



## PATIENT MANUAL



# BrainsWay Deep Transcranial Magnetic Stimulation (Deep TMS™) System for Treatment of Major Depressive Disorder (as described in the Indications for Use statement)

This Patient Manual is a supplement to the BrainsWay Deep TMS™ System Instructions for Use.

If you are considering BrainsWay Deep TMS treatment for treatment of Depression (as described in the Indications for Use statement) you should review this patient manual and discuss the information with your doctor in order to understand more about:

- How Deep TMS Treatment works
- Who can be treated with BrainsWay Deep TMS Treatment
- Who should not be treated with BrainsWay Deep TMS Treatment
- Precautions and warnings
- Potential side effects

### Introduction to BrainsWay Deep TMS Treatment

You have been diagnosed with Major Depressive Disorder (as described in the Indications for Use statement) and your doctor has recommended treatment with the BrainsWay Deep TMS System to treat symptoms of your depression and anxiety symptoms. BrainsWay Deep TMS treatment has been shown to be safe and effective in the treatment of patients with Major Depressive Disorder (as described in the Indications for Use statement).

Your Healthcare Provider (psychiatrist or physician) will review your medical history and depression with comorbid anxiety symptoms to help determine if BrainsWay Deep TMS treatment is appropriate for you or not.

The treatment is performed under your healthcare provider's supervision. Neither anesthesia nor sedation is required. You will be awake and alert during the treatment sessions. The treatment sessions include daily treatments for a period of 4 weeks. Each treatment session lasts approximately 20-30 minutes. Your healthcare provider may consider further biweekly maintenance treatments in order to continue treating your depression.

### How Does BrainsWay Deep TMS Treatment Work?

Deep TMS stands for "Deep Transcranial Magnetic Stimulation". Deep TMS is a noninvasive procedure, involving stimulation of a part of the brain called the Left Prefrontal Cortex. The stimulation activates the nerve cells in this region of the brain and improves depressive symptoms.

The stimulation is produced by a treatment "coil" contained in a helmet. During treatment, the coil is gently positioned on the left front side of your head, over this region of the brain. Short pulses of electricity sent through the treatment coil generate magnetic fields that turn on and off very rapidly. These magnetic fields are similar to those used in magnetic resonance imaging (MRI) systems. The magnetic field goes through the head and induces a weak electrical current that briefly activates the nerve cells in this region of the brain and improves depressive symptoms.

### When Should the BrainsWay Deep TMS Treatment Be Used?

#### Indications for Use

The BrainsWay Deep TMS™ System is indicated for the treatment of depressive episodes and for decreasing anxiety symptoms for those who may exhibit comorbid anxiety symptoms in adult patients suffering from Major Depressive Disorder (MDD) and who failed to achieve satisfactory improvement from previous antidepressant medication treatment in the current episode.

### When Should the BrainsWay Deep TMS Treatment Not be Used?

Deep TMS treatment delivers a magnetic field that could cause any metal objects that are near the device to move or to get hot. Deep TMS treatment should not be used if you have metal implants in or around your head (except for standard amalgam dental fillings). Deep TMS treatment should not be used if you have implanted electronic devices in your body. These implants could cause serious injury or death if Deep TMS treatment is used. You should tell your healthcare provider if you have any metal devices or objects in your head or body in order to determine if those devices could be affected by the treatment.

### BrainsWay Deep TMS Treatment Safety Information

Safety of the BrainsWay Deep TMS System was demonstrated in a clinical study involving 233 patients with moderate to severe Major Depressive Disorder and anxiety symptoms and some with comorbid anxiety symptoms, who failed to achieve satisfactory improvement from previous antidepressant medication treatment in the current episode. The patients ranged in age from 22 to 68 years.

This section summarizes the adverse events and side effects reported in the clinical study with the BrainsWay Deep TMS System.

- There were no deaths in patients who took part in the clinical trial.
- Systemic side effects such as weight gain, dry mouth, and sexual problems were not observed.
- Tests of memory function during treatment showed no change in memory during the clinical trial.

