

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Interventional procedures consultation document

Deep brain stimulation for chronic, severe, treatment-resistant obsessive-compulsive disorder in adults

Obsessive-compulsive disorder is a mental health condition in which a person has obsessive thoughts (repeated, unwanted and unpleasant thoughts, images or urges). The person feels the need to carry out compulsive (repetitive) behaviours to try to relieve the unpleasant feelings brought on by the obsessive thoughts. In this procedure, an electrode is put into the brain through 2 small holes in the skull and connected to a wire that is tunnelled under the skin behind the ear and down the neck. The wire is attached to an electrical stimulator that is put under the skin on the chest. The stimulator sends electric pulses to the brain (deep brain stimulation). The aim is to reduce the obsessive-compulsive thoughts and behaviours.

NICE is looking at deep brain stimulation for chronic, severe, treatment-resistant obsessive-compulsive disorder in adults.

NICE's interventional procedures advisory committee met to consider the evidence and the opinions of professional experts, who are consultants with knowledge of the procedure.

This document contains the [draft guidance for consultation](#). Your views are welcome, particularly:

- comments on the draft recommendations
- information about factual inaccuracies
- additional relevant evidence, with references if possible.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others.

This is not NICE's final guidance on this procedure. The draft guidance may change after this consultation.

After consultation ends, the committee will:

- meet again to consider the consultation comments, review the evidence and make appropriate changes to the draft guidance
- prepare a second draft, which will go through a [resolution process](#) before the final guidance is agreed.

Please note that we reserve the right to summarise and edit comments received during consultation or not to publish them at all if, in the reasonable opinion of NICE, there are a lot of comments or if publishing the comments would be unlawful or otherwise inappropriate.

Closing date for comments: 17 December 2020

Target date for publication of guidance: April 2021

1 Draft recommendations

- 1.1 Evidence on the safety and efficacy of deep brain stimulation for chronic, severe, treatment-resistant obsessive-compulsive disorder (OCD) in adults is inadequate in quality and quantity. Therefore, this procedure should only be used in the context of research. Find out [what only in research means on the NICE interventional procedures guidance page](#).
- 1.2 Patient selection should be done by a multidisciplinary team experienced in managing OCD. It should include experts in psychiatry, neuropsychiatry, clinical psychology, neurology, neurosurgery and deep brain stimulation.
- 1.3 The procedure should only be done in centres with expertise in deep brain stimulation and experience in managing OCD.
- 1.4 Further research should be primarily in the form of randomised controlled trials. It should clearly define the area of the brain that should be targeted in this procedure. It should also describe details

of patient selection, comorbidities, and use of adjunctive therapies. Outcomes should include reduction in OCD symptoms, improvement in quality of life and any neuropsychiatric and cognitive effects.

2 The condition, current treatments and procedure

The condition

- 2.1 Obsessive-compulsive disorder (OCD) is a mental health condition in which a person has obsessive thoughts (repeated, unwanted and unpleasant thoughts, images or urges). The person feels compelled to carry out compulsive (repetitive) behaviours to try to relieve the unpleasant feelings brought on by the obsessive thoughts.

Current treatments

- 2.2 [NICE's guideline on obsessive-compulsive disorder and body dysmorphic disorder](#) describes the treatment of OCD. Treatment options include psychological interventions and drug treatment (typically selective serotonin reuptake inhibitors).

The procedure

- 2.3 Deep brain stimulation for OCD is done under general or local anaesthesia. A stereotactic frame may be used. MRI or CT imaging, or both, are used to identify the target area of the brain (commonly, the anterior limb of the internal capsule). Two small holes are drilled in the skull and electrodes are implanted into the target area. The electrodes are connected to an implantable neurostimulator by leads, which are tunnelled under the skin of the neck and scalp. The neurostimulator is surgically placed into a subcutaneous pocket below the clavicle. Postoperative imaging is usually used to confirm the location of the electrodes. A handheld remote-control programming unit is used to turn the neurostimulator

on or off and adjust stimulation parameters to find the right level of stimulation.

- 2.4 Although the mechanisms of action of deep brain stimulation are not fully understood, the aim of the procedure is to reduce the obsessive-compulsive thoughts and behaviours. A potential advantage of the procedure is that the stimulation can be adjusted according to the clinical effect and if necessary, stopped completely. It can be used as an adjunct to medication and as an alternative to neurosurgery for treatment-resistant OCD.

3 Committee considerations

The evidence

- 3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 12 sources, which was discussed by the committee. The evidence included 2 randomised controlled trials (both of which are also included in at least 1 of the meta-analyses), 2 meta-analyses, 2 systematic reviews (most of the patients who had deep brain stimulation in these reviews are also included in the meta-analyses), 1 non-randomised controlled trial 4 case series and 1 case report. It is presented in [table 2 in the interventional procedures overview](#). Other relevant literature is in the appendix of the overview.
- 3.2 The professional experts and the committee considered the key efficacy outcomes to be: improvement in obsessive-compulsive disorder (OCD) symptoms and quality of life.
- 3.3 The professional experts and the committee considered the key safety outcomes to be: intracranial bleeding, infection, damage to adjacent brain structures, seizures, suicidal ideation, mood

changes including hypomania, and other psychiatric and cognitive effects.

- 3.4 Four commentaries from patients who have had this procedure were discussed by the committee.

Committee comments

- 3.5 The committee noted that many of the patients included in the studies had OCD for many years before having deep brain stimulation.
- 3.6 The committee was informed that there is a national network of clinicians with expertise in OCD, and experts from this group are consulted when people are referred for this procedure.
- 3.7 The committee was informed that this procedure might be an alternative to stereotactic ablative surgery.
- 3.8 The committee was informed that the safety profile of this procedure was similar to the safety profile of deep brain stimulation for other indications.
- 3.9 The committee was pleased to receive commentary from patients who had the procedure. These commentaries supported the use of the procedure.

Tom Clutton-Brock

Chair, interventional procedures advisory committee

November 2020

ISBN: