

# Spatial memory patterns mapped

June 14 2018

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Researchers at Cardiff University have mapped out how we store long-term spatial memory, shedding light on how our brains remember where things are within our surroundings.

Professor Frank Sengpiel, from Cardiff University's School of Biosciences, said: "Until now, how the brain stores information about

our environment over long periods of time has been a mystery.

"Our new research reveals a pattern of brain cell activity within the [retrosplenial cortex](#) when the brain is storing where things are located in space.

"Now that these cells have been identified, future research may show us how they become disrupted in, for example, Alzheimer's Disease, or how we might be able to selectively modify them to enhance spatial memories."

Our [spatial memory](#) allows us to record information about our environment and find our way around.

The team of researchers at Cardiff University used mazes to test the spatial [memory](#) of mice, putting strawberry milkshake in different parts of the maze.

The mice were tasked to explore the maze to find the milkshake, and then their brains were scanned to see what happened after they learnt how to orientate within the maze.

"After the mice had explored the maze, we scanned their brain to look at its activity.

"We found that a part of the brain called the retrosplenial cortex showed a specific pattern of activity after the mice had learnt where the strawberry milkshake was located.

"Twenty-four days later, we put the mice in the maze again, and we found that some mice were better at remembering where the strawberry milkshake was in the [maze](#).

"These [mice](#) showed these same specific patterns of activity in this area of the [brain](#)," said Professor Sengpiel.

The research "Spatial Memory Engram in the Mouse Retrosplenial Cortex" can be viewed in *Current Biology*.

**More information:** Michal M. Milczarek et al. Spatial Memory Engram in the Mouse Retrosplenial Cortex, *Current Biology* (2018).  
[DOI: 10.1016/j.cub.2018.05.002](https://doi.org/10.1016/j.cub.2018.05.002)

Provided by Cardiff University

Citation: Spatial memory patterns mapped (2018, June 14) retrieved 27 April 2024 from  
<https://medicalxpress.com/news/2018-06-spatial-memory-patterns.html>

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