Moving the brain: Neuroimaging motivational changes of deep brain stimulation in obsessive-compulsive disorder
Figee, M.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: http://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Download date: 03 Jan 2019
A


Intentional Maps in Posterior Parietal Cortex.
*Annual Rev Neurosci.* 25, 189-220.

Treatment of patients with intractable obsessive-compulsive disorder with anterior capsular stimulation. Case report.

Anderson, S. W., Damasio, H., & Damasio, A. R (2005).
A neural basis for collecting behaviour in humans.
*Brain: a journal of neurology,* 128, 201–12.

Pathophysiology of obsessive-compulsive disorder: a necessary link between phenomenology, neuropsychology, imagery and physiology.
*Prog. Neurobiol.,* 72, 195-221.

Deep brain stimulation of the ventral caudate nucleus in the treatment of obsessive-compulsive disorder and major depression. Case report.
*J Neurosurg* 101, 682-686.

Deep brain stimulation for OCD and major depression.
*Am J Psychiatry,* 162, 2192.

Distinct striatal targets in treating obsessive-compulsive disorder and major depression.
*Journal of neurosurgery,* 111(4), 775–9.

Performing functional magnetic resonance imaging in patients with Parkinson’s disease treated with deep brain stimulation.
*Mov Disord* 21:1154-1162.

From reactive to proactive and selective control: developing a richer model for stopping inappropriate responses.
*Biological Psychiatry* 69:e55–68.

Morphological asymmetry in anterior limb of human internal capsule revealed by confocal laser and polarized light microscopy.
*Psychiatry Research,* 91(3), 141-154.


Quantification of striatal dopamine transporters with $[^{123}]$I beta-CIT SPECT is influenced by the selective serotonin reuptake inhibitor paroxetine: a double-blind, placebo-controlled, crossover study in healthy controls.


*Neuropsychopharmacol* 33, 1252–1258.


*Psychiatry Res* 33: 83-94.


tal confounds.

NeuroImage, 37, 508–17.

Clinical Case Study: Treatment of late-onset OCD following basal ganglia infarct.
Depress Anxiety, 15, 87-90.

Acquired Obsessive-Compulsive Disorder Associated With Basal Ganglia Lesions.

The neuropsychology of obsessive compulsive disorder: the importance of failures in cognitive and behavioural inhibition as candidate endophenotypic markers.

Orbitofrontal dysfunction in patients with obsessive-compulsive disorder and their unaffected relatives.
Science 321, 421-422.

Electrophysiological effects and clinical results of direct brain stimulation for intractable epilepsy.

Altered Brain Activity during Reward Anticipation in Pathological Gambling and Obsessive-Compulsive Disorder.

Neural correlates of value, risk, and risk aversion contributing to decision making under risk.

Functional alterations of large-scale brain networks related to cognitive control in obsessive-compulsive disorder.

Cross-species affective functions of the medial forebrain bundle-Implications for the treatment of affective pain and depression in humans.

214


D


obsessive-compulsive disorder.
*Arch Gen Psychiatry* **67**, 1061–1068.

Low level of dopaminergic D2 receptor binding in obsessive-compulsive disorder.

The role of dopamine in obsessive-compulsive disorder: preclinical and clinical evidence.

On certainty: studies in obsessive-compulsive disorder.

Pharmacotherapy of obsessive-compulsive disorder and obsessive-compulsive spectrum disorders.

Dewey, S.L., Smith, G.S., Logan, J., Alexoff, D., Ding, Y.S., King, P., Pappas, N., Brodie, J.D.,
Serotonergic modulation of striatal dopamine measured with positron emission tomography (PET) and in vivo microdialysis.

Resolution of Severe Obsessive-Compulsive Disorder After a Small Unilateral Nondominant Frontoparietal Infarct.

Functional magnetic resonance imaging of autism spectrum disorders.

Functional neuroimaging of reward processing and decision-making: a review of aberrant motivational and affective processing in addiction and mood disorders.


