

What if an already well-known FDA approved drug, given in much smaller doses could have a profound effect on multiple chronic conditions?

Low-Dose Naltrexone

Naltrexone is not a new drug, but when used off-label at very low doses, it is a drug shown in many trials and studies to be of therapeutic benefit for a wide range of conditions including autoimmune diseases, gastrointestinal disorders, chronic pain, mental health challenges and inflammation.

In recent years, there has been a growing body of evidence that the body's endorphins (naturally occurring opioids) have a critical role in regulating and enhancing the immune system and providing pain relief. LDN's blockade of opioid receptors has been shown to increase endorphin production. LDN's blockade of Toll-like receptors is believed to contribute to the anti-inflammatory and immune dampening effects.

Optimal dosing is ultimately patient specific and various dosing protocols exist. Some patients find success quickly, while others need to try a variety of dosing strategies.

LDN is currently only available by prescription from compounding pharmacies such as Professional Arts Pharmacy.

What is Low Dose Naltrexone (LDN)?

In 1984 Naltrexone was approved by the FDA in the USA for the treatment of opioid and alcohol addiction, used at the standard dose of 50mg to 100mg per day. Low Dose Naltrexone or "LDN" is doses ranging from 0.5mg to 9mg daily. Most of the research studies for Low Dose Naltrexone have used 4.5mg per day.

Why doesn't my doctor know about this?

Most medical professionals are only familiar with naltrexone's usage for addictions, thus they have not considered using it for other indications or they may not be aware of its potential benefit. Also, since LDN is an inexpensive generic drug, there are no drug companies willing to fund the large studies and sales force that would get a doctor's attention. You may bring this information to your healthcare provider for them to decide if Low-Dose Naltrexone is right for you.



How Does LDN Work?

- **Increases levels of endogenous endorphin production**
which promotes healing, regulates cell growth and immunity, and reduces inflammation.
- **Intermittently blocks the opiate receptor**
which increases production of OGF and OGF_r through rebound effect.
- **Blocks Toll-like receptors (TLF) signaling**
which decreases glial cell activation, cytokines, and neuroinflammation.
- **Blocks release of proinflammatory cytokines**
including Interleukins IL6, IL12, TNF_α and NF-κB

Treatment is constantly evolving, with new conditions and methods of treatment being shared regularly. Potential Clinical Uses & Trials for LDN:

- Alopecia areata
- Amyotrophic lateral sclerosis (ALS)
- Anxiety & depression
- Atopic allergy
- Atopic dermatitis
- Autoimmune disorders
- Chronic fatigue syndrome (CFS)
- Chronic pain
- Complex regional pain syndrome (RSD)
- CREST syndrome
- Crohn's disease
- Diabetic neuropathy
- Discoid lupus erythematosus
- Eczema
- Ehlers-danlos syndrome
- Erythrodermic psoriasis
- Fibromyalgia
- Hailey-hailey disease
- Inflammatory bowel disease
- Irritable bowel syndrome
- Lichen planus
- Lupus
- Multiple sclerosis (MS)
- Obsessive compulsive disorder (OCD)
- Parkinson's disease
- Pemphigoid
- Post-traumatic stress disorder (PTSD)
- Psoriasis
- Psoriatic arthritis
- Restless leg syndrome
- Rheumatoid arthritis
- Sarcoidosis
- Scleroderma
- Thyroid disorders
- Transverse myelitis
- Ulcerative colitis

Starting doses can vary from 0.5 mg to 1.5 mg and are typically titrated up to 4.5 mg daily over several weeks.

Studies, Trials, & Articles Supporting the use of LDN

What to expect from LDN?

The main goal of LDN therapy is to slow or halt the progression of disease and provide symptom relief. LDN may take anywhere from a few weeks to many months to elicit a full response. Users have reported to notice a difference after the first 2 months and at 9 to 12 months.

Since LDN is reported to increase endorphins (morphine like substances produced by the body), an expected result is a feeling of well-being. Human trials have demonstrated improvement in mood and in quality of life scores. This feeling helps lower stress, reduce depression, and increase healing. This is especially true for conditions where stress can lead to exacerbations.



Prescribing Information:

The most common practice is to prescribe LDN at 1.5mg at bedtime for 14 days, then 3mg at bedtime for 14 days, then 4.5mg at bedtime ongoing.

Another dosing schedule is to start at 1mg daily for 14 days, increasing by 0.5/1mg every 2 weeks until at 4.5mg or highest tolerated dose at or above 3mg.

It is recommended that naltrexone is administered at night on an empty stomach and NPO for 1 hour after administration of medication.

Refer to LDNresearchtrust.org for more information

...for Crohn's Disease

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...for Inflammatory Bowel Disease

Mitchell et al: LDN for Induction of Remission in Inflammatory Bowel Disease Patients *Journal of Translational Medicine* 9 March 2018 16:55. Erasmus University Medical Centre, Rotterdam, The Netherlands PMID: 29523156

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...for Alopecia

Tortelly et al: Low-dose naltrexone: a novel adjunctive treatment in symptomatic alopecias? *Dermatol Online J*. 2019 Aug 15;25(8):13030/qt6j45h81f. PMID: 31553867.

...for Psoriasis

Monasterio: Low-dose Naltrexone: An Alternative Treatment for Erythrodermic Psoriasis. *Cureus*. 2019 Jan 23;11(1):e3943. doi: 10.7759/cureus.3943. PMID: 30937241; PMCID: PMC6433456.

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Brune et al: Antipruritic therapy with the oral opioid receptor antagonist naltrexone. *Hautarzt*. 2004 Dec;55(12):1130-6. German. doi: 10.1007/s00105-004-0802-8. PMID: 15517116.

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Obrocea: Efficacy of low dose naltrexone for patients that suffer from comorbid depressive disease. *UCLA Case Report/Series/Retrospective Study* October 01, 2012

...for Chronic Pain

Tolijan et al: Low-Dose Naltrexone (LDN)-Review of Therapeutic Utilization *Med Sci (Basel)* 2018 Sep 21;6(4):82. doi: 10.3390/medsci6040082.

Chopra et al: Treatment of Complex Regional Pain Syndrome (CRPS) using low dose naltrexone (LDN) *J Neuroimmune Pharmacol*. 2013 Jun;8(3):470-6. doi: 10.1007/s11481-013-9451-y. Epub 2013 Apr 2.

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Cree et al: Naltrexone and Quality of Life in Multiple Sclerosis. *Annals of Neurology*. February 2010(1) 1-18.

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...for Autoimmune Conditions

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