
The Ketogenic Diet And Its Effect On Epilepsy

Imagine if a brain can primarily run on fatty foods such as bacon and cheese, well believe it or not a brain can most definitely only run on foods such as that nature. It may be hard to believe but the ketogenic diet is one of many diets that aren't well known by the average human. Due to the fact that few people know about it, they do not know of the benefits that come along with doing such a diet. This fat-fueled way of life known as Keto can in fact be used as a way to help with epilepsy, a common seizure disorder that many humans develop or inherit genetically. Epilepsy and Keto have a history of helping children lessen the chance of seizures or getting rid of the seizure disorder itself. Keto signals the production of ketones which will aid in making the violent abnormal activities in the brainless violent. The correlation between both the disorder and diet go back to the 1920s as a treatment for epilepsy. Much research has been done about the topic but the research that will be presented will gradually connect the pieces together to prove that such a diet can in fact help with lowering the rate of epilepsy that can lead to the death of a person if not dealt with. The Keto diet does in fact help with epilepsy because the cells the ketosis stage produces are called ketones. Ketones become the primary energy source for the brain that increases efficiency and performance, which explains why the brain is referred to as fat-fueled. It is all because of the ketones that are produced at a rapid rate if the diet is followed properly.

What some people don't understand about the Keto diet is that it isn't just another diet that promotes fast weight loss. The ketogenic diet is a lifestyle people choose to follow which consists of having a high fat intake and little to no carbohydrates (carbs). It may sound insane to let go of delicacies such as cake, and hamburgers but there are many to take the challenge head-on to live a better lifestyle. The average ratio of food intake is four to one. The four to one ratio refers to the consumption of only one gram of protein per four grams of fat. Carbohydrates cease to exist because the main goal of a person is to get their body into a starvation mode that is referred to as ketosis. In this phase, a person will cause their body to naturally go into the body's state of ketosis where it uses the fat stored in the body as a source of energy instead of the glucose that is produced when carbohydrates are consumed as "Most cells prefer to use blood sugar, which comes from carbohydrates, as the body's main source of energy. In the absence of circulating blood sugar from food, we start breaking down stored fat into molecules called ketone bodies (the process is called ketosis). Once you reach ketosis, most cells will use ketone bodies to generate energy until you start eating carbohydrates again" For a person to achieve this body's special state, one must completely cut out foods that have carbohydrates and sugars for good. Each and every person has to count their macros which varies per person but must intake about 75% fat, 20% protein, and 5% carbohydrates that naturally come in foods meaning things such as bread will become the worst enemy when achieving this state and maintaining it. The foods that are involved in attaining and maintaining keto "typically includes plenty of meats, eggs, processed meats, sausages, cheeses, fish, nuts, butter, oils, seeds, and fibrous vegetables". A high-fat diet may not sound the most pleasing to the average human because of the word "fat" They think it's impossible to do such a thing and immediately get a red flag. Today's society is not properly educated because the word fat has been and is still being seen as fat. The fats that people automatically think are being consumed are saturated and trans fats which are indeed bad but the fat the ketogenic diet requires is the good fats.

Many people will question the correlation between the Keto diet and Epilepsy, and they are not to blame. If the person doesn't have enough background information on both topics the connection between the two wouldn't be as clear. Epilepsy is a chronic disorder that involves abnormal activities that occur in the brain due to energy deficit and many other things that can be violent towards humans. "The seizures happen when clusters of nerve cells, or neurons, in the brain send out the wrong signals" meaning these seizures that are only considered a symptom until more occur can happen any day of the week, any time of day. Epilepsy as stated before is a chronic seizure disorder that has many causes that affect the wide range of infants to adults.