You should discuss the warnings and precautions related to the Deep TMS treatment with your healthcare provider to determine if any precautions should be taken prior to or during your treatment with the BrainsWay Deep TMS System.

#### Seizures

There was one case of a seizure (also called convulsions) reported in the clinical study with the BrainsWay Deep TMS System. This seizure was due to high alcohol consumption the night before treatment. 3 more seizures (out of approximately 50,000 treatment sessions) were reported in other studies with the BrainsWay Deep TMS System in subjects on high doses of antidepressants, which are known to increase the risk of a seizure. None of the subjects who have experienced Deep TMS induced seizures have suffered lasting physical sequelae.

You should discuss with your doctor if you have had a seizure, or if you have a medical condition or change in a medical condition which may put you at increased risk of having a seizure, e.g., brain injury, change in medications, change in electrolyte balance, etc. Your doctor will decide if it is appropriate for you to receive BrainsWay Deep TMS treatment.

### Worsening of Depression or Suicidality

Your antidepressant medications may be tapered down prior to BrainsWay Deep TMS treatment. You may feel uncomfortable or be unable to tolerate the tapering of medications. Your depression may become worse before you begin to see an improvement in your symptoms. Increased mood lability and suicidality may also result from tapering medications. BrainsWay Deep TMS treatment may require several weeks of treatment before symptom improvement occurs.

Your doctor will monitor you for worsening depressive symptoms or signs or symptoms of suicidal behavior during the course of the treatment. You should also inform your doctor if you have any behavioral changes, such as worsening of depression, suicide attempts and ideations, increased aggressiveness, euphoria, irritability, symptoms of anxiety, or worsening of symptoms of anxiety. Your family and caregiver should also be aware that if such behavioral changes appear, they should inform the treatment administrator immediately. Your doctor will determine whether BrainsWay Deep TMS treatment should be discontinued and, if so, what other treatment options are available.

### Long-Term Safety

The long-term safety of BrainsWay Deep TMS treatment has been demonstrated in a clinical study. During the full course of 16 weeks of ongoing treatment, the treatment was safely tolerated. Furthermore, no negative effects of treatment were seen during a 3-month follow-up period. Longer term effects of exposure to Deep TMS treatment are not known. However, exposure to other devices (such as MRI scanners) with the same type and strength of magnetic fields produced by the BrainsWay Deep TMS coil are not associated with significant short-term or long-term safety concerns.

The safety and effectiveness of the BrainsWay Deep TMS System has not been established in the following patient populations or clinical conditions through a controlled clinical trial.

- Patients who have had no prior antidepressant medication failure.
- Patients who cannot tolerate withdrawal of antidepressant medications.
- Patients who are concurrently taking antidepressant medications.
- Patients who have a suicide plan or have recently attempted suicide.
- Patients who do not meet DSM IV criteria for major depressive disorder.
- Patients less than 22 years of age or older than 68 years of age.
- Patients with history of substance abuse, obsessive-compulsive disorder, or post-traumatic stress disorder.
- Patients with a psychotic disorder, including schizoaffective disorder, schizophrenic disorder, bipolar disease, or major depression with psychotic features.
- Patients with psychoses or with psychiatric emergencies where a rapid clinical response is needed, such as immediate suicide risk.
- Patients with neurological conditions that include epilepsy, cerebrovascular disease, dementia, increased intracranial pressure, having a history of repetitive or severe head trauma or with primary or secondary tumors in the CNS.
- Patients with metal in or around the head, including metal plates, aneurysm coils, cochlear implants, ocular implants, deep brain stimulation devices and stents.
- Patients with implants controlled by physiological signals, including pacemakers, implantable cardioverter defibrillators, and vagus nerve stimulators.
- Patients with major depressive disorder who have failed to receive clinical benefit from ECT or VNS.
- Patients who are pregnant or nursing.