Compulsive Symptoms Associated With Frontal Lobe Injury.
*Am. J. Psychiatry, 151, 618.*

*American journal of neuroradiology 31, 15–23.*

*Brain, 133, 3661-75.*

*Brain structure & function, 213(1-2), 93-118.*

E

*J Neurosc 31, 7349–56.*

*PLoS.One. 4, e8429.*

*Biol Psychiatry 70, 754–62.*


F

*Neurosurgery, 69, 1281–90.*

Targets for deep brain stimulation in obsessive-compulsive disorder.
*Psychiatr Ann.* 40, 492-498

Neurosurgical targets for compulsivity: what can we learn from acquired brain lesions?

Neuroimaging of deep brain stimulation in psychiatric disorders.
*Deep Brain Stimulation: A New Frontier in Psychiatry.*
Berlin/Heidelberg: Springer-Verlag GmbH, p. 225-230

Dysfunctional reward circuitry in obsessive-compulsive disorder.
*Biological psychiatry* 69, 867-74.

Deep brain stimulation induces endogeneous striatal dopamine release
in obsessive-compulsive disorder.
*Biological Psychiatry, in press.*

Figee, M, Luigjes, J, Smolders, R, Wingen, G Van, Kwaasteniet, B De, Mantione, M, Ooms, P,
et al. (2013).
Deep brain stimulation restores frontostriatal network activity in obsessive-compulsive disorder.
*Nature Neuroscience* 4, 386-7

Figee M, de Koning PP, Klaassen S, Vulink N, Mantione M, van den Munckhof P,
Deep brain stimulation induces striatal dopamine release in obsessive-compulsive disorder.
*Biological Psychiatry, Aug 9, Epub ahead of print.*

A review of antipsychotics in the treatment of obsessive compulsive disorder.
*J Psychopharmacol.* 20, 97-103.

Fineberg NA, Potenza MN, Chamberlain SR, Berlin HA, Menzies L, Bechara A, Sahakian BJ,
Probing Compulsive and Impulsive Behaviors, from Animal Models to Endophenotypes:
A Narrative Review.
*Neuropsychopharmacol.,* 35, 591-604.

Discrete coding of reward probability and uncertainty by dopamine neurons.
*Science* 299, 1898-1902.


Deep brain stimulation for treatment-refractory obsessive-compulsive disorder: psychopathological and neuropsychological outcome in three cases.  


Disruption in the balance between goal-directed behavior and habit learning in obsessive-compulsive disorder.  

*Biological Psychiatry*.

Unilateral lenticular infarcts: radiological and clinical syndromes, aetiology, and prognosis.  
*J Neurol Neurosurg Psychiatry*, 63, 611-615.

Effect of focal cerebellar lesions on procedural learning in the serial reaction time task.  

Case report: Late-onset startle syndrome and obsessive compulsive disorder.  
*Behav. Neurol.*, 11, 113-116.

The Yale-Brown Obsessive Compulsive Scale. I. Development, use, and reliability.  
*Arch.Gen.Psychiatry* 46, 1006-1011.

The Yale-Brown Obsessive Compulsive Scale. II. Validity.  


H


The Assessment of Anxiety States by Rating.

Hamilton M. (1960).
A rating scale for depression
*J Neurol Neurosurg Psychiatry* 23, 56–62.

Striatal IMP-SPECT decrease in obsessive compulsive disorder, normalized by pharmacotherapy.
*Neuropsychiatry Neuropsychol. Behav. Neurol.,* 2, 290-300.

Altered corticostriatal functional connectivity in obsessive-compulsive disorder.
*Archives of general psychiatry*, 66, 1189-200.

*Biological psychiatry.*

Reduced midbrain-pons serotonin transporter binding in patients with obsessive–compulsive disorder.

Traitement stéréotaxique des tics et cris inarticulés ou copralalique considérés comme phénomène d’obsession motrice au cours de la maladies de Gilles de la Tourette.
*Revue Neurologique (Paris),* 123, 89-100.

