The Epilepsy Foundation of Western Wisconsin & WEAU 13 cordially invite you to attend our annual Harvest Gala Dinner & Silent Auction

Tuesday, November 14 2017
5:00 to 10:00 P.M.
The Florian Gardens
Eau Claire, Wisconsin

Master of Ceremony - Bob Gallaher - WEAU 13

Guest Speaker
Green Bay NFL Quarterback
Brett Hundley

We are honored to welcome Green Bay NFL Quarterback, Brett Hundley as our speaker for the evening. He is an advocate and national ambassador with the Athletes vs. Epilepsy Initiative with the Epilepsy Foundation. His presentation is inspired to fight epilepsy and help find a cure to help his sister Paris Hundley, who has struggled with seizures since age eleven.

More about the Gala on the next page
Guest Speaker
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*All guests will receive and autographed picture of Brett Hundley.

Due to rules no autographs will be signed.

Please RSVP by October 31, 2017

Event information at www.epilepsywesternwi.org or call us at 715-834-4455, or email us at efww_info@sbcglobal.net

Thank You To Our Corporate Sponsors
We have had a beautiful summer and so far a warm and sunny Fall! Our schedule at EFWW has been very busy with events that involved individuals and families of all ages!

The community, volunteer, health, and family fairs at UW-EC, CVTC, Senior Americans Day, and the Dunn County Family Fair, kept us on the go!

We conducted many seizure recognition trainings, in daycares, group homes, county agencies, businesses and schools for students and staff! Networking is the best at the Eau Claire Chamber events and the Eau Claire Healthwatch Coalition bi-monthly meeting have had awesome speakers!

The” Lemonade for Livy” campaign was an incredible experience. We are thankful to Shopko who was the major sponsor throughout the country for Epilepsy Foundations to conduct this great fundraiser for four weeks. We thank the many volunteers in 7 Shopko Stores in Western Wisconsin who hosted many hours running Lemonade Stands gave many hours hosting Lemonade stands on a Saturday in June! We enjoy the annual “Rib-fest” hosted by Jason and Theresa Curtis, at their home with great food, and silent auction which is benefited by the Epilepsy Foundation of Western Wisconsin! We are thankful to the many volunteers who worked long, hot, hours for three days at Country Jam 2017, all to benefit EFWW!

We had a great times with members of the AWESOME GROUP, who loved music and a picnic at Owen Park, dinner at Grizzly’s and The Public House! The group had the best time ever for a beautiful fall weekend at the Adult Retreat at the Wisconsin Lion’s Camp for everything from pontoon rides, hayrides, paddle boats, great food, kickball, archery ,poetry walk, with wonderful friends and of course the DANCE!

Summertime fun was the best the week of in August at “Camp Phoenix” in Rosholt, Wisconsin, at the Wisconsin Lion’s Camp! There were over 25 of our kids ages 8-17 from the state of Wisconsin along with kids who have visual & hearing impairments, epilepsy, and cognitive disabilities. Thursday night’s dance which is always the most fun! The kids loved all the water activities, sailing, paddle boats, pontoon rides, fishing, swimming, canoeing , Archery , campouts, climbing wall, high and low ropes, zip-line, biking, mud-pit, music time, and making the best crafts ever this year!! The cookout and awards presentation were as always a thrill for everyone!!!! The kids always have huge appetites and found that this camp has the best food ever! We had a terrific Studio E Project, and the best moments are spent with old and new friends and having a great week filled with laughter, joy, smiles, and unforgettable memories!!! This incredible week creates normal, carefree fun! !

Register by October 31st for our exciting upcoming “Harvest Gala Dinner and Silent Auction” at The Florian Gardens on Tuesday, November 14th, 2017! You will not want to miss our Honorable Speaker NFL Green Bay Quarterback Brett Hundley who is an advocate for his sister who has epilepsy. Thank you for your continued support!

Lou Kelsey,
Director of Client Services & Community Resources

Camp Phoenix Campers

Adult Retreat
Epilepsy and Natural Treatments: Can They Help?

http://thesportcoach.com/?p=17574
Reviewed by Debra Rose Wilson, PhD, MSN, RN, IBCLC, AHN-BC, CHT

Epilepsy is a disease that disrupts the electrical activity of the nervous system, causing seizures. More than 65 million people in the world have epilepsy. The Epilepsy Foundation estimate that 1 in 26 Americans will develop the disease during their lives. Children are the group most frequently diagnosed with new cases of epilepsy. In the United States, 300,000 children under 14 are affected by the condition. Some may outgrow the disorder, but most will not. The number of senior citizens with epilepsy is also 300,000.