During treatment with the Deep TMS System a loud clicking sound is emitted. Patients must use earplugs with a rating of at least 30 dB of noise reduction. There have been no reports of hearing loss with the Deep TMS Treatment in the clinical study when earplugs were used.

## Adverse Events

Table 1 below presents the adverse events reported in the clinical study in ≥5% or more of the patients who received the BrainsWay Deep TMS treatment or the sham (placebo) treatment. Safety information is provided from all patients who were treated in the clinical study.

Table 1 Adverse Events	Deep TMS Treatment (N=111 Subjects)		Sham Treatment (N=112 Subjects)		p-value
	No of Subjects	Incidence	No of Subjects	Incidence	
Headache	51	47.20%	44	36.40%	0.1079
Application Site Pain	27	25.00%	1	0.80%	<.0001
Application Site Discomfort	21	19.40%	5	4.10%	0.0003
Pain in Jaw	11	10.20%	1	0.80%	0.0017
Insomnia	8	7.40%	9	7.40%	1.0000
Muscle Twitching	7	6.50%	2	1.70%	0.0878
Anxiety	6	5.60%	9	7.40%	0.6042
Back Pain	5	4.60%	10	8.30%	0.2977

Application site pain or discomfort was reported in 25% and 29% of patients who received the BrainsWay Deep TMS treatment, and in less than 1% and 4.1% of the patients who received the sham (placebo) treatment. Pain in jaw was reported in 10.2% of patients who received the BrainsWay Deep TMS treatment, and in less than 1% of the patients who received the sham treatment. This indicates that these side effects are caused by the BrainsWay Deep TMS treatment.

You should inform the treatment administrator if you feel pain or discomfort during the treatment. The Deep TMS helmet may be slightly adjusted on your head to relieve the pain or discomfort. Pain and discomfort associated with treatment usually gets better or goes away altogether with successive treatments. Headaches were reported in 47% of patients who received the BrainsWay Deep TMS treatment, and in 36% of the patients who received the sham (placebo) treatment. This indicates that headaches were not necessarily caused by the BrainsWay Deep TMS treatment. Headaches usually get better or go away altogether with successive treatments. Headaches may also be relieved by using common over-the-counter pain medications such as acetaminophen.

Other side effects which may occur but are not necessarily caused by the BrainsWay Deep TMS treatment include muscle twitching, back pain, anxiety or insomnia.

## BrainsWay Deep TMS Treatment Effectiveness Information

The safety and effectiveness of the BrainsWay Deep TMS System for treatment of Major Depressive Disorder (as described in the Indications for Use statement) was demonstrated in a prospective, double blind, randomized, controlled, multicenter trial. The study was conducted at 20 study sites in the United States (13 sites), Israel (4 sites), Germany (2 sites) and Canada (1 site). During the initial treatment phase, TMS sessions were performed daily for 4 weeks and during the maintenance phase, subjects were treated twice a week for another 12 weeks.

The primary endpoint was the change from baseline (i.e., the starting score before treatment) in a standard scale for measuring depression symptoms, known as the Hamilton Depression Rating Scale (HDRS). The model estimated mean change from baseline in HDRS scores in the Deep TMS group across 5 weeks compared to the sham group was statistically significant. The response rate (meaning the percent of patients who had a reduction in HDRS scores of at least 50%) was significantly better in the Deep TMS group compared to the sham group. The remission rate (meaning the percent of patients who had a reduction in HDRS score to less than 10 points) was significantly better in the Deep TMS group compared to the sham group. There was a statistically significant improvement in quality of life in patients treated with the Deep TMS treatment, according to the difference in Q-LES-Q scores between the Deep TMS and sham groups. These results do not include 13% of subjects who did not receive the adequate Deep TMS treatment regimen and therefore, the effectiveness of the Deep TMS treatment was not as good in these subjects. Of these subjects receiving reduced intensity of Deep TMS treatment, some had a high Motor Threshold and therefore could not receive the adequate Deep TMS treatment regimen. Your Motor Threshold will be measured prior to the first treatment session and if it is too high, your healthcare provider will discuss with you the appropriateness of receiving Deep TMS treatment. Another few of these subjects did not receive the adequate Deep TMS treatment regimen, due to discomfort or pain during the treatment.

