



αDBS **System**

Clinical Scientific References - October 2022

- Adaptive DEEP BRAIN STIMULATION for Parkinson's Disease
- AlphaDBS® system
- Basal Ganglia Local Field Potentials in Parkinsons's Disease

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The Publications

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References

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References

- Marceglia S, Conti C, Svanidze O, Foffani G, Lozano AM, Moro E, Volkmann J, Arlotti M, Rossi L, Priori A. Double-blind cross-over pilot trial protocol to evaluate the safety and preliminary efficacy of long-term adaptive deep brain stimulation in patients with Parkinson's disease. *BMJ Open*. 2022 Jan 3;12(1):e049955. doi: 10.1136/bmjopen-2021-049955. PMID: 34980610; PMCID: PMC8724732.
- Prenassi M, Arlotti M, Borellini L, Bocci T, Cogiamanian F, Locatelli M, Rampini P, Barbieri S, Priori A, Marceglia S. The relationship between electrical energy delivered by deep brain stimulation and levodopa-induced dyskinesias in Parkinson's disease: a retrospective preliminary analysis. *Frontiers in Neurology*. 2021;9:903.
- Arlotti M, Colombo M, Bonfanti A, Mandat T, Lanotte MM, Pirola E, Borellini L, Rampini P, Eleopra R, Rinaldo S, Romito L, Janssen MLF, Priori A, Marceglia S. A New Implantable Closed-Loop Clinical Neural Interface: First Application in Parkinson's Disease. *Front Neurosci*. 2021 Dec 7;15:763235. doi: 10.3389/fnins.2021.763235. PMID: 34949982; PMCID: PMC8689059.
- Marceglia S, Guidetti M, Harmsen IE, Loh A, Meoni S, Foffani G, Lozano AM, Volkmann J, Moro E, Priori A. Deep brain stimulation: is it time to change gears by closing the loop? *J Neural Eng*. 2021 Nov 16;18(6). doi: 10.1088/1741-2552/ac3267. PMID: 34678794.
- Guidetti M, Marceglia S, Loh A, Harmsen IE, Meoni S, Foffani G, Lozano AM, Moro E, Volkmann J, Priori A. Clinical perspectives of adaptive deep brain stimulation. *Brain Stimul*. 2021 Sep-Oct;14(5):1238-1247. doi: 10.1016/j.brs.2021.07.063. Epub 2021 Aug 8. PMID: 34371211.
- Bocci T, Prenassi M, Arlotti M, Cogiamanian FM, Borellini L, Moro E, Lozano AM, Volkmann J, Barbieri S, Priori A, Marceglia S. Eight-hours conventional versus adaptive deep brain stimulation of the subthalamic nucleus in Parkinson's disease. *npj Parkinson's Disease*. 2021 Sep 28;7(1):1-6.
- Priori A, Maiorana N, Dini M, Guidetti M, Marceglia S, Ferrucci R. Adaptive deep brain stimulation (aDBS). *Int Rev Neurobiol*. 2021;159:111-127. doi: 10.1016/bs.irn.2021.06.006. Epub 2021 Jul 27. PMID: 34446243.
- Arlotti M, Marceglia S, Foffani G, Volkmann J, Lozano AM, Moro E, Cogiamanian F, Prenassi M, Bocci T, Cortese F, Rampini P, Barbieri S, Priori A. Eight-hours adaptive deep brain stimulation in patients with Parkinson disease. *Neurology*. 2018 Mar 13;90(11):e971-e976. doi: 10.1212/WNL.0000000000005121. Epub 2018 Feb 14. PMID: 29444973; PMCID: PMC5858949.
- Arlotti M, Rossi L, Rosa M, Marceglia S, Priori A. An external portable device for adaptive deep brain stimulation (aDBS) clinical research in advanced Parkinson's Disease. *Med Eng Phys*. 2016 May;38(5):498-505.
- Marceglia S, Rosa M, Servello D, Porta M, Barbieri S, Moro E, Priori A. Adaptive Deep Brain Stimulation (aDBS) for Tourette Syndrome. *Brain Sci*. 2017 Dec 23;8(1):4. doi: 10.3390/brainsci8010004. PMID: 29295486; PMCID: PMC5789335.
- Arlotti M, Rosa M, Marceglia S, Barbieri S, Priori A. The adaptive deep brain stimulation challenge. *Parkinsonism Relat Disord*. 2016 Apr 2. pii: S1353-8020(16)30074-8. doi: 10.1016/j.parkreldis.2016.03.020.
- Foani G, Ardolino G, Rampini P, Tamma F, Caputo E, Egidi M, Cerutti S, Barbieri S, Priori A. Physiological recordings from electrodes implanted in the basal ganglia for deep brain stimulation in Parkinson's disease. the relevance of fast subthalamic rhythms. *Acta Neurochir Suppl*. 2005;93:97-9.
- Foani G, Bianchi AM, Priori A, Baselli G. Adaptive autoregressive identification with spectral power decomposition for studying movement-related activity in scalp EEG signals and basal ganglia local field potentials. *J Neural Eng*. 2004 Sep;1(3):165-73.