People with epilepsy have a range of treatment options, including alternative therapies. The illness is a complex condition, however, and all alternative treatment options must be looked at carefully, to ensure they are effective. It is essential to work with a doctor when making changes in treatment, as every epileptic seizure can cause brain damage, and the effects build up. So, any treatment must work to avoid seizures.

Eight Natural Remedies for Epilepsy

People with epilepsy and their doctors are expressing growing interest in alternative therapies. Although antiepileptic drugs (AEDs) help most people control their symptoms, these do not work for everyone. Furthermore, some people are concerned about the long-term safety of these drugs. Complementary health practices for epilepsy, such as the eight natural remedies discussed here, are designed for use in combination with AEDs. After talking to a doctor, and before beginning natural treatments, people with epilepsy should ensure they are working with a well-qualified and informed therapist.

Common complementary treatments for epilepsy include the following:

**Medical marijuana**
*Cannabis sativa*, or marijuana, as it is commonly known, has been used to treat convulsions for centuries. Today, it is attracting increasing attention from people with epilepsy, clinicians, and researchers. Interest in the use of medical marijuana is particularly strong for the roughly 1 million U.S. residents whose seizures are not controlled by AEDs. Some families with young children, suffering from severe seizures, have moved to one of the 22 states where medical marijuana use is legal. Charlotte's Web is a strain of cannabis bred to contain high levels of CBD, a part of the plant showing promise against seizures. It is named after a child whose convulsions dropped from more than 300 a week to 2-3 a month with this treatment. However, since broad-based, well-designed scientific studies have yet to prove the effectiveness of marijuana in treating epilepsy, doctors do not generally recommend its use.

**Diet**
The ketogenic diet is a low-carbohydrate, high-fat diet that may help to reduce seizures. Diet is one of the earliest forms of treatment for epilepsy and is used with contemporary variations to make it easier for children and adults to adopt. The ketogenic diet is a high-fat, low-carbohydrate diet that has had some success in reducing seizures in children who cannot tolerate or benefit from AEDs. It requires extensive commitment and monitoring. The Atkins diet is a high-protein, low-carbohydrate diet that is less restrictive and has shown positive effects. Low glycemic index treatment (LGIT) is similar but allows for a targeted level of carbohydrate consumption.

**Herbal treatments**
Herbs are used for many illnesses by 80 percent of the world's population. Remedies drawing on Chinese traditions have shown promise in treating epilepsy. Some herbs, such as chamomile, passionflower, and valerian, may make AEDs more effective and calming. However, ginkgo, ginseng, and stimulating herbs containing caffeine and ephedrine can make seizures worse. St. John's wort can interfere with medications and make seizures more likely, similarly to evening primrose and borage. Caution is advised when working with all these herbs. It is important to remember that herbs are not monitored by the U.S. Food and Drug Administration (FDA). If any herbs are used, they should be researched and bought from reputable sources.

**Vitamins**
Low levels of the B6 vitamin have been known to trigger seizures. Magnesium, vitamin E, and other vitamins and nutritional supplements, have been identified as either promising or problematic for treating epilepsy. People taking AEDs are often advised to take vitamin D supplements to keep their systems in balance. Along with vitamin B6, magnesium, and vitamin E, which have been found to be helpful in treating epilepsy, doctors have found treatment with manganese and taurine reduced seizures, as well. Thiamine may help improve the ability to think in people with epilepsy.

**Biofeedback**
When AEDs do not work, some people have successfully used biofeedback to reduce seizures. With the use of extensive training and a machine that detects electrical activity in the brain, the technique teaches individuals to recognize the warning signs of seizures, and train their brains to prevent a full-blown attack.
Relaxation
Stress and anxiety are both linked to seizures. There are many different practices that people with epilepsy can follow on their own to help them feel calmer, relax their muscles, get better sleep, and enjoy a better state of mind. All these actions taken together can help reduce seizures and make it easier for people to manage their epilepsy. People should be cautious if trying meditation, as this can change the electrical signals in the brain. Some essential oils used in aromatherapy, such as lavender, chamomile, jasmine, and ylang-ylang, have been found to be effective in preventing seizures when used with relaxation techniques. However, the Epilepsy Society report that others may provoke seizures. These include spike lavender, eucalyptus, camphor, sage, rosemary, hyssop, and fennel.

