

Luyck et al., recently showed that deep brain stimulation (DBS) in the bed nucleus of the stria terminalis (BST) reduces obsessions, compulsions and associated anxiety in patients suffering from severe, treatment-refractory obsessive compulsive disorder. They investigated the anxiolytic effects of electrical BST stimulation in a rat model of conditioned anxiety, unrelated to obsessions or compulsions. Two sets of stimulation parameters were evaluated. Using fixed settings at 100 Hz, 40 μ s and 300 μ A (Set A), they observed elevated freezing and startle levels, whereas stimulation at 130 Hz, 220 μ s and individually tailored amplitudes (Set B) appeared to reduce freezing. In a follow-up experiment, they evaluated the anxiolytic potential of Set B more extensively, by adding a lesion group and an additional day of stimulation. They found that electrical stimulation significantly reduced freezing, but not to the same extent as lesions. Neither lesions nor stimulation of the BST affected motor behavior or unconditioned anxiety in an open-field test. In summary, electrical stimulation of the BST was successful in reducing contextual anxiety in a rat model, without eliciting unwanted motor effects. The findings underline the therapeutic potential of DBS in the BST for disorders that are hallmarked by pathological anxiety. Further research will be necessary to assess the translatability of these findings to the clinic ¹.

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Luyck K, Tambuyzer T, Deprez M, Rangarajan J, Nuttin B, Luyten L. Electrical stimulation of the bed

nucleus of the stria terminalis reduces anxiety in a rat model. Transl Psychiatry. 2017 Feb 14;7(2):e1033. doi: 10.1038/tp.2017.2. PubMed PMID: 28195571.

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