

**Name of Journal:** *World Journal of Clinical Cases*

**Manuscript NO:** 56063

**Manuscript Type:** CASE REPORT

**Forniceal deep brain stimulation in severe Alzheimer's disease: A case report**

Lin W *et al.* Forniceal DBS in severe Alzheimer's disease

Wei Lin, Wei-Qi Bao, Jing-Jie Ge, Li-Kun Yang, Zhi-Pei Ling, Xin Xu, Jie-Hui Jiang,  
Chuan-Tao Zuo, Yu-Hai Wang

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## A Phase II Study of Fornix Deep Brain Stimulation in Mild ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5026133>

Sep 06, 2016 · Background: **Deep brain stimulation** (DBS) is used to modulate the activity of dysfunctional **brain** circuits. The safety and efficacy of DBS in **dementia** is unknown. Objective: To assess DBS of memory circuits as a treatment for patients with mild **Alzheimer's disease** (AD). Methods: We evaluated active "on" versus sham "off" bilateral DBS directed at the fornix-a major fiber bundle in ...

Cited by: 117

Author: Andres M. Lozano, Lisa Fosdick, M. Mall...

Publish Year: 2016

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## Fornix-Region Deep Brain Stimulation–Induced Memory ...

<https://www.nejm.org/doi/full/10.1056/NEJMc1905240>

A phase II study of fornix **deep brain stimulation** in mild **Alzheimer's disease**. *J Alzheimers Dis* 2016;54: 777-787. Crossref; Medline; Google Scholar. 2. Penfield W, Perot P. The **brain's** record ...

Cited by: 2

Author: Wissam Deeb, Bryan Salvato, Leonardo ...

Publish Year: 2019

## Deep Brain Stimulation in Mild Alzheimer's Disease ...

<https://www.nia.nih.gov/alzheimers/clinical-trials/deep-brain-stimulation-mild...> ▾



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## [A circuit view of deep brain stimulation in Alzheimer's ...](#)

<https://molecularneurodegeneration.biomedcentral.com/...> ▾

Aug 08, 2019 - **Alzheimer's disease** (AD) represents a considerable health threat as increases in life expectancy elevate the incidence of AD worldwide []. It is characterized by cognitive decline, alterations in synaptic transmission, and neuronal death brought on by the accumulation of neurofibrillary tangles in neurons and neuritic amyloid beta (A $\beta$ ) plaque in the **brain** parenchyma [].

**Cited by:** 2**Author:** Danfang Yu, Huanhuan Yan, Jun Zhou, X...**Publish Year:** 2019

## [Deep brain stimulation for Alzheimer's Disease: An update ...](#)

<https://surgicalneurologyint.com/surgicalint-articles/deep-brain-stimulation-for...> ▾

Background: **Dementia** is among the leading causes of **severe** and long-term disability worldwide, decreasing the quality of life of individuals and families. Moreover, it induces an enormous economic burden on societies. The most prevalent cause of **dementia** is **Alzheimer's disease** (AD). Because current treatment options for AD are limited, **deep brain stimulation** (DBS) has been considered.

## [Deep Brain Stimulation in Mild Alzheimer's Disease ...](#)

<https://www.nia.nih.gov/alzheimers/clinical-trials/deep-brain-stimulation-mild...> ▾

Aug 01, 2019 - DBS uses a surgically implanted medical device, similar to a cardiac pacemaker, to deliver electrical pulses to precisely targeted areas of the **brain**. In this case, the targeted region is the **fornix**, a major pathway in the **brain's memory** circuit that is one of the first areas affected by **Alzheimer's disease**.

## [Partial improvement in performance of patients with severe ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6199932>

Abstract **Deep brain stimulation** is a therapy for **Alzheimer's disease** (AD) that has previously been used for mainly mild to moderate cases. This study provides the first evidence of early alterations in performance induced by **stimulation** targeted at the **fornix in severe AD patients**.

**Cited by:** 4**Author:** Zhi-Qi Mao, Xin Wang, Xin Xu, Zhi-Qiang...**Publish Year:** 2018

## Deep Brain Stimulation

Involves implantation of a device to send electrical signals to the brain.

**Type of procedure:** Open**Recovery time:** Can take several weeks**Duration:** Few hours**Hospital stay:** Typically a few hours

## May treat

[See all \(5+\)](#)

### Essential Tremor

Common

Essential tremor, also called benign tremor, familial tremor, and ...

[Read more](#)

### Grand Mal Seizure

Rare

A generalized tonic-clonic seizure, commonly known as a grand mal seizure ...

[Read more](#)

## What to expect before procedure

- An evaluation performed before the surgery includes physical exam and imaging tests such as MRI.
- Provide a list of all current medications. The doctor might ask to discontinue some of them several days before the procedure.
- It is required to fast for a certain number of hours before the procedure.

## What to expect during procedure

- The head is positioned in a frame to keep it still during the procedure.
- A local anesthetic is given to numb the scalp.
- A thin wire lead with electrodes is placed in the brain.
- The lead is connected to the pulse generator (contains batteries) placed under the skin in the chest through wires.
- A surgery to place the pulse generator is performed under general