- Foani G, Priori A, Egidi M, Rampini P, Tamma F, Caputo E, Moxon KA, Cerutti S, Barbieri S. 300-Hz subthalamic oscillations in Parkinson's disease. *Brain*. 2003 Oct;126(Pt 10):2153-63.
- Fumagalli M, Giannicola G, Rosa M, Marceglia S, Lucchiani C, Mrakic-Sposta S, Servello D, Pacchetti C, Porta M, Sassi M, Zangaglia R, Franzini A, Albanese A, Romito L, Piacentini S, Zago S, Pravettoni G, Barbieri S, Priori A. Conict-dependent dynamic of subthalamic nucleus oscillations during moral decisions. *Soc Neurosci*. 2011;6(3):243-56.
- Giannicola G, Marceglia S, Rossi L, Mrakic-Sposta S, Rampini P, Tamma F, Cogiamanian F, Barbieri S, Priori A. The effects of levodopa and ongoing deep brain stimulation on subthalamic beta oscillations in Parkinson's disease. *Exp Neurol*. 2010 Nov;226(1):120-7.
- Giannicola G, Rosa M, Servello D, Menghetti C, Carrabba G, Pacchetti C, Zangaglia R, Cogiamanian F, Scelzo E, Marceglia S, Rossi L, Priori A. Subthalamic local field potentials after seven-year deep brain stimulation in Parkinson's disease. *Exp Neurol*. 2012 Oct;237(2):312-7.
- Giannicola G, Rosa M, S. Marceglia, Scelzo E, Rossi L, Servello D, Menghetti C, Pacchetti C, Zangaglia R, Locatelli M, Caputo E, Cogiamanian F, Ardolino G, Barbieri S, Priori A. The Effects of Levodopa and Deep Brain Stimulation on Subthalamic Local Field Low-Frequency Oscillations in Parkinson's Disease. *Neurosignals* 2013;21:89-98 - DOI:10.1159/000336543
- Giannicola G, Rosa M, S. Marceglia, Scelzo E, Rossi L, Servello D, Menghetti C, Pacchetti C, Zangaglia R, Locatelli M, Caputo E, Cogiamanian F, Ardolino G, Barbieri S, Priori A. The Effects of Levodopa and Deep Brain Stimulation on Subthalamic Local Field Low-Frequency Oscillations in Parkinson's Disease. *Neurosignals* 2013;21:89-98 - DOI:10.1159/000336543
- Giannicola G, Rosa M, S. Marceglia, Scelzo E, Rossi L, Servello D, Menghetti C, Pacchetti C, Zangaglia R, Locatelli M, Caputo E, Cogiamanian F, Ardolino G, Barbieri S, Priori A. The Effects of Levodopa and Deep Brain Stimulation on Subthalamic Local Field Low-Frequency Oscillations in Parkinson's Disease. *Neurosignals* 2013;21:89-98 - DOI:10.1159/000336543
- Little S, Pogosyan A, Neal S, Zavala B, Zrinzo L, Hariz M, Foltyne T, Limousin P, Ashkan K, Fitzgerald J, Green AL, Aziz TZ, Brown P. Adaptive deep brain stimulation in advanced Parkinson disease. *Ann Neurol*. 2013 Sep;74(3):449-57.
- Arlotti M, Rosa M, Marceglia S, Barbieri S, Priori A. The adaptive deep brain stimulation challenge. *Parkinsonism Relat Disord*. 2016 Apr 2. pii: S1353-8020(16)30074-8. doi: 10.1016/j.parkreldis.2016.03.020.
- Little S, Beudel M, Zrinzo L, Foltyne T, Limousin P, Hariz M, Neal S, Chearan B, Cagnan H, Gratwick J, Aziz TZ, Pogosyan A, Brown P. Adaptive deep brain stimulation in advanced Parkinson disease. *Ann Neurol*. 2013 Sep;74(3):449-57.
- Marceglia S, Bianchi AM, Baselli G, Tamma F, Egidi M, Priori A. Dopamine-dependent non-linear correlation between subthalamic rhythms in Parkinson's disease. *J Physiol*. 2006 Mar 15;571(Pt 3):579-91.
- Marceglia S., Fumagalli M., Priori A. What neurophysiological recordings tell us about cognitive and behavioral functions of the human subthalamic nucleus. *Expert Rev Neurother*. 2011 Jan;11(1):139-49.
- Marceglia S, Rossi L, Foffani G, Bianchi AM, Cerutti S, Priori A. Basal ganglia local field potentials: applications in the development of new deep brain stimulation devices for movement disorders. *Expert Rev Med Devices* 2007 4(5): 605-614.
- Priori A, Ardolino G, Marceglia S, Mrakic-Sposta S, Locatelli M, Tamma F, Rossi L, Foffani G. Low-frequency subthalamic oscillations increase after deep brain stimulation in Parkinson's disease. *Brain Res Bull*. 2006 Dec 11;71(1-3):149-54.
- Priori A, Foffani G, Pesenti A, Tamma F, Bianchi AM, Pellegrini M, Locatelli M, Moxon KA, Villani RM. Rhythm-specific pharmacological modulation of subthalamic activity in Parkinson's disease. *Exp Neurol*. 2004 Oct;189(2):369-79.

