Epilepsy and Technology

LIVE IT! YOUTH TRANSITION PROGRAM

EPILEPSY FOUNDATION TEXAS AND EPILEPSY FOUNDATION CENTRAL AND SOUTH TEXAS
Sam's Law (HB 684), was introduced by Rep. Travis Clardy January 8, 2019

This bill would require all Texas public school personnel be trained in seizure recognition and seizure first aid

Please contact your state representatives and let them know you support HB 684 and they should, too

Go to www.samslaw.org to learn more

Follow EFTX, EFCST, and Purple Warriors of Texas on Facebook and Twitter to get updates on the progress of HB 684
Electronic Health Monitoring

Revolutionizing health care and our lives

Health information can now be recorded and monitored electronically using many different types of personal devices

Streamlines maintaining health care needs

Easy access to medical history
Benefits of Seizure Technology

Allows user to keep track of neurological health information

- Detecting and recording seizures
- Keeping records of triggers
- Tracking medication adherence

Detects when a person is having a seizure by measuring movement and other changes in the body or brain

Alerts someone when a seizure happens

Health information can be shared with medical professionals

Opportunity to increase the safety of the user
Expense

General

Product

Wearable and/or monitoring device

Monthly subscription

Smartphone

Financial Support

Danny Did Foundation

Josh Provides Epilepsy Awareness Foundation

Contact device makers
Examples of Seizure Technology
The Embrace product is designed to detect and alert for tonic-clonic seizures, and to monitor physical activity and rest.

The user must have a compatible smartphone, which they must keep within approximately 25 feet.

This system received FDA approval in 2018 for its ability to alert to convulsive seizures.

Embrace website
SeizAlarm is an iPhone and Apple Watch app which allows contacts of the app user to be automatically alerted when seizure-like motion is detected.

User can manually-deliver an alert if they need immediate help.

If using the app through the Apple Watch, the user also has the feature of heart rate based detection.

The alert notification includes the GPS location of the user.

SeizAlarm website
The SmartWatch Inspyre™ by Smart Monitor is designed to be used on a Samsung or Apple Watch to detect repetitive shaking motion.

When the Inspyre detects abnormal motion, it sends out text and phone call alerts to whomever the user designates.

Users can also summon help with the push of a button.

Reports of each event can be accessed for later review with physicians.

Coming soon! Capability to record heart rate data.

[SmartWatch Inspyre website]
SAMi is a sleep activity monitor for caregivers and individuals who need to watch for abnormal movements at night.

During sleep, audio-video information from a remote infrared video camera is sent to an app running on an iOS device such as an iPhone or iPod Touch.

When an unusual event is detected, an alarm is sounded, followed by live sound and video from the SAMi network camera.

[Sam-Alert website](#)
The Emfit Movement Monitor is an intelligent bed monitor that continuously monitors movements and alerts upon the onset of repetitive muscle spasms.

The Emfit Movement Monitor consists of two main components: a flexible and durable bed sensor placed under the mattress and a bed-side monitor with sophisticated embedded software.

The Movement Monitor detects when a person has continuous faster movements over a pre-set amount of time and then triggers a notification.

The system also notices light movements, thus making it equally suitable for small children.

[Emfit website]
PulseGuard is a monitoring system designed to detect seizures associated with a rise or fall in a heart rate.

The PulseGuard system consists of two components: a wrist or ankle worn sensor housed within a strap, which communicates via Bluetooth with the PulseGuard tablet (a specially modified Apple iPad).

If heart rate drops below the lowest perimeter that has been set, this product is meant to send an alarm through the iPad.