Acupuncture and chiropractic
Acupuncture may help to reduce the stress of living with epilepsy. While acupuncture does not seem to be helpful in preventing seizures, people with epilepsy find it can reduce the stress of living with the condition. There is little evidence on chiropractic care, but it also may be among the natural treatments people with epilepsy find useful.

Education and avoiding triggers
Education and avoidance can have a big impact on quality of life for people with this condition. Many of those with epilepsy find that their seizures develop in response to specific triggers. This is the case for people with photosensitive epilepsy. Learning how to avoid situations and stimuli that could spark a seizure can be very helpful. Some children may learn to avoid using video games in dark rooms, for example, or to cover one eye when exposed to flashing lights.

Do Natural Treatments for Epilepsy Work?
For many practices, there has not been enough study to give a definite answer to this question, one way or the other. The following overview of the top natural treatments for epilepsy offers a quick summary of their reported effectiveness:

Diet: The ketogenic diet, usually prescribed for children whose epilepsy does not respond to AEDs, has been shown to cut their seizures by half and eliminate seizures completely for 10-15 percent of those studied.

Herbal treatments: Two studies of Chinese herbal compounds found them effective at reducing seizures in children and adults. But some herbs, such as St. John's wort, can make seizures worse.

Vitamins: Many studies have linked low levels of vitamin B6, magnesium, and vitamin E to seizures. Treating people with supplemental doses helped reduce the frequency of seizures.

Biofeedback: Researchers in 10 different studies showed that 74 percent of people whose epilepsy could not be treated with medication, reported fewer seizures after they learned this technique.

Relaxation: Fewer seizures and a better quality of life were reported by children who took part in trials, according to research.

Acupuncture and chiropractic: Scientific studies have not found acupuncture to be effective for people with epilepsy. However, positive outcomes were reported for some children with drug-resistant epilepsy who tried chiropractic therapy.

Education: After learning more about epilepsy, coping strategies for it, and how to take medication, improved quality of life was observed for people of all ages with epilepsy.

Conclusion
Many reports on the effectiveness of complementary treatments for epilepsy come from personal experience, and from studies that are not considered conclusive. Most importantly, people should always talk to their doctor before trying natural treatments to help ease their symptoms.

The Epilepsy Foundation of Western Wisconsin leads the fight to overcome the challenges of living with epilepsy and to accelerate therapies to stop seizures, find cures, and save lives.
Hello Everyone,

First of all I would like to announce that Art Taggart the Executive Director of the Epilepsy Foundation Heart of Wisconsin will be retiring after 26 years of service to the epilepsy community. Also, with 28 years serving the epilepsy community Ann Hubbard, Client Service Director from the Stevens Point office will also be retiring. Both of these individuals have worked tirelessly to help those with epilepsy and bring a change for the better. We here at Western Wisconsin wish them a happy retirement.

We have had quite a year so far here. The Epilepsy Foundation of Western Wisconsin saw our greatest Stroll in the Park to date with over 700 walkers and the largest ever funds raised to help our clients. We have had more trainings so far this year then the last two years combined! We have been involved in several community fairs such as Kids Expo, Dunn county Community Picnic, WITC health fairs in Rice Lake and New Richmond, as well as other community events. We were at Country Jam checking IDs, Had “Lemonade for Livy” at every Shopko in our service area, and had a great time at “Rib Fest” put on by two of our Board members. Kids Camp and the Adult Retreat provided wonderful experiences for our clients, young and old. The Harvest Gala was an outstanding success! We were absolutely honored to have Chanda Gunn as our speaker, and she gave a great speech during dinner, as well as talked to several girl hockey clubs the evening before. Our reach into the communities we serve was strengthened even further through the wonderful support of the local media outlets. Their messages reached far and wide, often bringing new clients our way.

The big news is that we will have a lot going on in the next few weeks here at the foundation. We will have our Harvest Gala on November 14, at The Florian Gardens. Our guest speaker this year is Green Bay NFL Quarterback Brett Hundley!! We are very excited to welcome Brett and his wife to Eau Claire, and I am really looking forward to hear him talk about his sister Paris who was diagnosed with epilepsy at age eleven. Brett will make himself available for a handshake and a quick selfie before supper begins. Unfortunately, due to rules Brett is unable to sign a personal autograph but everyone will receive a autographed picture of him during the evening. He will speak, and there will be time for a few questions and answers before he has to go to the airport to get back to Green Bay for practice the next morning.

