

## Results of the LDN Side Effects Survey

In autumn of 2020, The LDN Research Trust asked its followers to take a brief survey to report any side effects they had ever experienced with LDN. Our goal was to build an exhaustive list of potential side effects, especially since many patients interested in LDN have conditions known to cause hypersensitivity to drugs or excipients.

The survey questioned patients about their age, gender, medical conditions, time on LDN, whether they had experienced 6 common LDN side effects, and duration of any side effects. It then asked them to list any other side effects LDN may have caused.

Below are the results, but there are a few important things to keep in mind:

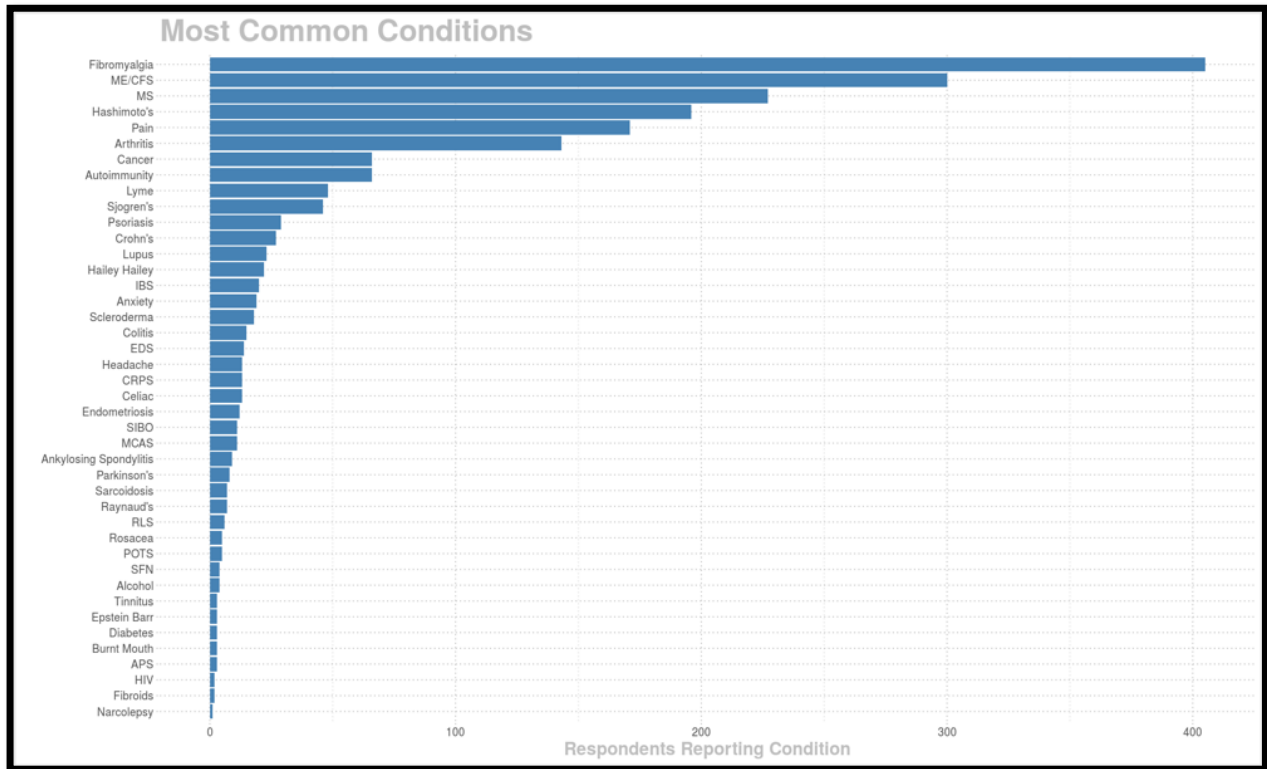
1. This was an online survey, available to anyone who wanted to participate. We don't know whether participants' responses reflect the typical experiences that most people have with LDN.
2. The prevalence of side effects reported here is different than what gets reported in drug trials, where there is a placebo control group. It is widely accepted that many side effects occur with placebo treatments, so side effects listed on drug inserts are typically those that occur above and beyond placebo levels. Since we had no placebo control, we are listing all side effects that were mentioned by more than one participant. This may greatly overstate side effects.
3. All medical conditions and "other side effects" are reported as they were listed by patients.

## Respondents

1809 participants completed the survey: 213 males and 1596 females, with a mean age of 53.9 years (standard deviation of 12.4 years) and an age range from 8 to 88 years old.

