

Low Dose Naltrexone

Naltrexone was added to the Naturopathic formulary last fall which is great news for many of your patients. Naltrexone was originally approved by the FDA in 1984 in a 50mg dose as a treatment for heroin addiction. Naltrexone in substantially lower doses (Low Dose Naltrexone or LDN) is showing great promise as a treatment for multiple sclerosis, Crohn's disease, AIDS, rheumatoid arthritis, celiac disease, CFIDS, lupus, certain forms of cancer and other autoimmune diseases.

Beta-endorphins are important regulators of the immune system. Naltrexone causes an artificial blockade of the endorphin/opioid receptors in the brain. When given in small doses, 4.5mg or less, naltrexone blocks the endorphin receptors for a few hours. During that time, endorphins fail to attach to the receptors and the body compensates by creating more. After metabolizing the naltrexone, the body is left with a normal amount of endorphins [as compared to healthy controls], which normalizes the immune function. And blood tests have indicated that it can double or even triple the activity of natural killer cells. Some of the benefits we get from the beta-endorphins in our bodies are:

- Boosting the immune system
- Numbing, or dulling, of pain
- Slowing the growth of cancer cells
- Promoting feelings of well-being
- Increasing relaxation

The theory of LDN's mechanism contradicts the widely held belief that autoimmune diseases are caused by an overactive immune system. In recent years, at least three separate scientific reports have described an underlying immunodeficiency as being characteristic of four different autoimmune diseases, including multiple sclerosis, rheumatoid arthritis, Crohn's disease and chronic fatigue syndrome. Recent research has also shown abnormally low beta-endorphins in all forms of multiple sclerosis.

A study published in early 2007 in the *American Journal of Gastroenterology* found that 89% of patients with Crohn's disease were improved on LDN and 67% achieved a full remission ($P < 0.001$). There are clinical trials currently running, about to start soon or already finished with results pending for at least the following conditions: multiple sclerosis (at least three studies), Crohn's disease (study completed), autism (two studies), fibromyalgia, pancreatic cancer and squamous cell carcinoma of the head and neck.

Case studies:

Dr. Burton M. Berkson, MD of New Mexico reported at the 2006 LDN Conference:

One of his patients, who was diagnosed with terminal and metastatic pancreatic cancer at a well-respected oncology center, was put on a healthy lifestyle program and LDN at bedtime. He is alive, well and back at work 5 years after diagnosis. Today, he is described as free of symptoms.

Another patient with greatly enlarged lymph nodes in his neck, axillae, and groin and diagnosed with a B cell lymphoma was found to be free of signs and symptoms after 6 months of LDN therapy. In his presentation, Dr. Berkson used before and after CT and Pet scans.

ONE of our case studies:

A 53 year old female (a registered nurse for 29 years) was diagnosed with stage 3 colon cancer and underwent surgery in March 2007. Chemotherapy treatment was given for the 6 months following surgery. She came in to our pharmacy 6 months after her last chemo treatment, at which time her oncologist described her as showing no active signs of disease. Her complaint: Chemo Neuropathy involving the hands, arms, legs, and especially the feet. The pain was constant and so severe that she walked with great difficulty and rarely left her home. She was also extremely fatigued because the pain was depriving her of sleep. Amitriptylline, Baclofen, and Gabapentin had all been previously tried for the neuropathy pain with no benefit. Trazadone had been tried to help her sleep, also with no benefit.

LDN therapy was started on 5-6-2008. Patient was on no other medications at that time, nor any time since starting the LDN therapy. Patient reported immediate sleep improvement, she achieved a full night of uninterrupted sleep the first night with LDN. By day three, patient was feeling well rested, was having dreams while sleeping and was completely pain free. After 10 days, patient rode her bicycle for the first time in over a year and now [after 40 days on LDN] is working out at the gym 2 times per week.

LDN can be obtained through our compounding pharmacy, Pacific Compounds Pharmacy located at 327 SE 3rd Avenue in Hillsboro. It should be given in immediate release form and special attention should be given to any fillers used. It can also be compounded in liquid and topical forms. The normal dosage range is 1.5 to 4.5mg to be taken once daily at bedtime.

REFERENCES:

- Buckley RH. *Primary Immunodeficiency Diseases Due to Defects in Lymphocytes*. N Engl J Med. 2000; 343:1313-1324.
Kukreja A, Cost G, Marker J, et al. *Multiple immuno-regulatory defects in type-1 diabetes*. J Clin Invest. 2002;109(1):131-40.

