

Epilepsy

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Symptoms



Photo Credit: Wikipedia

Aura: Described as a sensory abnormality by those who experience them, such as a funny taste, smell, or a visual distortion. Usually the result of a charge build up on a focal point in the brain, priming the discharge of multiple action potentials across the entire neural network.

Seizure Event: Can range from mild 10 second absence seizures, to 3 minute grand mal, to life threatening status epilepticus, a seizure that does not stop on its own.

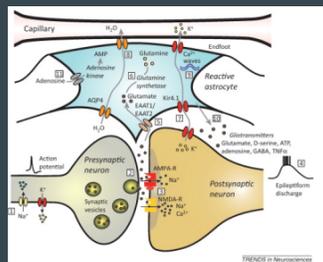
Postictal Period: A time where the patient is disoriented, lacking ambulatory coordination, and acts in a manner uncharacteristic of their normal personality. Many patients sleep during this time. May last seconds or hours, depending on the type of seizure and individual tolerances and areas of the brain affected by electrical discharge.

Seizure Onset and Cause

Abnormal AP firing and synaptic signals

Hyperexcitability and
Hypersynchrony of neurons

*Dysregulation of Glial function
Many factors can contribute to first and subsequent seizures. The most common is a high fever, and next is concussion or traumatic brain injury. Every epileptic event strengthens synapses and contributes to the likelihood of future events, early treatment is crucial for success.*



Seizure Categories:

- Non-Epileptic
- Febrile
- Generalized
- Partial

Did you know? You can have two seizures in your lifetime before you qualify for an epilepsy diagnosis

Seizure Types

- Petite Mal (Absence)
- Simple Partial
- Complex Partial
- Myoclonic.
- Tonic
- Atonic (Drop)
- Grand Mal (Tonic Clonic)



Image credit: focusonhealth.com

Diagnostics

The Electroencephalogram



The gold standard for diagnosis is an abnormal electroencephalogram (EEG).

Electroencephalogram (EEG) Types:

- Short Term Sleep
- 24 Hour
- Video Telemetry

MRI & PET Scan

Non-invasive scans are useful for determining pathological causes of abnormal electrical activity in the brain. These could include tumors, lesions, malformations, or atrophy.

Treatments

Treatments range from invasive and life-altering, to simply popping a pill on a regular schedule.

Invasive

Surgery

- Vagus Nerve Stimulator (VNS)
- Responsive Neurostimulation (RNS)
- Thermal Ablation

Non-Invasive

Antiepileptic drugs, diet changes



Photo Credit: The Epilepsy Foundation. Overview of an RNS System.

Living Life with Epilepsy

Many who are diagnosed go on to live a fairly normal life as long as they take care of seizure triggers such as:

Maintaining their medications, avoiding missed doses

Getting enough sleep

Avoiding strobe lights

Eating a balanced diet

Avoiding alcohol and illicit drug use

Science continues to make breakthroughs in this field, and it is exciting to see the expansion of possible therapies for those who are refractory to traditional treatments.



An Average Keto Meal

Created: 8/27/2014 Upload photos

Title: #204 4:1 Pepperon Salad

Verified by Nutritionist & ready for print or email

Delete	Food Item	Grams	Fat	Pro	Net Carb	Fiber %HA	Calories	Pro+Carb Ratio
<input type="checkbox"/>	Lettuce, Iceberg	9	0.01	0.08	0.16	0.11	1	
<input type="checkbox"/>	Bread - White (soft)	3.3	0.11	0.25	1.59	0	8	
<input type="checkbox"/>	Zucchini, with skin - raw	10	0.03	0.12	0.21	0.1	2	
<input type="checkbox"/>	Cheese, Mozzarella, Whole Milk	30	6.71	6.65	0.66	0	90	
<input type="checkbox"/>	Pepperoni, Hormel Original - giant or regular	30.1	13.97	5.36	0.29	0	148	
<input type="checkbox"/>	Mayonnaise, Hellmann's/Best Foods	43	34.4	0.03	0.3	0	311	
<input type="checkbox"/>	Oil, Olive	7.6	7.6	0	0	0	68	
	Actual	62.83	12.49	3.21	0.21	0.21	628	15.7 4.1
	GOAL	48.33	12.50	35.83			628	48.33 1:1

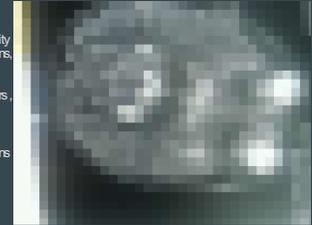
Suggested accuracy: achieve within 4 calories of GOAL calories AND on or slightly above the ratio.

Magnetic Resonance Imaging and PET Scan

Non invasive scans are useful for determining pathological causes of abnormal electrical activity in the brain. These could include tumors, lesions, malformations, or atrophy.

MRI scans are able to give slices of brain layers, like this coronal ventral-dorsal view, showing sclerosis of the left hippocampus.

PET scans utilize a dye that allows active regions to light up in colors.



Treatments Continued

Non invasive:

Anti-Epileptic Drugs (AED): From Phenobarbital to the latest drugs being trialed, research has aided development of multiple AED's for patients to try. There is still approximately 30% of the epileptic population who are refractory to drugs, and they have limited options beyond surgery or dietary intervention.

Cannabis (CBD Oil): This is the taboo topic lately on all epilepsy group pages, but has gained popularity now that Phase 2 and 3 trials have begun. Preliminary data support a role in treating refractory epilepsy, which is a breath of fresh air for those who are desperate for seizure control.

The Ketogenic Diet: This high fat, low protein, low carbohydrate diet existed for thousands of years, based on the idea that fasting reduced or eliminated seizure activity. The diet is difficult for the average person to maintain, and has side effects making it necessary to modify it after 2 years to avoid complications such as kidney failure and stunted growth.