Serotonin and dopamine transporter imaging in patients with obsessive-compulsive disorder.
*Psychiatry Res.* 140, 63–72.

Intraoperative functional MRI as a new approach to monitor deep brain stimulation in Parkinson’s disease.
*Eur Radiol* 14:686-690.

‘Behavioral’ addictions: do they exist?


References

Frontal glioma presenting as anxiety and obsessions: a case report.

Aberrant ventral striatal responses during incentive processing in unmedicated patients with obsessive-compulsive disorder.
*Acta psychiatraca Scandinavica,* 123(5), 376–86.

Therapeutic subthalamic nucleus deep brain stimulation reverses cortico-thalamic coupling during voluntary movements in Parkinson’s disease.
*PloS one,* 7(12)

Review series Children with obsessive-compulsive disorder:’ are they just “ little adults ”?, 119, 737-746.

Obsessive-compulsive disorder after closed head injury: review of literature and report of four cases.
*Brain Inj.,* 10, 55-63.

Serotonin-dopamine interaction and its relevance to schizophrenia.
*Am J Psychiatry.* 153, 466-76. Review.

Stability of [¹²³I]IBZM SPECT measurement of amphetamine-induced striatal dopamine release in humans.
*Synapse* 31, 302–8.

Robust smoothness estimation in statistical parametric maps using standardized residuals from the general linear model.
*Neuroimage.* 10, 756-766.

Kim CH, Cheon KA, Koo MS et al. (2007)
Dopamine transporter density in the basal ganglia in obsessive-compulsive disorder, measured with [¹²³I]IPT SPECT before and after treatment with serotonin reuptake inhibitors.
*Neuropsychobiology.* 55, 156-162.
Dopamine transporter density of basal ganglia assessed with [¹²³I]IPT SPET 
in obsessive-compulsive disorder. 

Grey matter abnormalities in obsessive-compulsive disorder: 
Statistical parametric mapping of segmented magnetic resonance images. 

Obsessive-Compulsive Disorder Associated With a Left Orbitofrontal Infarct. 

Mapping brain regions in which deep brain stimulation affects schizophrenia-like behavior in 
two rat models of schizophrenia. 
*Brain stimulation, Oct 8.*

Nucleus accumbens deep brain stimulation results in insula and prefrontal activation: a large 
animal fMRI study. 
*PloS one, 8*, e56640.

Anticipation of increasing monetary reward selectively recruits nucleus accumbens. 
*J. Neurosci. 21*, RC159.

Dissociation of reward anticipation and outcome with event-related fMRI. 
*Neuroreport 12*, 3683–3687.

EEG delta oscillations as a correlate of basic homeostatic and motivational processes. 
*Neuroscience and biobehavioral reviews*, 36, 677–695.

R-fluoxetine increases extracellular DA, NE, as well as 5-HT in rat prefrontal cortex and 
hypothalamus: an in vivo microdialysis and receptor binding study. 
*Neuropsychopharmacology. 27*, 949-59.

Neurocircuitry of addiction. 
*Neuropsychopharmacology, 35*, 217-38.
References


L


Neuroscience and biobehavioral reviews, 35, 1219–36.


M


Malone, D. a, Dougherty, D. D., Rezai, A. R., Carpenter, L. L., Friehs, G. M., Eskandar, E. N.,
Deep brain stimulation of the ventral capsule/ventral striatum for treatment-resistant depression.
Biological psychiatry, 65, 267-75.

The Role of Risk Avoidance in Anxiety.
Behavior Therapy 37, 181–9.

Smoking cessation and weight loss after chronic deep brain stimulation of the nucleus
accumbens: therapeutic and research implications: case report.
Neurosurgery 66, E218.

Altered Activation in Fronto-Striatal Circuits During Sequential Processing of Conflict in
Unmedicated Adults with Obsessive-Compulsive Disorder.
Biological psychiatry, 2013 Mar 12.

Neural activity related to the processing of increasing monetary reward in smokers and
non-smokers.

