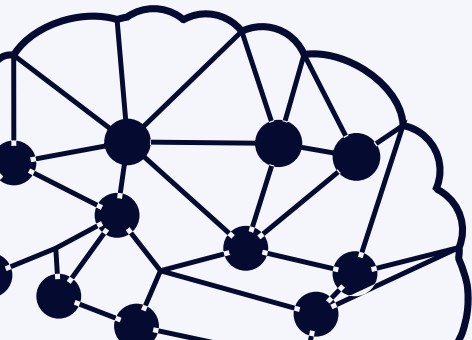


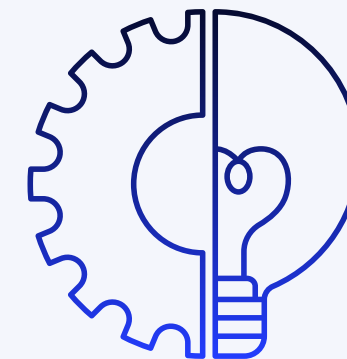
# Memory erasure



Presentation made by: Blanche Guo



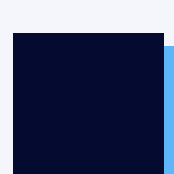
# Table of Content



What is memory erasure?



Is memory erasure even possible?



How scientists discovered memory erasure.



Purpose of memory erasure.

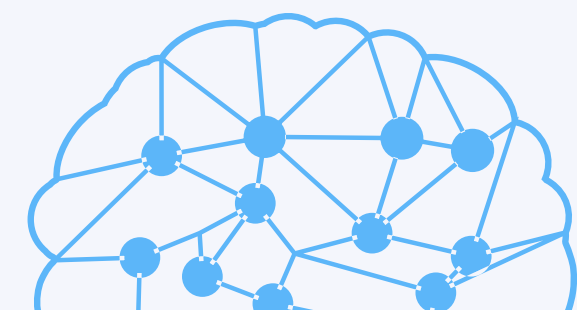


Possible methods of memory erasure.



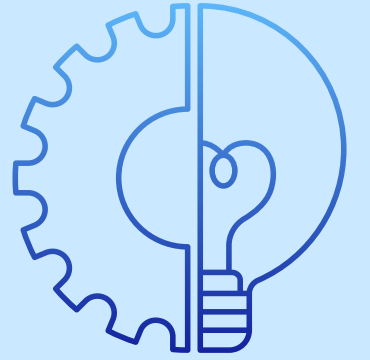
## Benefits

- Offer more services
- Save cash
- Offer better services

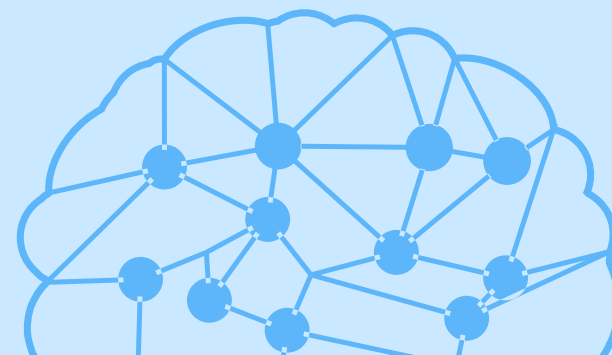
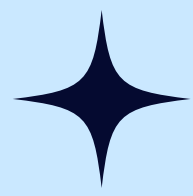





# Memory Erasure

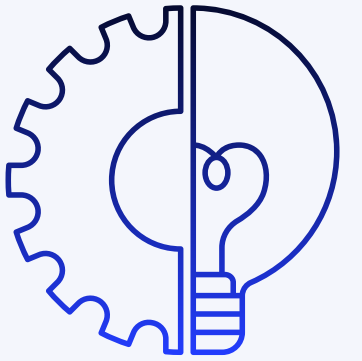


Memory erasure is the selective artificial removal of memories or associations from the mind. Memory erasure has been shown to be possible in some experimental conditions; some of the techniques currently being investigated are: drug-induced amnesia, selective memory suppression, destruction of neurons, interruption of memory, reconsolidation, and the disruption of specific molecular mechanisms.







## Is memory erasure even possible?



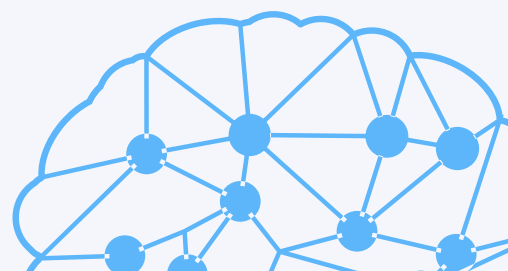
**Yes, memory is possible.**



As early as 2009 researchers were able to trace and destroy neurons involved in supporting the specific type of memory that they were trying to erase. This caused the erasure of the target memory.



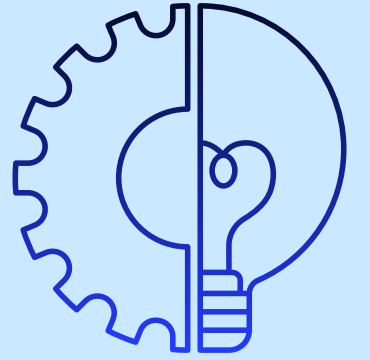
Memory erasure has been shown to be possible in some experimental conditions; some of the techniques currently being investigated are: drug-induced amnesia, selective memory suppression, destruction of neurons, interruption of memory, reconsolidation, and the disruption of specific molecular mechanisms.