Now that there is a basic idea present of both the keto diet and the seizure disorder called epilepsy, ketones can be introduced. "Ketone bodies," are byproducts of the body breaking down fat for energy. This only happens when your carbohydrate intake is low, and your body switches into a state of ketosis" (Perfect Keto Blog). "Technically, ketones are organic compounds that contain a carbonyl group (a carbon atom double-bonded to an oxygen atom) that is single bonded to two hydrocarbon groups made by oxidizing secondary alcohols.". Just like many other molecules and compounds in the human body ketones are just another glucose that the body produces to keep it functioning properly, specifically in the brain. Studies have shown that the brain is more effective when it is running on ketones in comparison to the average glucose that is produced. The reasoning behind why ketones are good is because most diseases and disorders are all tracked back to and assumed to occur because of energy deficit which is something seizures do when not fed enough energy to work with. Abnormal actions begin to happen in the brain because glucose isn't good enough of an energy source to supply the brain to run at all times. The way ketones are used as an energy source is by crossing blood-brain barriers to cross through to the brain to supply it with quick and efficient fuel The body can produce three types of ketones that each has its own function which is known as acetoacetate, beta-hydroxybutyric, and acetone. Both acetoacetate and beta-hydroxybutyrate are responsible for transporting energy from the liver to other tissues in your body may sound unsafe for your body to use ketones instead of its natural energy source known as glucose, ketone bodies are completely safe as any excess amount of them are eliminated through your breath and urine. There shouldn't be anything stating that ketones are harmful to one's body and that the ketogenic diet is not safe to do when there is proof all over the place showing and telling people that the results are very effective and can possibly change their life as well.

The brain to each and every single individual is one of the main reasons why we are alive and can make choices and have a conscience. "The brain is one of the more important organs in our body and it's set up in a special area. It's put inside a bony, protective skull and it's got its own little border guard; the border guard only lets certain substances into it. This border guard is called the blood-brain barrier. We might think that when we cut ourselves or have an accident and we're bleeding that the same blood flows into our brain, but it does not. It goes up through our neck and then it flows near the blood-brain barrier and only certain substances are allowed into the brain, like proteins. The blood-brain barrier basically makes sure that only the right stuff gets in and the right stuff gets out." (Barbra). This is one of many reasons why ketones that run into the bloodstream and through the blood barrier are allowed in the brain. Ketones are a part of the group of special things that are allowed to enter and exit the brain whenever necessary. It has been proven that ketones are in fact a better alternative to glucose that can put a person at risk of disorders such as obesity, "added sugar in processed foods like soft drinks and breakfast cereals could elevate your body's glucose levels, causing health issues like obesity or cognitive

decline—and high glucose levels have been tied to memory problems in studies.” (Barbra). It is well known that the brain is the part of the body that contains the most fat at nearly 60% according to google. The most logical thing would be to take under consideration that the brain will need an energy source that will be able to supply the entire brain to not only function properly but to exceed its normal capacity and to work effectively, avoiding abnormal activities that cause a person to have a seizure which could possibly kill them depending on the severity. This is now in reference to a fat-fueled brain due to the fact that ketones are produced from the liver to use throughout the body replacing glucose.

A fat-fueled brain is a key to the development of a person who is trying to prevent seizures and to promote and enhance brain energy production and productivity. “The Emory research team studied the link between diet and epileptic seizures on the behavioral, cellular, and genetic level. They found, as had others, that in rats fed the KD the resistance to seizures develops slowly, over one to two weeks, in contrast to rats treated with conventional anticonvulsant drugs. On the cellular level, they found that the anticonvulsant effect of the ketogenic diet did not correlate with a rise in plasma ketone levels or with a decrease in plasma glucose. Because longer treatment with the KD was necessary to increase the resistance to seizures, they concluded that changes in gene expression might hold the key to the diet's anticonvulsant effects.” Many researchers have taken under consideration that energy deficit amongst all the disorders has been quite a huge contributor to the disorder itself and the answer was lying beneath the research that had been done with the ketogenic diet itself. In the early 1920s, there has been researching done, and was concluded that children with epilepsy on the ketogenic diet had significant results with 10-15% having fewer seizures too about 20% losing the abnormal actions that occurred in their brains causing the seizures. As it was stated earlier ketones are the most efficient fuel source to the brain as it improves its performance and there shouldn't be any arguments going against it when it had been scientifically tested and proven to work effectively. “There’s nothing wrong with sugar, provided it’s in an appropriate amount. When you get too much glucose, bad things start to happen. We end up having the risk of obesity, diabetes and so forth.” (Barbra).