Thewissen M, Linsen L, Somers V, Geusens P, Raus J, Stinissen P. *Premature immunosenescence in rheumatoid arthritis and multiple sclerosis patients*. Ann N Y Acad Sci. Jun 2005;1051: 255-62.

Marks DJ, Harbord MW, MacAllister R, Rahman FZ, Young J, Al-Lazikani B, Lees W, Novelli M, Bloom S, Segal AW. *Defective acute inflammation in Crohn's disease: a clinical investigation*. Lancet. Feb 2006;367 (9511): 668-78.

Vernon SD, Reeves WC. *The challenge of integrating disparate high-content data: epidemiological, clinical and laboratory data collected during an in-hospital study of chronic fatigue syndrome*. Pharmacogenomics. Apr 2006;7 (3): 345-54.

Sacerdote P, Lechner O, Sidman C, et al. *Hypothalamic beta-endorphin concentrations are decreased in animals models of autoimmune disease*. J Neuroimmunol. 1999;97(1-2):129-33.

Bihari B, Drury FM, Ragone VP, et al. *Low Dose Naltrexone in the Treatment of Acquired Immune Deficiency Syndrome*. Oral Presentation at the IV International AIDS Conference, Stockholm, Jun 1988.

Low Dose Naltrexone Clinical Trials

A Randomized Placebo-Controlled, Crossover-Design Study of the Effects of Low Dose Naltrexone. (for MS) **Show** your Dr this study!

University of California, San Francisco February 2007

<http://www.ldnafricaaids.org/> \t "_blank**Jan 2008: National MS Society clinical Update on LDN**

Links to the research mentioned are available below.

<http://www.ldnafricaaids.org/> \t "_blank**Jan 2008: Low Dose Naltrexone for the Treatment of Fibromyalgia**

Stanford Medical Center. Recruiting patients that live nearby.

<http://www.ldnafricaaids.org/> \t "_blank**Pilot multi-center study of low dose naltrexone in primary progressive multiple sclerosis University of Milan.**

Results to be presented at the American Academy of Neurology April 2008.

The Mali HIV+ AIDS LDN Initiative - Dr. Jaquelyn McCandless

Penn State

Successful Trial of Low Dose Naltrexone for Crohn's Disease

Evers Multiple Sclerosis Clinic

The first trial of LDN for Multiple Sclerosis was launched 10/2004 in Germany.

Pain Therapeutics & Sourasky Medical Center

76% effectiveness of Low Dose Naltrexone for Irritable Bowel Syndrome

Met-enkephalin therapy for autoimmune diseases: Selective immunomodulation and extension of steroid therapy

This human study was done in Croatia, 1997, and found positive effects across multiple autoimmune conditions, such as "significant reduction in the number and severity of relapses". Met-enkephalin is the endorphin released by LDN.

Research Papers related to Low Dose Naltrexone

New! The Use of LDN for MS, Crohn's, and Other Autoimmune Diseases

by Elaine Moore, who has published extensively on autoimmunity.

The role of glutamate transporters in neurodegenerative diseases and potential opportunities for intervention.

Neurochem Int. 2007 Apr 19, Sheldon AL, Robinson MB.

Possible importance of antibiotics and naltrexone in neurodegenerative disease ([email](#) for copy of article)

European Journal of Neurology 2005, 12: 1, Y.P. Agrawal
(If you are interested in antibiotic treatment for MS click [here](#).)

Low dose naltrexone therapy in multiple sclerosis

Medical Hypotheses, 2005;64(4):721-4, Y.P. Agrawal

Abstract **Full-PDF**

Jan 2005: Interview with LDN researcher Dr. Agrawal (PDF)

Interviewed by Robert Lester, published by the Boston Cure Project

Dr Zagon at Penn State has a long research history with "opiod growth factor" (invoked via LDN), and human trials for [Crohn's Disease](#) and [Pancreatic Cancer](#). The National MS Society has funded an animal study he is doing to investigate LDN effects for MS.

Beta endorphin concentrations in PBMC of patients with different clinical phenotypes of multiple sclerosis.

Dr Gironi's research found lowered endorphins in MS patients. LDN raises endorphins, our own endogenous opiates, which may have a modulating effect on the immune system (see below).

Predictors of Interferon Non-Response

If you are trying to decide whether to continue Interferons or switch to LDN

Neuroimmunology References:

Experimental Evidence for Immunomodulatory Effects of Opioids

Discussion on the developing science of neuroimmunology.

Submitted by:

Rodney Goff, RPh
Pacific Compounds Pharmacy
327 SE 3rd Avenue
Hillsboro, OR 97123
503-640-3080
info@pacificcompounds.com
www.pacificcompounds.com