PulseGuard website
SeizureLink System Overview

For Epilepsy Foundation South & Central Texas and Epilepsy Foundation of Texas

January 12, 2019
SeizureLink System Overview

- **Muscle, Not Motion: The Only Muscle-Activated Alerting System**
  - Algorithm alerts to prolonged tonic muscle activation/contraction*
  - Alerts via phone calls, app, and phone notifications
  - Wearer can have up to 10 caregivers
  - Caregiver can have up to 4 wearers

- **Fast**
  - The fastest consumer alerting system available: Alerts in 9 seconds

- **Accurate**
  - Low false alarm rate: 0.67 per day, 1 per 82 nights
  - 94% Accuracy Rate

- **Other benefits like**
  - Integrated seizure diary with PDF exports
  - Easy battery changes: 24 hour rechargeable battery can be changed while still on the biceps
  - “Call for help” button
  - App and alerts included with product cost

*The SeizureLink™ System monitors for muscle activation and it is not a medical device, nor is it cleared by the FDA for medical device application. It is not cleared to monitor, treat, diagnose, or prevent a medical condition, nor is it intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease. Use of SeizureLink is not a substitute for professional medical advice concerning your condition or medical treatment for you. Please consult your physician or your healthcare provider to ask questions, discuss your condition, and the options for you. The System is not a substitute for proper supervision, inspection or observation of the wearer. Always assure the wearer of the System has proper supervision. In order for the SeizureLink unit to alert and connect with wearers, caregivers, and other designated individuals (“Alertees”); Alertees must assure that the SeizureLink unit is charged appropriately, is Bluetooth connected to the wearer's mobile device, caregiver's or other designated individual’s mobile device, and is connected to a cellular network. The SeizureLink unit alerts only when the device is properly placed on the biceps muscle and is connected as communicated above and in accordance with the procedures outlined in the SeizureLink User Manual. Alertees should take caution that during a storm, an Act of God, or other event that is outside the control of Brain Sentinel, Alertees should check their connections periodically to assure the connection is established between the SeizureLink unit and their mobile device(s). If the unit is not connected properly, Alertees should not expect the SeizureLink unit to alarm during muscle activation. Beniczky, Sándor, et al. “Automated Real-Time Detection of Tonic Clonic Seizures Using a Wearable EMG Device.” Neurology, vol. 90, no. 5, May 2018.*
Prospective Study Results

- **Prospective comparison to vEEG**
  - Denmark & Norway
  - 71 Subjects, 3735.5 hours

- **Study Results**
  - Sensitivity: 93.8% (30 out of 32 GTCS)
  - Detection Latency: 9 seconds (range −4 to 48)
  - False alarm rate: 0.67/day
  - 1 false alarm rate per 82 nights
  - True Negatives: 161 non-GTCS were not detected

- **sEMG Monitor Characteristics**
  - Dimensions: 63.5 mm X 43.5 mm X 14.5 mm
  - Mass: 29 g / 1 ounce

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Meet 2 of Our SeizureLink Users

Christalle

Chris
SeizureLink System Key Benefits

- Fastest, Most Accurate Alerting System Available
- Alerts, Notification and App All Included
- Gain More Independence
- Never Wait for a Recharge
- Sleep Better
- Get Some Relief

- Find Us Online:
  - SeizureLink.com
  - Facebook.com/SeizureLink

- Contact Us:
  - 1-833-BRS-LINK (277-5465)
  - SLSupport@BrainSentinel.com
- Info.SeizureLink.com/Transitions

Caregiver Screen

SeizureLink Status
Your Heroes are Linked

David Monroe

Theresa Coronel
Have you had a conversation with your doctor about any of these types of technology?

Do you use any of these types of technology to manage epilepsy?

What do you use?

What do you find helpful?

What other options are interesting to you?

What do you want out of a device?
What is being developed?

Technology to:

- Predict a seizure by measuring changes in the body or brain
- Treat and stop seizures in some situations
- Predict if a person is at risk for SUDEP and prevent it
What do you want out of a device?

The Epilepsy Foundation is asking for feedback from people living with epilepsy and their family members and caregivers.

You can take action and help:

- Take the Epilepsy Foundation’s [My Seizure Gauge survey](#)
- Share your priorities for devices in epilepsy in the Epilepsy Foundation’s [Community Forums](#)
Thank you!