The Publications

- Priori A, Foffani G, Pesenti A, Bianchi A, Chiesa V, Baselli G, Caputo E, Tamma F, Rampini P, Egidi M, Locatelli M, Barbieri S, Scarlato G. Movement-related modulation of neural activity in human basal ganglia and its L-DOPA dependency: recordings from deep brain stimulation electrodes in patients with Parkinson's disease. *Neurology Sci.* 2002 Sep;23 Suppl 2:S101-2.
- Priori A, Foffani G, Rossi L. Apparatus for treating neurological disorders by means of adaptive electro-stimulation retroacted by biopotentials. European Patent EP1940508 - U.S. Patent No. 8,078,281 Israel Patent n.191068
- Priori A, Foffani G, Rossi L, S. Marceglia. Adaptive deep brain stimulation (aDBS) controlled by local field potential oscillations. *Exp Neurol* 2013; 245:77-86.
- Rosa M, Arlotti M, Ardolino G, Cogiamanian F, Marceglia S, Di Fonzo A, Cortese F, Rampini PM, Priori A. Adaptive deep brain stimulation in a freely moving Parkinsonian patient. *Mov Disord.* 2015 Jun;30(7):1003-5.
- Rosa M, Arlotti M, Marceglia S, Cogiamanian F, Ardolino G, Fonzo AD, Lopiano L, Scelzo E, Merola A, Locatelli M, Rampini PM, Priori A. Adaptive deep brain stimulation controls levodopa-induced side effects in Parkinsonian patients. *Mov Disord.* 2017 Apr;32(4):628-629. doi: 10.1002/mds.26953. Epub 2017 Feb 17. No abstract available. PMID: 28211585.
- Rosa M, Fumagalli M, Giannicola G, Marceglia S, Lucchiari C, Servello D, Franzini A, Pacchetti C, Romito L, Albanese A, Porta M, Pravettoni G, Priori A. Pathological gambling in Parkinson's disease: subthalamic oscillations during economics decisions. *Mov Disord.* 2013 Oct;28(12):1644-52.
- Rosa M, Giannicola G, Servello D, Marceglia S, Pacchetti C, Porta M, Sassi M, Scelzo E, Barbieri S, Priori A. Subthalamic local field beta oscillations during ongoing deep brain stimulation in Parkinson's disease in hyperacute and chronic phases. *Neurosignals.* 2011;19(3):151-62.
- Rosa M, Giannicola G, S. Marceglia, Fumagalli M, Barbieri S, Priori A. Neurophysiology of deep brain stimulation. *Int Rev Neurobiol.* 2012;107:23-55.
- Rosa M, Marceglia S, Servello D, Foffani G., Rossi L., Sassi M., Mrakic-Sposta S., Zangaglia R., Pacchetti C,
- Porta M., Priori A.. Time dependent Subthalamic Local Field Potential Changes after DBS Surgery in Parkinson's disease. *Exp Neurol.* 2010 Apr;222(2):184-90.
- Rossi L., Foffani G., Marceglia S., Bracchi F., Barbieri S., Priori A. An electronic device for artefact suppression in human local field potential recordings during deep brain stimulation. *J Neural Eng* 2007. 4:96-106.
- Rossi L., Marceglia S., Foffani G., Cogiamanian F., Tamma F., Rampini P., Barbieri S., Bracchi F., Priori A..Subthalamic local field potential oscillations during ongoing deep brain stimulation in Parkinson's disease. *Brain Res Bull.* 2008;76(5):512-21.

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