

# DBS international academy at TWH

Training Center for Deep Brain Stimulation at  
Toronto Western Hospital – UHN

Day 1 – Monday October 29, 2018

Time	Program Title
9:00 – 9:15	<b>Welcome and Course Introduction</b> <i>Dr. Fasano and Dr. Lozano</i>
9:15 – 10:00	<b>Diagnosis and non-surgical treatment of Movement Disorders</b> <i>Dr. Lang</i>
10:00 – 10:30	<b>Brief History of Functional Neurosurgery</b> <i>Dr. Lang</i>
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 11:30	<b>General Principle of DBS, Mechanism of Action and Functional Considerations</b> <i>Dr. Hutchison</i>
11:30 – 12:00	<b>Organizing a DBS Team (patients' flow)</b> <i>Mr. Alejandro Valencia</i>
12:00 – 13:00	<b>Lunch</b>
13:00 – 13:45	<b>Inclusion and Exclusion Criteria for Surgery (Parkinson's disease, tremor and dystonia)</b> <i>Dr. Munhoz</i>
13:45 – 14:30	<b>Neuropsychological Evaluation</b> <i>Dr. Cohn</i>
14:30 – 15:00	<b>Coffee Break</b>
15:00 – 15:45	<b>Psychiatric Evaluation, Psychiatric and Psychosocial Consideration After DBS</b> <i>Dr. Zurowski</i>
15:45 – 16:15	<b>My Life After DBS</b> <i>Patient</i>

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Day 2 – Tuesday October 30, 2018

Time	Program Title
9:00 – 9:45	<b>Intra-operative Microrecordings, Micro- and Macro-Stimulation (+ anaesthesiological considerations)</b> <i>Dr. Hutchison</i>
9:45 – 10:30	<b>Initial Programming for PD</b> <i>Dr. Munhoz</i>
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:30	<b>LIVE Programming of a PD Patient, 1</b> <i>Dr. Munhoz and Mr. Valencia</i>
12:30 – 13:30	<b>Lunch</b>
13:30 – 13:45	<b>LIVE Programming of a PD Patient, 2 (effect of L-dopa)</b> <i>Dr. Munhoz and Mr. Valencia</i>
13:45 – 14:30	<b>Peri-operative pharmaceutical management, Initial and Subsequent Medication Adjustment after DBS (including the management of disease progression, e.g. falls, dementia)</b> <i>Dr. Munhoz</i>
14:30 – 15:00	<b>Coffee Break</b>
15:00 – 15:45	<b>Initial Programming for Dystonia</b> <i>Dr. Fasano</i>
15:45 – 17:00	<b>LIVE Programming of a Dystonia Patient</b> <i>Dr. Fasano and Mr. Valencia</i>

## PARALLEL SESSION FOR NEUROSURGEONS

Time	Program Title
9:00 – 9:45	<b>Targeting Procedures and Intra-operative Surgical Procedures (including wires tunnelling and frameless systems)</b> <i>Dr. Kalia</i>
9:45 – 10:30	<b>Surgical Adverse Event (risk factors and management)</b> <i>Dr. Kalia</i>
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:00	<b>Video of Live Surgery</b> <i>Dr. Lozano</i>
12:00 – 12:30	<b>Q&amp;A</b> <i>Drs Lozano and Kalia</i>

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Day 3 – Wednesday October 31, 2018