So, as you can see we keep very busy here at the foundation with our outside education projects. What I haven’t mentioned is the number of clients who we have helped. Some of our clients are brief encounters, and then we have others that we have helped for years and continue to help. For Lou and I it is not easy at times, but we wouldn’t have it any other way. We enjoy our work, the clients, and meeting all of you. Of course, we couldn’t do it with all your help so thank you for all you do.

Rick

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**I WANT TO HELP PEOPLE WITH EPILEPSY IN MY COMMUNITY!**

Enclosed is a Donation for vital programs of advocacy, support, and education

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Thank you ~ EFWW STAFF
Minimizing Risk from Flashing Lights

Epilepsy Society has reminded people whose seizures are triggered by flashing lights to take extra care as the winter season of parties and celebrations begins. The last quarter of the calendar year is crammed full of public celebrations including Halloween, Thanksgiving, Christmas and New Year's Eve. For anyone with photosensitive epilepsy, this can pose additional risk factors with flashing lights being very much part of the festive scene. Epilepsy Society’s consultant neurologist Dr Fergus Rugg-Gunn said: ‘Photosensitive epilepsy is relatively rare affecting up to five per cent of people with epilepsy, but it can be very debilitating. ‘Flashing lights have become very much part of our culture but if the lights are flashing at between 3 and 30 flashes per second, they could potentially cause a problem for someone who is photosensitive. Most festive lights flash at around one hertz (one flash per second) which is too low to pose a risk, but several circuits flashing together could increase the risk rate.

Strobe Lighting

‘Many public venues such as theatres and concert halls are very much aware of this and are careful to ensure any lighting effects are within the safety guidelines. The Health and Safety Executive recommends that strobe lighting in clubs flashes at a maximum of four flashes per second. 'But there are always cases of Christmas trees or other displays which do not comply and which may trigger a seizure.' Other factors which may increase the risk of a seizure in those with photosensitivity include: tiredness, stress, sitting too close to a tv or computer screen, light and dark patterns moving quickly or changing directions and watching a screen in a darkened room. If someone is unexpectedly exposed to a trigger, covering one eye completely with their hand will help to reduce the photosensitive effect.

About Photosensitive Epilepsy

- 1 in 20 people with epilepsy has photosensitive epilepsy
- Photosensitive epilepsy first came to prominence in the 1950s and was known as television epilepsy but is more than a modern phenomenon
- Flashing lights between the frequencies of 3 and 30 hertz (flashes per second) are most likely to trigger a seizure in 60% of people with photosensitive epilepsy, but some may be sensitive outside this range
- Photosensitivity can also be hereditary. If a woman has photosensitive epilepsy, her children have a 25% chance of developing it

Epilepsy

* More Common than You Think

* Epilepsy is the fourth most common neurological disorder in the United States after Alzheimer’s disease, migraines, and stroke.
* It is equal in prevalence to cerebral palsy, multiple sclerosis and Parkinson’s disease combined.
* Epilepsy is not a single entity but a family of more than 40 syndromes that affect 2,800,000 people in the U. S. and 65,000,000 worldwide.
* Epilepsy strikes most often among the very young and the very old, although anyone can get it at any age. In the U.S., it currently affects more than 326,000 children under age fifteen and more than 90,000 of them have severe seizures that cannot be adequately treated.
* The number of cases in the elderly is beginning to soar as the baby boom generation approaches retirement age. Currently more than 570,000 adults aged 65 and above in the U.S. have the condition.
* Epilepsy and its treatment produce a health related quality of life – measured in days of activity limitation, pain, depression, anxiety, reduced vitality, and insufficient sleep or rest – similar to arthritis, heart problems, diabetes, and cancer.
* Thirty percent of people with epilepsy are severely affected and continue to have seizures despite treatment.
* Of major chronic medical conditions, epilepsy is among the least understood even though one in three adults knows someone with the disorder.
* Lack of knowledge about proper seizure first aid exposes affected individuals to injury from unnecessary restraint and from objects needlessly forced into the mouth.
* The leading non-medical problem confronting people with epilepsy is discrimination in education, employment and social acceptance.
Local Epileptic Seizure Shows Long Distance Interaction


An epileptic seizure may be highly local, but it also influences brain activity at a distance of over ten centimeters from the core. This, in turn, affects the active area, scientists of the University of Twente and the University of Chicago show in the Proceedings of the National Academy of Sciences (PNAS).

