and buprenorphine detox, and I can personally attest (having been through both): it's absolutely brutal. I can also attest to the fact this is a pretty universal truth echoed across the forums of r/opiates, to the meeting rooms of recovery groups and the halls of rehab. The long, protracted withdrawals of long-acting opiates (LAOs) are merciless, despite clinical literature suggesting otherwise. As a biologist in recovery, I believe that there is pharmacological and psychological evidence to suggest the long and protracted withdrawals of drugs like methadone and buprenorphine (the "worst" of it lasts *at least* a month, but that's only the beginning) are significantly more challenging in their own, unique ways than withdrawal from traditional full agonist opiates. The struggle of LAO detox is one of the primary reasons our treatment team suggests using short-term buprenorphine instead of methadone or buprenorphine maintenance.

Reason #2: LDN Therapy Can Help Fight Chronic Pain & Inflammation

Pain is challenging for anybody, but it can be especially difficult for patients in recovery. This is even truer when the pain is chronic, accompanied by inflammation. Compounding this challenge is the fact that many patients are recovering from, of all things, painkillers. Recently, studies have shown LDN can be an efficacious tool in treating chronic pain and inflammation. "Currently, evidence supports the safety and tolerability of low-dose naltrexone in multiple sclerosis, fibromyalgia, and Crohn's disease."[7] Low-dose naltrexone therapy can be a safe, effective and non-narcotic treatment approach for many patients in recovery that struggle with chronic illness.

To learn about 5 ways to manage chronic pain without drugs, according to science, check out our blog here.

Reason #3: LDN Therapy Can Help Heal The Brain After Extended Opioid Abuse

Years of drug abuse are known to fundamentally change the structure and architecture of the brain. Natural reward systems and their reinforcing pathways become altered and modulated, making restoring their normal function difficult. As it relates to the neurobiology of opioid addiction, the brain begins to alter the concentration and distribution of opioid receptors to try and achieve homeostasis. Ultimately, compensating for these structural and neurological changes takes time, as the brain must begin to naturally produce its own endogenous opioids. However, one way to quicken this process is through LDN therapy. Studies have shown that "LDN causes a compensatory increase in an endogenous opioid, the opioid growth factor (OGF, [Met5]-enkephalin), and the OGF receptor (OGFr)."[8] This means that the temporary opioid receptor blockage created by LDN can actually stimulate the body to release its own, natural opioids over time. This same study also showed that the cell-proliferation effects of LDN therapy can be beneficial in stopping cancer growth and other autoimmune disorders.[8] Since maintaining a healthy, sober life requires one to find and maintain good health, LDN therapy can potentially be a powerful tool for recovering addicts.

Closing Thoughts on LDN Therapy as a Tool for Recovering Addicts

Recovery from drug addiction requires a multifaceted approach that addresses the physical health of the body and the mental health of the mind. Taking measures to try and achieve better health through the use of non-addictive, non-narcotic medications is a fundamental aspect of recovery for many—especially those who suffer from chronic illness or pain. If you or a loved one is suffering from addiction, withdrawal, or is interested in learning more about how LDN can help, visit us at EvolveIndy.com.

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