Participants listed over 40 different medical conditions for which they take LDN. The most common were fibromyalgia, ME/CFS, multiple sclerosis, Hashimoto's thyroiditis, pain, arthritis, cancer and autoimmune conditions. Participants could list more than one condition. Figure 1 displays the full list.

Figure 1. Conditions for which participants were taking LDN



Abbreviations: ME/CFS myalgic encephalopathy/chronic fatigue syndrome, MS multiple sclerosis, EDS Ehlers-Danlos Syndrome, CRPS chronic regional pain syndrome, SIBO small intestinal bacterial overgrowth, MCAS mast cell activation syndrome, RLS restless legs syndrome, POTS postural orthostatic tachycardia syndrome, SFN small fiber neuropathy, APS antiphospholipid syndrome, HIV human immunodeficiency viruses.

### Time on LDN

Participants had been on LDN for 3 days to 24 years, with a mean of 3.3 years (standard deviation of 3.6 years). Figure 2 shows the range.

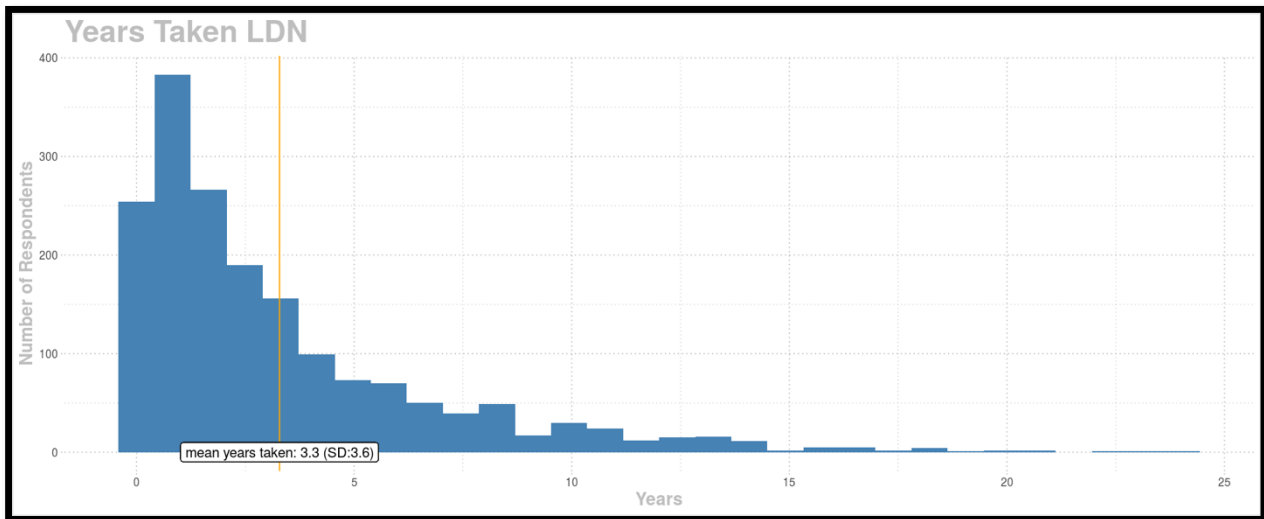
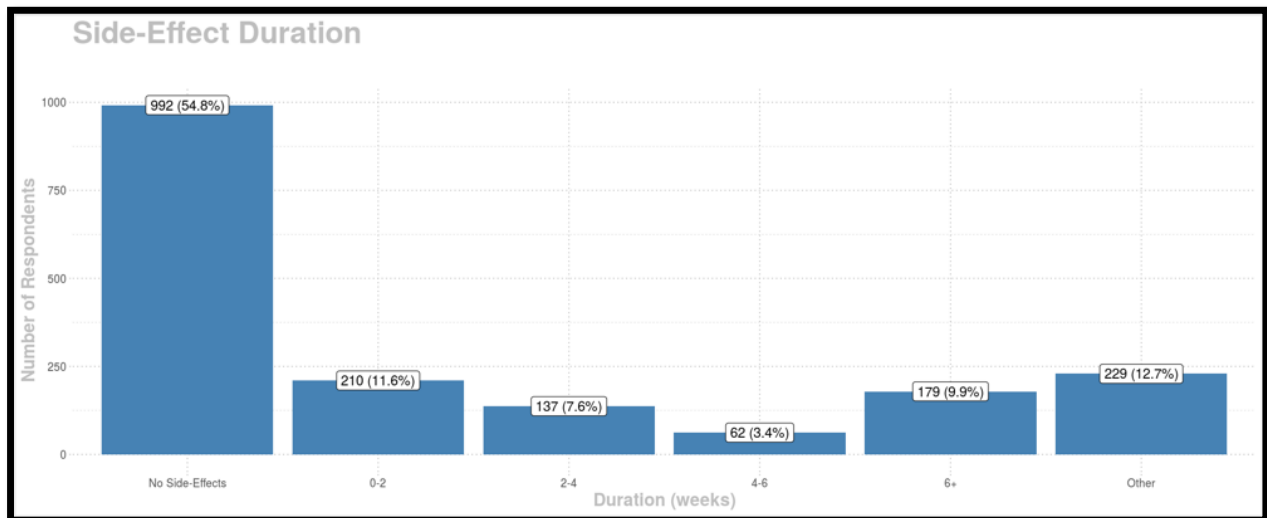