The area in which an epileptic seizure starts in the brain, may be small but it reaches other parts of the brain at distances of over 10 centimeters. That distant activity, in turn, influences the epileptic core, according to mathematicians and neurologists of the University of Twente and the University of Chicago. The researchers describe these cross-connections in their paper in the Proceedings of the National Academy of Sciences (PNAS). When a patient has a large, generalized epileptic seizure, often causing loss of consciousness, a large part of the brain is involved. But even in partial or 'focal' seizures, the activity isn't limited to the small area. A patient can suddenly have difficulties speaking, show sudden movements or seem absent. The active area then is in the language centre or close to it, or in the motor cortex. As is shown now, even in these specific cases, a large part of the neocortex, the top layer of brain, is involved. Advanced models of neuronal networks, together with patient data, confirm this.

The neurons at the edge of the epileptic core fire in a violent way, as expected. This effect, however, could stay local, but in the sub millimeter range, the activity starts spreading. A wave front is growing, of very active neurons. The mechanism of inhibition, by which the surrounding neurons should stop further spreading, clearly fails. While the core of the seizure shows neurons firing at high frequencies, low frequency (6 Herzd) waves can be detected at a further distance in the neocortex. For the first time, mathematical models show that these two types of brain activity correlate. There are two areas that show interaction: the focal epileptic core causes activity at a distance in the neocortex, while the wave returning to the core, effects the firing in itself. What remains unclear is how the seizure stops, but the cross-scale interaction could well play a role in this.

In order to 'feed' their mathematical models with real life data, the researchers could use existing patient data gathered by the Columbia University Medical Center. There, a temporary implant was used for measuring local epileptic activity. This so-called 'Utah array', of 4 by 4 mm, consists of 96 microelectrodes. Using this, the activity of small groups of neurons can be detected. In addition, activity on the centimeter scale was measured using an Electrocorticogram (ECoG). Other than an EEG, that measures through the skull, an ECoG is placed directly on the brain surface. These techniques are at the basis of epilepsy surgery, for localizing the area that is responsible for seizures and possibly remove it by surgery.

At the University of Twente, the research was done by the Nonlinear Analysis group of Prof Stephan van Gils and the Clinical Neurophysiology group of Prof Michel van Putten, who is a neurologist at the Medisch Spectrum Twente hospital in Enschede as well. The paper 'The cross-scale effects of neural interactions during human neocortical seizure activity' by Tahra Eissa, Koen Dijkstra, Christoph Brune, Ronald Emerson, Michel van Putten, Robert Goodman, Guy McKhann, Catherine Schevon, Wim van Drongelen and Stephan van Gils, appears in the Proceedings of the National Academy of Sciences of the USA (PNAS).

Epilepsy News

On August 10th the Centers for Disease Control and Prevention is released a Morbidity and Mortality Weekly Report revealing that the number of adults and children living with epilepsy is at an all-time high. The report shows epilepsy is widespread. At least 3.4 million people in the United States live with active seizures, including 470,000 children. It also for the first time has individual state-by-state prevalence results.

This report confirms what many in our community have suspected: Epilepsy has been under-reported. We are very grateful that we have a public health program at the CDC for epilepsy. Their new data strengthens our resolve. We fight every day to improve the lives of millions of people who have epilepsy. Seizures diminish and steal lives. We won’t rest until this ends.
If you are interested in scheduling a training for your school or workplace, please call EFWW at 715-834-4455 or 800-924-2105.

**Schedule a Seizure Recognition & First Aid Training for your School or Workplace today!**

The Seizure Recognition & First Aid training program is a comprehensive instruction session about epilepsy, seizures, and appropriate first aid responses. This training defines epilepsy and what seizures can look like. Donations are greatly appreciated.

**Participants will be able to:**
- Recognize what seizures can look like
- Appropriately respond to seizures in three areas of first aid
- Know when to call for emergency assistance
- Understand their role as responder or observer

If you are interested in scheduling a training for your school or workplace, please call EFWW at 715-834-4455 or 800-924-2105.

**EPILEPSY FOUNDATION TRAININGS**

**School Nurses**

Managing Students with Seizures is a continuing education training program designed to provide the school nurse with information, strategies and resources that will enable him/her to better manage the student with seizures by supporting positive treatment outcomes, maximizing educational and developmental opportunities, and ensuring a safe and supportive environment. Nurses can earn 3.2 continuing education credits for free through the Centers for Disease Control and Prevention (CDC) through in person or online trainings.

**School Personnel**

Classroom teachers, special education teachers, librarians, teacher assistants, school bus drivers, aides, and other staff members or volunteers in grades K-12 can all benefit and can receive continuing education units.