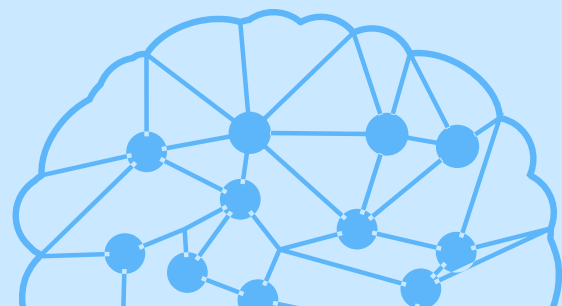




# How scientists discovered memory erasure.



- **Researchers working with mice have discovered that by removing a protein from the region of the brain responsible for recalling fear, they can permanently delete traumatic memories.**
- **“This may sound like science fiction, the ability to selectively erase memories,” says Huganir. “But this may one day be applicable for the treatment of debilitating fearful memories in people, such as post-traumatic stress syndrome associated with war, rape or other traumatic events.”**







# Purpose of Memory Erasure



Losing your memory can be a terrible thing, but most of us have a few specific memories we would very much like to forget.



There are several different types of possible patients that have the potential to draw great benefit from the selective memory erasure; these include people with drug addiction, or posttraumatic stress disorder (PTSD). PTSD patients may include war veterans, people who witnessed horrific events, victims of violent crimes and many other possibly traumatic events. These potential patients have unwanted memories that can be absolutely devastating to their daily lives and cause them to not be able to function properly.



“Memory erasure has the potential to alleviate PTSD and anxiety disorders by removing the non-associative memory that causes the maladaptive physiological response,” says Jiangyuan Hu, PhD, an associate research scientist in the Department of Psychiatry at CUIMC and co-author of the paper.



# Possible methods of erasing memory

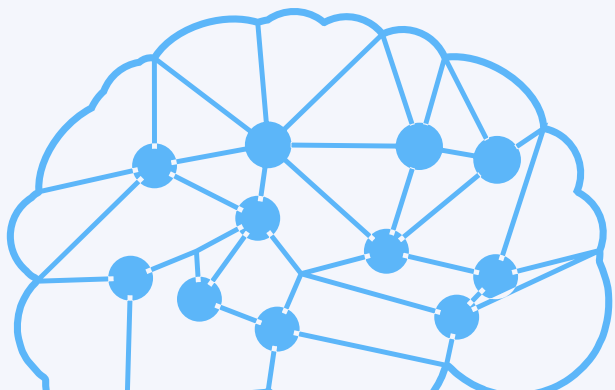
```
graph TD; A[Possible methods of erasing memory] --> B[drug-induced amnesia]; A --> C[selective memory suppression]; A --> D[memory reconsolidation];
```

## drug-induced amnesia

Drug-induced amnesia is impairment or loss of memory due to drug use. Drug-induced memory loss is typically anterograde, the inability to create new memories for a period of time beginning soon after drug introduction. Memory loss effects are generally transient and limited to short-term memory.

## selective memory suppression

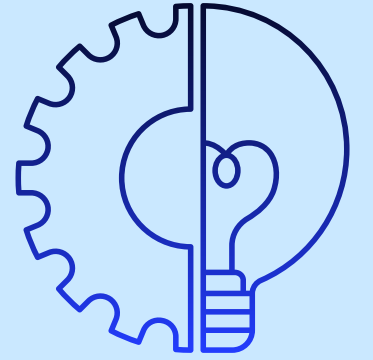
Selective memory suppression is the idea that someone can consciously block an unwanted memory. Several different therapeutic techniques or training have been attempted to test this idea with varied success.



## memory reconsolidation

Memory reconsolidation is the process in which reactivated long-term memory (LTM) becomes transiently sensitive to amnesic agents that are effective at consolidation.

# Sources



<https://www.iflscience.com/one-protein-indicates-how-erasable-a-memory-is-rat-study-indicates-61143> (slide1 image)

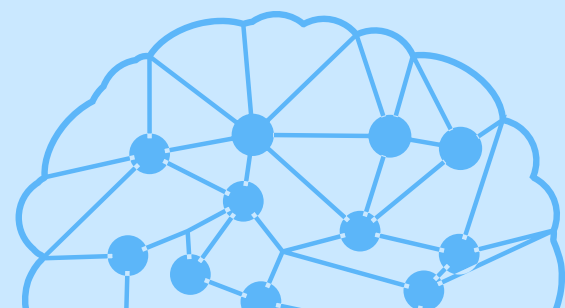
[https://www.hopkinsmedicine.org/news/media/releases/johns\\_hopkins\\_researchers\\_discover\\_how\\_to\\_erase\\_memory](https://www.hopkinsmedicine.org/news/media/releases/johns_hopkins_researchers_discover_how_to_erase_memory) (slide5 info)

<https://www.istockphoto.com/photo/dementia-illness-gm832255394-135422889> (slide4 image)

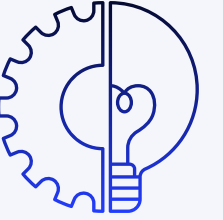
<https://www.cuimc.columbia.edu/news/select-memories-can-be-erased-leaving-others-intact#:~:text=%E2%80%9CMemory%20erasure%20has%20the%20potential,co%2Dauthor%20of%20the%20paper.> (slide6 info)

[https://en.wikipedia.org/wiki/Memory\\_erasure](https://en.wikipedia.org/wiki/Memory_erasure) (slide7 image)

<https://www.britannica.com/story/pro-and-con-minimum-wage> (slide8 image)







**Thank You**