The efficacy of the Deep TMS Treatment was still seen at 16 weeks, based on a statistically significant change from baseline in HDRS scores ( $p=0.0259$ ) and a significantly better response rate in the Deep TMS group compared to the sham group ( $p=0.0086$ ). The efficacy of the Deep TMS Treatment, based on statistically significant differences in the CGI-S, CGI-I, PGI and GAF scores, was demonstrated at 5 weeks and also maintained at 16 weeks. No significant differences were found in the SF-36 scores, however all the SF-36 Quality of Life parameters were better in the Deep TMS group than in the sham group.

The clinical performance supporting the safety and effectiveness of the BrainsWay Deep TMS System for decreasing anxiety symptoms for those who may exhibit comorbid anxiety symptoms in adult patients suffering from MDD (as described in the Indications for Use statement) was based on 3 Randomized Controlled Trials (RCTs) and supporting data from meta-analyses from 11 clinical studies using the BrainsWay Deep TMS System in 573 patients.

The Deep TMS vs. Sham between group (adjusted) effect size for the Multicenter MDD Study (Levkovitz 2015) was 0.34 and for the Kaster 2018 study was 0.36. The effect size for the RCT that used medication as SOC, Filipic 2019, was 0.905. The weighted pooled (between group, adjusted) effect size of 0.55 (Cohen's d), representing a medium effect size of the BrainsWay Deep TMS System for decreasing anxiety symptoms in this patient population. The supportive data included two meta-analyses published by Kezior et al (including 6 of the 11 studies) and by Hung et al (including 8 of the 11 studies) reporting a pooled weighted effect size of 1.45 (Cohen's d) and -1.282 (Hedges' g), respectively. The effect sizes achieved with the BrainsWay Deep TMS treatment were also compared to the effect sizes reported for drug-based treatment of primary and secondary anxiety in the range of 0.2-0.4.

In summary, the gamut of clinical data with the BrainsWay Deep TMS System demonstrates an effect size that is consistent, robust and similar to those reported for drug-based treatments of primary and secondary anxiety. Hence, the results are clinically meaningful for decreasing anxiety symptoms for those who may exhibit comorbid anxiety symptoms in adult patients suffering from Major Depressive Disorder who failed to achieve satisfactory improvement from previous antidepressant medication treatment in the current episode.

You may ask your healthcare provider for more information regarding the clinical study.

## Summary Information

The BrainsWay Deep TMS System has been shown to be safe and effective for the treatment of depressive episodes and decreasing anxiety symptoms for those who may exhibit comorbid anxiety symptoms in adult patients suffering from Major Depressive Disorder, and who failed to achieve satisfactory improvement from previous antidepressant medication treatment in the current episode. You should discuss the treatment with your healthcare provider to ensure that BrainsWay Deep TMS treatment is the right treatment for you.

Most patients who benefit from BrainsWay Deep TMS experience improvement in their depression by the third or fourth week of treatment. Some patients may experience results in less time. BrainsWay Deep TMS Treatment should be administered daily for four weeks, followed by 12 weeks of biweekly treatment. This is the treatment schedule that has been demonstrated as safe and effective in the clinical study.

As with any antidepressant treatment, there is a risk that your depression or anxiety symptoms might worsen during BrainsWay Deep TMS treatment. Your depression symptoms might also worsen if you stopped taking antidepressant medications before starting the treatment. Inform your healthcare provider immediately if your depression or anxiety symptoms worsen.

BrainsWay Deep TMS treatment has not been evaluated to be safe and effective for patients with suicidal ideation or who have recently attempted suicide.

For more information on Deep TMS, visit BrainsWay's website at [www.brainsway.com](http://www.brainsway.com)



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