**Child Care Personnel**

Through this program we hope to dispel myths and reduce the perceived stigma associated with epilepsy within young children.

Visit our website: [www.epilepsywesternwi.org](http://www.epilepsywesternwi.org) or visit us Facebook

**EPILEPSY FOUNDATION**

1812 Brackett Avenue, Suite 5    (715) 834-4455
Eau Claire, Wisconsin 54701    (800) 924-2105

If you know of someone who would benefit from *Wave Length*, please email EFWW at efww_info@sbcglobal.net
If you no longer wish to receive *Wave Length*, send an email request to efww_info@sbcglobal.net.

* Tentative Dates
What is the Vagus Nerve?

The vagus nerve is the longest and most complex of the 12 pairs of cranial nerves that emanate from the brain. It transmits information to or from the surface of the brain to tissues and organs elsewhere in the body. The name "vagus" comes from the Latin term for "wandering." This is because the vagus nerve wanders from the brain into organs in the neck, chest, and abdomen. It is also known as the 10th cranial nerve or cranial nerve X.

What is the Vagus Nerve?

The vagus nerve is one of the cranial nerves that connect the brain to the body. The vagus nerve has two bunches of sensory nerve cell bodies, and it connects the brainstem to the body. It allows the brain to monitor and receive information about several of the body's different functions. There are multiple nervous system functions provided by the vagus nerve and its related parts. The vagus nerve functions contribute to the autonomic nervous system, which consists of the parasympathetic and sympathetic parts. The nerve is responsible for certain sensory activities and motor information for movement within the body. Essentially, it is part of a circuit that links the neck, heart, lungs, and the abdomen to the brain.

What Does the Vagus Nerve Affect?

The vagus nerve has a number of different functions. The four key functions of the vagus nerve are:

- **Sensory**: From the throat, heart, lungs, and abdomen.
- **Special sensory**: Provides taste sensation behind the tongue.
- **Motor**: Provides movement functions for the muscles in the neck responsible for swallowing and speech.
- **Parasympathetic**: Responsible for the digestive tract, respiration, and heart rate functioning.

Its functions can be broken down even further into seven categories. One of these is balancing the nervous system. The nervous system can be divided into two areas: sympathetic and parasympathetic. The sympathetic side increases alertness, energy, blood pressure, heart rate, and breathing rate. The parasympathetic side, which the vagus nerve is heavily involved in, decreases alertness, blood pressure, and heart rate, and helps with calmness, relaxation, and digestion. As a result, the vagus nerve also helps with defecation, urination, and sexual arousal. Other vagus nerve effects include:

- **Communication between the brain and the gut**: The vagus nerve delivers information from the gut to the brain.
- **Relaxation with deep breathing**: The vagus nerve communicates with the diaphragm. With deep breaths, a person feels more relaxed.
- **Decreasing inflammation**: The vagus nerve sends an anti-inflammatory signal to other parts of the body.
- **Lowering the heart rate and blood pressure**: If the vagus nerve is overactive, it can lead to the heart being unable to pump enough blood around the body. In some cases, excessive vagus nerve activity can cause loss of consciousness and organ damage.

**Fear management**: The vagus nerve sends information from the gut to the brain, which is linked to dealing with stress, anxiety, and fear - hence the saying, "gut feeling." These signals help a person to recover from stressful and scary situations.

Vagus Nerve Stimulation

Stimulation of the vagus nerve is a medical procedure that is used to try to treat a variety of conditions. It can be done either manually or through electrical pulses. The effectiveness of vagus nerve stimulation has been tested through clinical trials. Consequently, the United States Food and Drug Administration (FDA) has approved its use to treat two different conditions.

**Epilepsy**

In 1997, the FDA allowed the use of vagus nerve stimulation for refractory epilepsy. This involves a small, electrical device, similar to a pacemaker, being placed in a person's chest. A thin wire known as a lead runs from the device to the vagus nerve. The device is placed in the body by surgery under general anesthetic. It then sends electrical impulses at regular intervals, throughout the day, to the brain via the vagus nerve to reduce the severity, or even stop, seizures. Vagus nerve stimulation for epilepsy may have some side effects including sore throat and difficulty swallowing.

Side effects of vagus nerve stimulation for epilepsy include: hoarseness or changes in voice, sore throat, shortness of breath, coughing, slow heart rate, difficulty swallowing, stomach discomfort or nausea. People using this form of treatment should always tell their doctor if they are having any problems as there may be ways to reduce or stop these.