

Deep brain stimulation and memory functions

Citation for published version (APA):

Aldehri, M. (2020). *Deep brain stimulation and memory functions*. [Doctoral Thesis, Maastricht University]. ProefschriftMaken Maastricht. <https://doi.org/10.26481/dis.20200710ma>

Document status and date:

Published: 01/01/2020

DOI:

[10.26481/dis.20200710ma](https://doi.org/10.26481/dis.20200710ma)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Statements

Belonging to the PhD thesis

Deep brain stimulation and memory functions

Majed Ahmad Aldehri

1. There are vital gaps in our understanding of the effect of electrical stimulation on memory-related functions that still exist and need to be addressed. (This thesis).
2. The potential mechanisms involved in enhancing memory functions by deep brain stimulation (DBS) involve synaptic plasticity, neurogenesis, volume increase, and increased acetylcholine release. (This thesis).
3. Fornix DBS induces long-term depression of hippocampal synaptophysin levels. (This thesis).
4. Intermittent DBS of the nucleus basalis of Meynert (NBM) is able to reverse memory impairment induced by scopolamine. These findings stress the clinical relevance of exploring the NBM neuromodulation with non-conventional stimulation paradigms. (This thesis).
5. Deep brain stimulation of the NBM increased the formation of newly formed cells in the hippocampus, which might contribute to one of the mechanisms of DBS-mediated behavioural effects. (This thesis).
6. Seeking knowledge is an obligation upon everyone: “Whoever travels a path in search of knowledge, God will make easy for him a path to Paradise” (The Prophet Mohammad).
7. Life is all memory, except for the one present moment that goes by you so quickly you hardly catch it going. (Sarah Hescham).
8. There is a single light of science, and to brighten it anywhere is to brighten it everywhere. (Isaac Asimov).
9. Success is the ability to go from one failure to another with no loss of enthusiasm. (Winston Churchill)
10. A person who never made a mistake never tried anything new. (Albert Einstein).
11. The science of today is the technology of tomorrow. (Edward Teller)