



The first drug-free,
personalized
solution for opioid
withdrawal relief.

Sparrow Therapy System

Transcutaneous Auricular Neurostimulation (tAN™)





The 800-Pound Gorilla of Withdrawal

Deciding to reduce or eliminate opioids from daily life isn't easy. Taking that first step away from opioids and toward the certainty of withdrawal can feel as if there's an 800-pound gorilla standing in your way — keeping you from the better quality of life you want.



If you fear withdrawal, you're not alone. Withdrawal is a painful barrier standing before over 11 million Americans who struggle with opioid dependence or addiction. It's such a huge roadblock that two out of every five adults who need opioid reduction or elimination simply won't seek treatment.¹

Running from Withdrawal

Many people keep taking opioids because they fear opioid withdrawal symptoms that include:

- Vomiting
- Diarrhea
- Restlessness and insomnia
- Fever-like symptoms
- Chills and sweating
- Bone pain
- Tremor
- Mood swings

But what's even more concerning is the longer you wait to reduce or eliminate opioids, the greater the risk for more serious complications, including:

- Constipation
- Depression
- Sexual dysfunction
- Pain sensitivity
- Weakened immune system
- Addiction
- Respiratory failure
- Fatal overdose





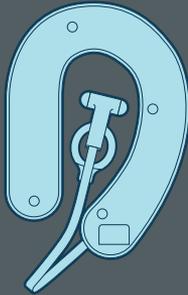
The Power to Overcome, Heal, and Achieve Is Now In Your Hands

Introducing the Sparrow Therapy System, the only FDA-cleared, wearable technology designed to deliver drug-free, personalized opioid withdrawal relief.

The Sparrow Therapy System includes a:

Set of Daily-disposable

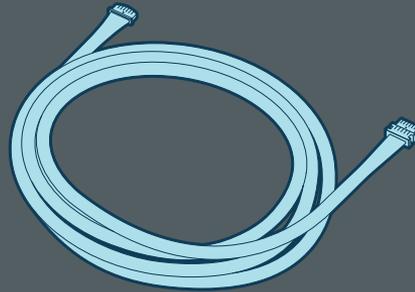
Earpieces – They deliver mild electrical stimulation to the nerves on and around the ear.



Patient Controller – It powers the earpiece and allows you to adjust the stimulation intensity to suit your personal comfort and needs.



Cable – It connects and delivers the electrical impulses from the Controller to the Earpiece.



Indication for Use

The Sparrow is a transcutaneous nerve field stimulator that is intended to be used in patients experiencing opioid withdrawal in conjunction with standard symptomatic medications and other therapies for opioid withdrawal symptoms under the supervision of trained clinical personnel. More device information, including Instructions for Use and a Quick Reference Guide, can be found at SparkBiomedical.com/Sparrow.

The Freedom to Overcome Withdrawal Your Way

The Sparrow Therapy System gives you the freedom to overcome withdrawal anytime, anywhere — at work, the grocery store, the park, or as you go about many of your daily activities. And it gives you the flexibility to personalize therapy based on your needs and comfort level.

Plus, The Sparrow Therapy System is:



Clinically Proven

- 89% of participants experienced mild or no withdrawal symptoms at 60 minutes of therapy
- Approximately one out of three clinical trial participants were symptom-free after the first day of therapy
- Ongoing symptom improvements lasting throughout the withdrawal period



Safe

- Non-invasive therapy
- Drug-free treatment option
- No systemic side effects
- No known drug interactions or adverse events



Easy

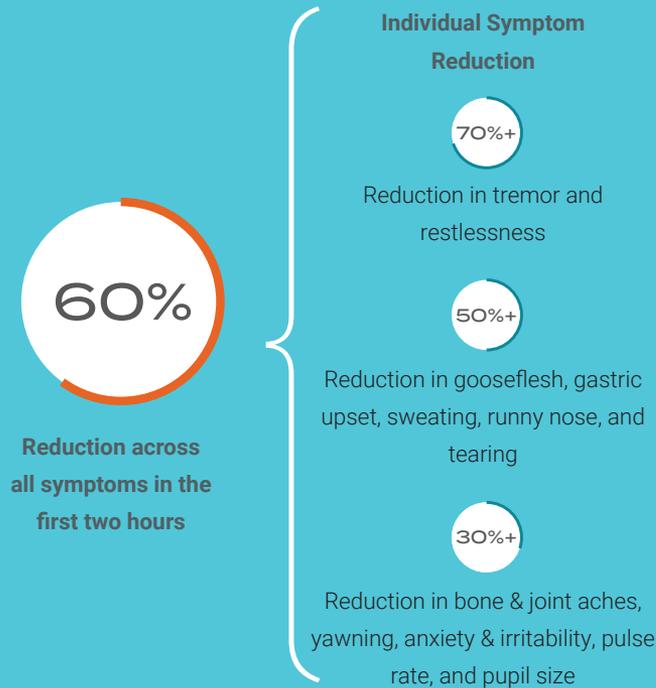
- Simple daily-disposable earpiece application
- Quick start-up & activation
- No interference with activities of daily living



Backed by Clinical Results

The Sparrow Therapy System is the first and only FDA-cleared, non-invasive neurostimulation device for opioid withdrawal backed by a clinical trial.

First Two Hours of Therapy



By Day Five of Therapy



Getting Started with Sparrow Therapy is Easy

1

Talk to Your Doctor

Discuss your interest in reducing or eliminating opioids with your doctor and share this information on the Sparrow Therapy System.

2

Discuss a Personalized Treatment Plan

Depending on your situation, you may need additional support beyond managing opioid withdrawal. Be sure to talk with your doctor and your family to ensure you have all the help you need.

