

Discovery challenges belief about brain's cellular makeup

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A discovery made by Junhwan Kim, PhD, assistant professor at The Feinstein Institute for Medical Research, is challenging science's longstanding beliefs regarding the cellular makeup of the brain. This breakthrough was outlined in a study recently published in the journal *Molecular and Cellular Biochemistry*. Having a full understanding of the brain can help identify new therapies as well as develop guidelines to maintain brain health.

It has long been a belief in the scientific field that the building blocks of [brain](#) cells, phospholipids, are enriched by polyunsaturated fatty acids. When trying to prove that the brain, like other major organs, are made of polyunsaturated fatty acids, Dr. Kim and his team were surprised by the results.

"We found the opposite of what science has widely believed - phospholipids containing polyunsaturated fatty acids in the brain are lower than other major organs," said Dr. Kim. "Knowing that there are lower amounts of polyunsaturated fatty acids in the brain, we may need to rethink how this acid impacts [brain health](#) and conditions like oxygen deprivation."

Dr. Kim and his team analyzed brain, heart, liver and kidney tissue from animals and found that only 60 percent of the brain's phospholipids were made up of polyunsaturated fatty acids. That's compared to other organs, where the polyunsaturated fatty acid content is about 90 percent. It has also been previously presumed that high [polyunsaturated fatty acids](#)

levels in the brain were what made it susceptible to [oxygen deprivation](#) or brain injury. Further research is required to find out the reasoning for the difference in acid levels, but it could also challenge beliefs about polyunsaturated [fatty acids](#)' impact on these conditions.

"Dr. Kim's findings challenge basic assumptions about the brain," said Kevin J. Tracey, MD, president and CEO of the Feinstein Institute.

"This paper is an important step to defining a new research path."

Provided by Northwell Health's Feinstein Institute for Medical Research

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