Lower level of endogenous dopamine in patients with cocaine dependence: findings from PET
imaging of D(2)/D(3) receptors following acute dopamine depletion.
Am J Psychiatry 166, 1170-1177.

Mataix-Cols D, Cullen S, Lange K, Zelaya F, Andrew C, Amaro E, Brammer MJ, Williams SC,
Neural Correlates of Anxiety Associated with Obsessive-Compulsive Symptom Dimensions in
Normal Volunteers.

Distinct neural correlates of washing, checking, and hoarding symptom dimensions in
obsessive-compulsive disorder.

Mazars, G. J. (1975).
Intermittent stimulation of nucleus ventralis posterolateralis for intractable pain.
Surgical Neurology, 4, 93-95.

How does deep brain stimulation work? Present understanding and future questions.
*Journal of clinical neurophysiology: official publication of the American Electroencephalographic Society, 21, 40–50.*

McIntyre, C.C. & Hahn, P.J. (2010).
Network perspectives on the mechanisms of deep brain stimulation.

Obsessive-Compulsive Neurosis Following Head Injury: A Report of Four Cases.
*Brit. J. Psychiatry*, 144, 190-192.


Integrating evidence from neuroimaging and neuropsychological studies of obsessive-compulsive disorder: the orbitofronto-striatal model revisited.
*Neuroscience and biobehavioral reviews*, 32, 525-49.

Brain functional connectivity in stimulant drug dependence and obsessive-compulsive disorder.

Neurobiology of basal ganglia circuits in Tourette syndrome: faulty inhibition of unwanted motor patterns?
*Advances in Neurology*, 85, 113-22.

Identification and Treatment of a Pineal Region Tumor in an Adolescent With Prodromal Psychotic Symptoms.

Essai d’un traitement chirurgical de certaines psychoses.

Mechanisms of action of deep brain stimulation (DBS).


Nielen MM, den Boer JA, Smid HG (2009). Patients with obsessive-compulsive disorder are impaired in associative learning based on
external feedback.  
*Psychol. Med 39, 1519-1526.*

Brainstem involvement in obsessive-compulsive disorder.  

Long-term Electrical Capsular Stimulation in Patients with Obsessive-Compulsive Disorder.  
*Neurosurgery, 52, 1263-1274.*

Electrical stimulation in anterior limbs of internal capsules in patients with obsessive-compulsive disorder.  
*Lancet 354, 1526.*

Neural responses during anticipation of a primary taste reward.  
*Neuron 33, 815–826.*

A right orbitofrontal region and OCD symptoms: A case report.  
*Acta Psychiatrica Scandinavica, 111, 74–76.*

Obsessive-Compulsive Behavior Disappearing after Left Capsular Genu Infarction.  
*Case Rep. Neurol., 1, 18-20.*

Deep brain stimulation in the internal capsule and nucleus accumbens region: responses observed during active and sham programming.  
*J Neurol Neurosurg Psychiatry 78, 310-314.*

Dopamine D1 receptor binding in the striatum of patients with obsessive-compulsive disorder.  
*J Affect Disord., 114, 321-6.*

Serotonin/dopamine interaction in learning.  
*Prog Brain Res 172, 567-602.*


References


A differential neural response in obsessive-compulsive disorder patients with washing compared with checking symptoms to disgust.
Psychol. Med. 30, 1037-1050.

Parkinson disease: pattern of functional MR imaging activation during deep brain stimulation of subthalamic nucleus—initial experience.
Radiology 239, 209-216.

Imaging serotonin and dopamine transporters with 123I-ß-CIT SPECT: binding kinetics and effects of normal aging.
J Nucl Med 41, 36–44.

Reduced caudate and nucleus accumbens response to rewards in unmedicated individuals with major depressive disorder.
Am J Psychiatry 166, 702-710.

SERT and DAT availabilities under citalopram treatment in obsessive-compulsive disorder (OCD).
Eur Neuropsychopharmacol. 15, 521-524.

Elevated brain serotonin transporter availability in patients with obsessive-compulsive disorder.