3

Begin Therapy

Once your doctor prescribes the Sparrow Therapy System, you can begin overcoming withdrawal after a quick programming session. Then the power is in your hands to overcome, heal, and achieve.





How Opioids Affect The Brain



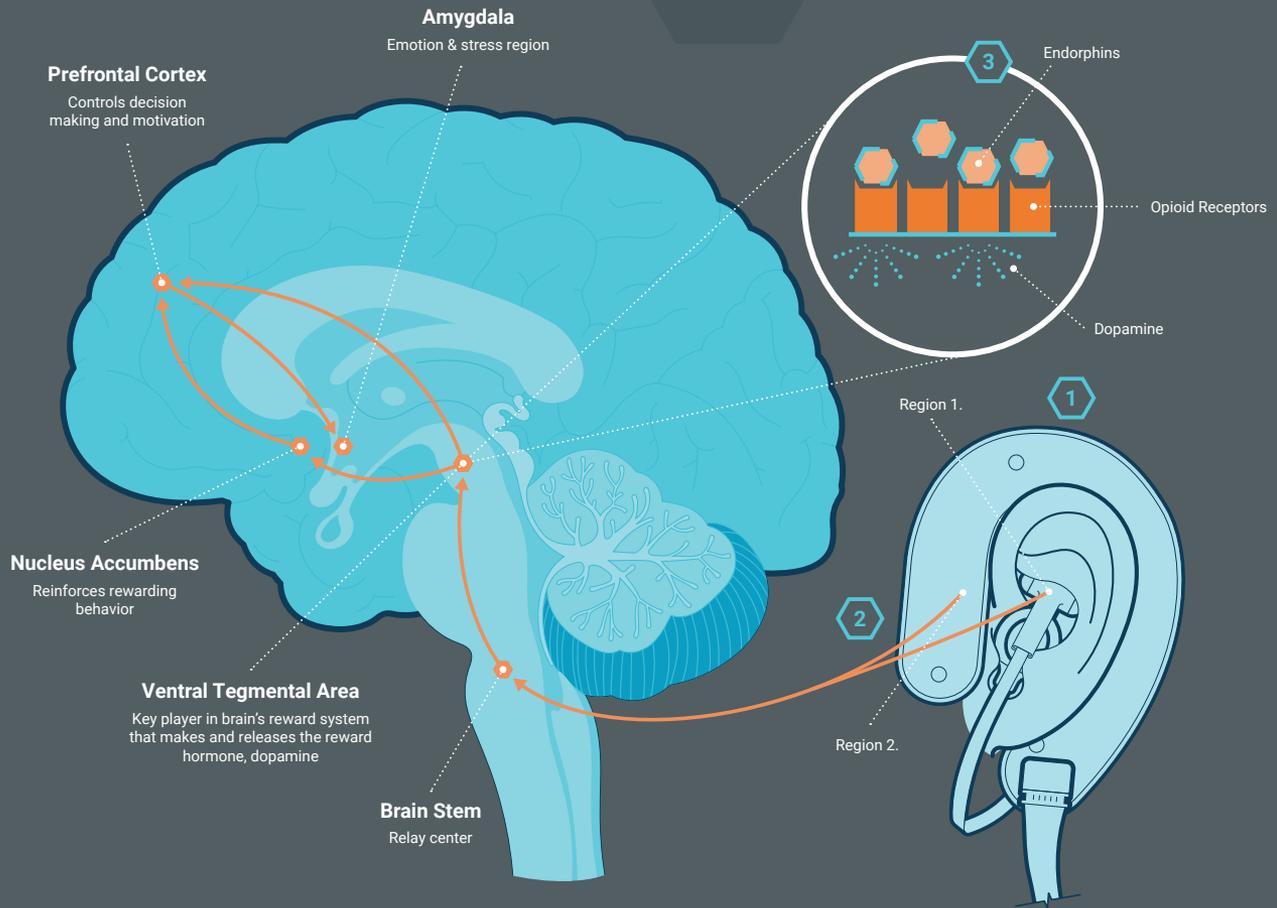
Long-term use of opioids can be dangerous. It can cause changes to the brain that affect your mood, impulse control, motivation, and feelings of reward or pleasure.

Over time, the opioid receptors in the brain change. They need more and more opioids to achieve the same effect. The opioid receptors become dependent on the drug to function correctly. If you stop taking the drug, you may become physically sick, also known as withdrawal.

How a Sparrow Tackles the 800-Pound Gorilla of Withdrawal

Fortunately, your brain can produce its own opioids, called endorphins. Endorphins are neurochemicals released in the brain that fill the opioid receptors. When the receptors are filled, a signal is sent to release another neurochemical called dopamine, which can help with pain-relief and control withdrawal.





1

The Sparrow Therapy System delivers personally tailored mild electrical signals through the skin on and around the ear — known as transcutaneous auricular neurostimulation, or tAN™.

2

The electrical signals target specific nerves which activate areas of the brain that release endorphins.

3

These endorphins then fill the empty opioid receptors. This satisfies the receptors and helps to aid in the reduction of withdrawal symptoms.



We're Dedicated to the Science

At Spark Biomedical, we want to provide an easy, safe, and effective path forward so you can overcome fear, heal from withdrawal, and achieve a better quality of life, free of opioid dependence.

We built The Sparrow Therapy System upon a solid history of neurostimulation therapy. We then applied over 150 years of our own combined neurostimulation and medical device expertise to advance the level of care through an evidence-based approach, and are committed to making ongoing investments in engineering and clinical neuroscience to advance the therapy even further – beyond opioid withdrawal.

References

¹ Substance Abuse and Mental Health Services Administration (2019). *Key substance use and mental health indicators in the United States: Results from the 2018 National Survey on Drug Use and Health (HHS Publication No. PEP19-5068, NSDUH Series H-54)*. Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>

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