

## Sugar and the Brain



Glucose, a form of sugar, is the primary source of energy for every cell in the body. Because the brain is so rich in nerve cells, or neurons, it is the most energy-demanding organ, using one-half of all the sugar energy in the body.

Brain functions such as thinking, memory, and learning are closely linked to glucose levels and how efficiently the brain uses this fuel source. If there isn't enough glucose in the brain, for example, neurotransmitters, the brain's chemical messengers, are not produced and communication between neurons breaks down. In addition, hypoglycemia, a common complication of diabetes caused by low glucose levels in the blood, can lead to loss of energy for brain function and is linked to poor attention and cognitive function.

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## Faculty First Person



### A conversation with Gary Yellen, AB '79, PhD

My research focuses on a remarkably effective, but poorly understood, therapy for epilepsy called the ketogenic diet. It was developed in the 1920s by clinicians at Harvard Medical School and the Mayo Clinic and is basically a high-fat, practically-no-carbohydrate diet, similar to the Atkins diet. Most of the people who use this diet—and for whom none of the medical treatments for epilepsy work—have many fewer seizures.

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## In the News

### Understanding Body Language

Harvard Medical School scientists have developed new computational techniques that can make sense of the bodily movements of mice. Along the way they also proposed a solution to a longstanding problem in neuroscience: how to objectively study complex three-dimensional patterns of animal behavior without relying on subjective human observers. [Read more »](#)

### Breaking Point

The genome of developing brain cells harbors 27 clusters, or hotspots, where its DNA is much more likely to break, according to research from Harvard Medical School and Boston Children's Hospital. These hotspots appear in genes associated with brain tumors and a number of neurodevelopmental and neuropsychiatric conditions. [Read more »](#)

### How, Not Why, the Human Brain Folds

Why the brain is folded can be rationalized easily from an evolutionary perspective, but less understood is how the brain folds. A group of scientists has identified the cause, which could help unlock the inner workings of the brain and unravel brain-related disorders. [Read more »](#)

### New Book

Hildegarde E. Mahoney, chair of the Harvard Mahoney Neuroscience Institute, has recently published "Journey Interrupted," a memoir detailing her family's experience during WWII. [Learn more »](#)