Symptom-specific EEG power correlations in patients with obsessive-compulsive disorder.

Should addictive disorders include non-substance-related conditions?
Addiction. 101(suppl 1), 142-151.

Neural Differentiation of Expected Reward and Risk in Human Subcortical Structures.
Neuron 51, 381–90.


Reduced anterior cingulate glutamatergic concentrations in childhood OCD and major depression versus healthy controls.


Rosenberg DR, MacMaster FP, Keshavan MS, Fitzgerald KD, Stewart CM, Moore (2000).
Decrease in caudate glutamatergic concentrations in paediatric obsessive-compulsive disorder patients taking paroxetine.

J Am Acad Child Adolesc Psychiatry 39, 1096–1103


Journal of Psychiatry & Neuroscience 33, 405-412.

Event-related functional magnetic resonance imaging of response inhibition in obsessive-compulsive disorder.

Biological psychiatry 62, 901–9

Generalized dystonia and obsessive-compulsive disorder associated with bilateral circumscribed magnetic resonance signal changes in the putamen.


Ruscio AM, Stein DJ, Chiu WT, Kessler RC (2010).
The epidemiology of obsessive-compulsive disorder in the National Comorbidity Survey Replication.

Mol Psychiatry. 15, 53-63.

Germinoma: unusual imaging and pathological characteristics. Report of two cases.


Association study between obsessive-compulsive disorder and serotonergic candidate genes.

Prog Neuropsychopharmacol Biol Psychiatry. 32, 765-70.
References


Predictive reward signal of dopamine neurons.
*J Neurophysiol.* 80, 1-27.

Maternal immune activation and strain specific interactions in the development of autism-like behaviors in mice.
*Translational psychiatry,* 3, e240.

Late-Life Obsessive-Compulsive Disorder and Huntington's Disease.

Deep brain stimulation of the nucleus accumbens shell increases impulsive behavior and tissue levels of dopamine and serotonin.
*Experimental Neurology* 225, 302-309.


Neuropsychiatry and SPECT of an Acute Obsessive-Compulsive Syndrome Patient.

A common role of insula in feelings, empathy and uncertainty.

Idiopathic basal ganglia calcification and pathological hoarding.

Serotonergic modulation of dopamine measured with [¹¹C]raclopride and PET in normal
human subjects.
Am J Psychiatry 154, 490–496

The neurobiological underpinnings of obesity and binge eating: a rationale for adopting
the food addiction model.
Biological psychiatry, 73(9), 804–10.

Deep Brain Stimulation Targeted at the Nucleus Accumbens Decreases the Potential for
Pathologic Network Communication.
Biological Psychiatry Apr 23.

A case of self-inflicted leucotomy.
Br. J. Psychiatry, 151, 855-870.

Selective serotonin re-uptake inhibitors (SSRIs) versus placebo for
obsessive compulsive disorder (OCD).

Spreckelmeyer KN, Krach S, Kohls G, Rademacher L, Irmak A, Konrad K, Kircher T,
Anticipation of monetary and social reward differently activates mesolimbic brain structures in
men and women.

A 1H magnetic resonance spectroscopy study in adults with obsessive compulsive disorder:
relationship between metabolite concentrations and symptom severity.
J Neural Transm. 115, 1051-62.

Dissociation of decisions in ambiguous and risky situations in obsessive–compulsive disorder.
Psychiatry Research. 175, 114–20.

Stein DJ, Fineberg NA, Bienvenu OJ, Denys D, Lochner C, Nestadt G, Leckman JF, Rauch SL,
Should OCD be classified as an anxiety disorder in DSM-V?
Depress Anxiety 27, 495-506

Deep brain stimulation for Parkinson’s disease dissociates mood and motor circuits: a functional
MRI case study.

*Mov Disord* 18, 1508-1516.


References

T


U


Psychiatry Res. 132, 225-237.

Brain, 132, 853-68.

Behav. Res. Ther., 41, 301-316.


Neuroscience and biobehavioral reviews, 34(1), 87–107.