Time	Program Title
9:00 – 9:30	<b>LIVE Meeting a DBS Candidate and Levodopa Challenge, 1</b> <i>Mr Valencia</i>
9:30 – 10:15	<b>Hardware Troubleshooting</b> <i>Dr. Hodaie</i>
10:15 – 10:30	<b>LIVE Meeting a DBS Candidate and Levodopa Challenge, 2</b> <i>Mr Valencia</i>
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 11:30	<b>Initial Programming for Tremor</b> <i>Dr. Fasano</i>
11:30 – 12:15	<b>LIVE Programming a Tremor Patient</b> <i>Dr. Fasano and Mr. Valencia</i>
12:15 – 12:30	<b>Use of the Remote Control</b> <i>Mr. Alejandro Valencia</i>
12:30 – 13:30	<b>Lunch</b>
13:30 – 14:15	<b>Short and Long-Term Outcome in Tremor</b> <i>Dr. Fasano</i>
14:15 – 14:45	<b>Coffee Break</b>
14:45 – 17:00	<b>Programming Pitfalls and Managing of Stimulation-Induced Side Effects</b> <i>Dr. Fasano and Dr. Munhoz</i>

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Day 4 – Thursday November 1, 2018

Time	Program Title
9:00 – 9:30	<b>LIVE Programming a PD Patient, 3</b> <i>Dr. Munhoz and Mr. Valencia</i>
9:30 – 10:00	<b>LIVE Programming of a Dystonia Patient, 2</b> <i>Dr. Munhoz and Mr. Valencia</i>
10:00 – 10:30	<b>Short and Long-Term Outcome in Dystonia</b> <i>Dr. Munhoz</i>
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 11:30	<b>DBS and neuroimaging (safety of MRI, etc...)</b> <i>Dr. Mandell</i>
11:30 – 12:00	<b>Battery issues and charging systems</b> <i>Mr. Valencia</i>
12:30 – 13:30	<b>Lunch</b>
13:30 – 14:30	<b>Short and Long-Term Outcome in PD</b> <i>Dr. Fasano</i>
14:30 – 15:00	<b>Coffee Break</b>
15:00 – 15:30	<b>LIVE FU Visit of a PD Patient</b> <i>Dr. Fasano and Mr. Valencia</i>
15:30 – 16:00	<b>LIVE FU Visit of a Tremor Patient</b> <i>Dr. Fasano and Mr. Valencia</i>
16:00 – 16:30	<b>LIVE FU Visit a Dystonia Patient</b> <i>Dr. Fasano and Mr. Valencia</i>

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Day 5 – Friday November 2, 2018

Time	Program Title
9:00 – 9:45	<b>DBS in Other Movement Disorders (Tourette, ataxia, etc...)</b> <i>Dr. Munhoz</i>
9:45 – 10:30	<b>New Targets (PPN, Zi) and technology (adaptive stimulation, new electrodes) for DBS</b> <i>Dr. Fasano</i>
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:00	<b>New Indications and the Future of DBS</b> <i>Dr. Lozano</i>
12:00 – 12:15	<b>Concluding Remarks and Evaluation Questionnaire</b> <i>Dr. Fasano and Dr. Lozano</i>
12:15 – 13:15	<b>Lunch and Goodbye</b>

Table 1 Learning objectives

<b>Topic</b>	<b>Description</b>
<b>DBS overview</b>	Indications, mechanism of action, system component, battery types
<b>Patients selection</b>	Pre-operative evaluations, patient counselling
<b>Targets selection</b>	Basal ganglia anatomy and circuitry, STN, GPi, Vim, others
<b>Operative considerations</b>	Frame vs. frameless, MER, intra-operative stimulation, MRI guidance, optimal location in target
<b>1<sup>st</sup> programming session</b>	Step by step, microlesion effect, impedances, assessing effects of DBS
<b>Physics/electrophysiology</b>	Shaping the field, battery voltage thresholds, constant current vs. constant voltage, short vs. open circuit
<b>Follow-up programming</b>	Step by step, medication adjustment
<b>Troubleshooting problems in DBS</b>	Case based
<b>Long-term management issues</b>	Disease specific, setting patient control parameters, IPG exchange
<b>DBS safety</b>	MRI, contraindications/precautions
<b>Battery issues</b>	Different types, setting patient control parameters, IPD exchange
<b>Practice management</b>	Billing and coding, documentation, DBS “team”