Figure 2. Length of time (in years) that participants had taken LDN

### Presence and Duration of Side Effects

Out of 1809 respondents, 992 (54.8%) had no side effects. Those who did have side effects rated how long they lasted. Figure 3 shows the duration of side effects reported by participants.

Figure 3. Duration in weeks of LDN side effects



229 participants (12.6%) reported a duration of “other” and wrote in a variety of responses such as side effects being associated with a particular formulation of LDN, increasing doses too quickly or a particular dosing schedule. Other responses included participants not remembering how long side effects lasted, reporting that side effects come and go, that side effects occur for 1-2 hours per day, or other situations.

## **Males vs Females**

As this was not a formal study, we are unable to draw conclusions about gender differences, however it is noteworthy that 47.4% of females reported side effects but only 28.2% of males reported side effects.

## **Differences Between Conditions**

Perhaps not surprisingly, conditions associated with hypersensitivities to drugs or excipients had high rates of side effects. For example 80% of patients with POTS and 82% of those with MCAS had side effects. By comparison, only 24% of those with multiple sclerosis had side effects.

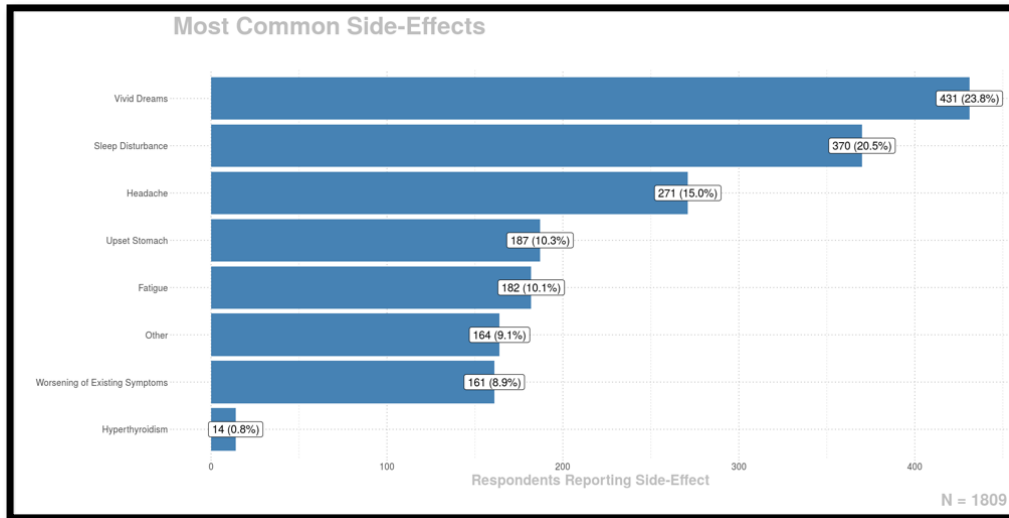
For the most common medical conditions, the percentage of patients reporting side effects were:

53% of fibromyalgia patients,  
57% of ME/CFS patients,  
24% of multiple sclerosis patients,  
44% of pain patients,  
42% of arthritis patients, and  
32% of cancer patients.

## **Most Common Side Effects**

The most common side effects were vivid dreams (experienced by 23.8%), sleep disturbance (20.5%), headache (15%), upset stomach (10.3%), fatigue (10.1), other symptoms (9.1%, with more details below), worsening of symptoms (8.9%), and hyperthyroidism (0.8%). Figure 4 shows prevalence of these symptoms.