Am. J. Psychiatry 161, 2201–2206.
References

Unilateral deep brain stimulation in the nucleus accumbens core does not affect local
monoamine release.
_J Neurosci Meth_ 202, 113-118.

Deep brain stimulation of the accumbens increases dopamine, serotonin, and noradrenaline in
the prefrontal cortex.

Deep brain stimulation affects conditioned and unconditioned anxiety in different brain areas.
_Translational Psychiatry_, 3, e289.

A delineation system for N modalities – software aspects (Extended Abstract).
_In Proceedings XIII International Conference on the Use of Computers in Radiation Therapy (XII ICCR)
(ed. W. Schlegel and T. Bortfelt), pp. 73–75. Springer-Verlag : Heidelberg, Germany._

Metabolic imaging of anterior capsular stimulation in refractory obsessive-compulsive disorder:
a key role for the subgenual anterior cingulate and ventral striatum.

Stereotactic treatment of Gilles de la Tourette syndrome by high frequency stimulation
of thalamus.
_Lancet_ 353, 724.

Bithalamic deep brain stimulation in Tourette syndrome is associated with reduction in
dopaminergic transmission.
_Biological Psychiatry_, 66, e15-17.

Activation of orbital and medial prefrontal cortex by methylphenidate in cocaine-addicted
subjects but not in controls: relevance to addiction.

Imaging dopamine’s role in drug abuse and addiction.
_Neuropharmacology_ 56, Suppl 1, 3–8.

Reward, dopamine and the control of food intake: implications for obesity.

Obesity and addiction: neurobiological overlaps.
*Obesity reviews : an official journal of the International Association for the Study of Obesity, 14*(1), 2–18.

Forced collectionism after orbitofrontal damage.
*Neurology, 58*, 488–490.

Modulation of affective symptoms and resting state activity by brain stimulation in a treatment-resistant case of obsessive-compulsive disorder.
*Neurocase* 19, 360-70.

Quetiapine augments the effect of citalopram in non-refractory obsessive-compulsive disorder: a randomized, double-blind, placebo-controlled study of 76 patients.
*J Clin Psychiatr* 70, 1001-1008.

W

Validity of large-deformation high dimensional brain mapping of the basal ganglia in adults in Tourette syndrome.
*Psychiatry Research, 154*, 181-90.

The neural circuits that generate tics in Tourette’s syndrome.

Short report: Transient feelings of compulsion caused by hemispheric lesions: three cases.

Focal Striatal Abnormalities in a Patient With Obsessive-Compulsive Disorder.
*Arch. Neurol., 46*, 233-235.

Late-Onset Obsessive-Compulsive Disorder: A Case Series.

Deep brain stimulation for hyperkinetics disorders: dystonia, tardive dyskinesia, and tics.
References


Westenberg HGM, Verhoeven WM (1988).
CSF monoamine metabolites in patients and controls: support for a bimodal distribution in major affective disorders.

Whiteside SP, Port JD, Deacon BJ, Abramowitz JS (2006).
A magnetic resonance spectroscopy investigation of obsessive-compulsive disorder and anxiety.
Psychiatry Res. 2006 Mar 31;146(2):137-47.

A meta-analysis of functional neuroimaging in obsessive-compulsive disorder.

A compulsive movement disorder with cavitation of caudate nucleus.

Mechanisms of dopaminergic and serotonergic neurotransmission in Tourette Syndrome: clues from an in vivo neurochemistry study with PET.
Neuropsychopharmacology 33, 1239–1251.

Brain activation in paediatric obsessive compulsive disorder during tasks of inhibitory control.
British J Psychiatry 192, 25–31

A unified statistical approach for determining significant signals in images of cerebral activation.
Human Brain Mapping, 4, 58–73.

X

The Impact of Prior Risk Experiences on Subsequent Risky Decision-Making: The Role of the Insula.
Neuroimage 50, 709–16

Y

Basal ganglia hemorrhagic ablation associated with temporary suppression of obsessive-compulsive symptoms.


Z