Figure 4. Prevalence of most common side effects



“Other” side effects included a wide variety of symptoms, which are listed in Table 1, along with their prevalence. Any symptom named by 2+ respondents was included. Most side effects were negative, but several were described as positive, such as feelings of wellbeing, reduced appetite, or weight loss.

Table 1. Prevalence of other side effects

Side Effect	Number of mentions	% of respondents
Nausea	30	1.6
Anxiety	30	1.6
Dizziness or vertigo	26	1.4
Hot flashes or sweats	20	1.1
Depression	19	1.1
Constipation	15	.8
Joint pain or stiffness	11	.6
Irritability	11	.6
Dry mouth	9	.5
Diarrhea	9	.5
Pins and needles, electric feeling, or tingling in extremities	8	.4
Heart palpitations	8	.4
Reduced appetite	7	.4
Weight gain	7	.4
Brain fog	7	.4
Muscle pain or tension	6	.3
Muscle weakness	6	.3

Shaking or trembling	6	.3
Itching	6	.3
Feeling of wellbeing	5	.3
Jaw clenching	5	.3
Increased heart rate or heart racing	5	.3
Hallucinations (typically when waking at night)	5	.3
Increased appetite	4	.2
Weight loss	4	.2
Migraine	4	.2
Anger	4	.2
Flu-like symptoms	4	.2
More energy	3	.2
Dehydration	3	.2
Skin breakout	3	.2
Infection	3	.2
Ill feeling	3	.2
Sensitivity to alcohol	3	.2
Increased libido	2	.1
Head pressure	2	.1
Skin rash or hives	2	.1
Sore throat	2	.1
Increased urination	2	.1
Vomiting	2	.1
Tender breasts	2	.1
Menstrual changes	2	.1
Bladder discomfort	2	.1
Foot or leg cramps	2	.1
Shortness of breath	2	.1

### Expert Advice on Side Effects

We asked our medical advisors to comment on LDN side effects and there was agreement that although side effects are typically mild and brief, patients should work closely with their prescribing doctors, who can offer offer guidance and strategies such as:

- A) Reducing dose and/or tapering more slowly,
- B) Changing timing of dose,
- C) Switching formulas to avoid any possible allergens or triggering ingredients,
- D) Making sure that nutrition is adequate, since LDN efficacy relies on the brain producing endorphins,
- E) Taking a break from LDN for 1-2 weeks, then re-starting, to determine whether side effects might coincidentally be coming from something else, and
- F) Other individualized approaches, based on the situation.

Several advisors mentioned the importance of taking LDN very consistently, and recording symptoms before and during use, to best identify causes of any symptoms. This may be especially important for patients with complex medical situations and multiple simultaneous treatments.

We asked our advisors how long a patient should ride out any side effects before giving up on LDN and there was agreement that it depends on the severity of the side effect. One advisor noted that she asks her patients, in general, to try LDN for 3 months, while working together to address any discomfort. Other advisors reiterated that they rarely see side effects last longer than a week or two, and that each patient is treated on an individual basis.

Further information of interest may be found in our Q&A library, where our medical advisors answer questions submitted by patients and providers. If you have a question for our LDN experts, you can submit use the contact form on our website. [www.ldnresearchtrust.org](http://www.ldnresearchtrust.org)

## **Conclusion**

This informal online survey collected patients' experiences with LDN side effects. It was not a placebo-controlled study, but found that 45% of respondents experienced side effects of some kind, most of which subsided within several weeks. The most common side effects were vivid dreams, sleep disturbance, headache, upset stomach, fatigue, and worsening of symptoms. Several side effects were described as positive, such as feelings of well-being and improved energy, weight or libido. The LDN Research Trust will use these findings to guide more formal investigations into potential side effects.

## **Acknowledgments**

The LDN Research Trust would like to thank their newsletter and social media subscribers/members who took part in this survey.

Special thanks to the following FB Groups for their help and support in promoting the survey link and to their members who took part:

1. Beating Thyroid Disease with LDN
2. Danish LDN Association
3. Hailey-Hailey Disease Worldwide Support Network
4. IBD and LDN Chat Group
5. LDN DK - brugernes erfaringer
6. LDN Foreningens gruppe for medlemmer
7. LDN Norge
8. LDN Norway- Low Dose Naltrexone
9. LDN og MS, LDN og kreft,
10. Low dose Naltrexone (LDN) for chronic illness & infections
11. Lyfið LDN (Low Dose Naltrexone) á Íslandi

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