

**Pan American Movement Disorders Clinical Neurophysiology Course**  
**Toronto, Canada · May 1-3, 2025**

**DAY 1**

Session 1: Overview of Clinical Neurophysiology in Movement Disorders		
8:20 - 8:30	Welcome from Course Directors	
8:30 - 8:50	Neurophysiology: An Extension of Clinical Assessment to Categorize Movement Disorders <i>Robert Chen</i> – Toronto, Canada	
8:50 - 8:55	Moderated Question and Answer	
8:55 - 9:15	Overview of Basic and Advanced Neurophysiological Techniques <i>Talyta Grippe</i> – Toronto, Canada	
9:15 - 9:20	Moderated Question and Answer	
9:10 – 9:40	First steps to set up a Movement Disorders Neurophysiology lab: Which equipment do I need and How to do initial signal processing? <i>Marcus Callister</i> – Toronto, Canada <i>Felipe Vial</i> – Santiago, Chile	
9:50 - 10:00	Moderated Question and Answer	
10:00 – 10:30	COFFEE BREAK	
Session 2: Jerky Movements		
10:30-10:50	Clinical Neurophysiology to Differentiate Jerky Movements – Basic physiology <i>Robert Chen</i> – Toronto, Canada	
10:50– 10:55	Moderated Question and Answer	
10:55-11:15	Clinical Neurophysiology for Myoclonus: Different subtypes <i>Specific physiology for diagnosis of each subtype</i> <i>Shabbir Merchant</i> – Boston, USA	
11:15 – 11:20	Moderated Question and Answer	
11:20 – 12:00	Myoclonus: Clinical cases (interactive with the participants) <i>Christos Ganos</i> – Toronto, Canada <i>Nicolas Phielipp</i> – Irvine, USA	
12:00 - 12:10	Moderated Question and Answer	
12:10 – 13:00	LUNCH BREAK	
Break out Session: Jerky Movements		
Participants divided into four groups of 10		
	Hands-on Session with Patients/Healthy participant demonstration EMG + EEG – DATA COLLECTION All Faculty	Workshop Back Averaging and ERD (brief lecture with demonstration) Participant works on computer for data analysis COMPUTER WORK – DATA ANALYSIS All Faculty

13:00 – 13:30	Jerky movements – patient 1 <b>Group A</b> (9 <sup>th</sup> Floor)	Jerky movements – patient 2 <b>Group B</b> (12 <sup>th</sup> Floor)	<b>Group C &amp; Group D</b> ( 9 <sup>th</sup> Floor – Conference room)
13:30 – 14:00	Jerky movements – patient 2 – <b>Group A</b> (12 <sup>th</sup> Floor)	Jerky movements – patient 1 <b>Group B</b> (9 <sup>th</sup> Floor)	
14:00 – 14:30	Jerky movements – healthy demonstration – <b>Group A</b> (9 <sup>th</sup> Floor)	Jerky movements – healthy demonstration - <b>Group B</b> (9 <sup>th</sup> Floor)	
14:30 – 15:00	<b>TEA BREAK</b>		
	<b>Hands-on Session with Patients</b> All Faculty		<b>Workshop Back Averaging</b> (brief lecture with demonstration) <i>Participant works on computer for data analysis</i> All Faculty
15:00 – 15:30	Jerky movements – patient 1 <b>Group C</b> (9 <sup>th</sup> Floor)	Jerky movements – patient 2 <b>Group D</b> (12 <sup>th</sup> Floor)	<b>Group A &amp; Group B</b> ( 9 <sup>th</sup> Floor – Conference room)
15:30 – 16:00	Jerky movements – patient 2 – <b>Group C</b> (12 <sup>th</sup> Floor)	Jerky movements – patient 1 <b>Group D</b> (9 <sup>th</sup> Floor)	
16:00 – 16:30	Jerky movements – healthy demonstration – <b>Group C</b> (9 <sup>th</sup> Floor)	Jerky movements – healthy demonstration - <b>Group D</b> (9 <sup>th</sup> Floor)	
16:30 – 16:45	<b>Closing Remarks</b>		
18:00 – 21:00	<b>Dinner and Case presentation</b> Venue: DoubleTree by Hilton Hotel Toronto Downtown (Victoria Ballroom) 108 Chestnut Street, Toronto, Ontario, M5G1R3, Canada		

## DAY 2

Session 1: Clinical Neurophysiology of Tremor			
8:30-8:55	Clinical Neurophysiology to Differentiate tremor physiology Basic physiology (peripheral vs. central) <i>Felipe Vial</i> – Santiago, Chile		
8:55 – 9:00	Moderated Question and Answer		
9:00-9:25	Clinical Neurophysiology to Differentiate different types of tremors <i>Specific physiology for diagnosis of each subtype</i> <i>Panagiotis Kassavetis</i> – Washington, USA		
9:25-9:30	Moderated Question and Answer		
9:30– 10:10	Tremor: Different subtypes and Clinical Cases (interactive with the participants) <i>Katherine Longardner</i> – San Diego, USA <i>Marcus Callister</i> – Toronto, Canada		
10:10-10:20	Moderated Question and Answer		
10:20-10:40	COFFEE BREAK		
Session 2: Clinical Neurophysiology of other hyperkinetic disorders			
10:40–11:10	Clinical Neurophysiology of other hyperkinetic movement disorders <i>Karlo Lizarraga</i> – Rochester, USA		
11:10 – 11:15	Moderated Question and Answer		
11:15 – 11:55	Clinical Cases of other hyperkinetic disorders (interactive with the participants) <i>Christos Ganos</i> – Toronto, Canada <i>Talyta Grippe</i> – Toronto, Canada		
11:40-12:00	Moderated Question and Answer		
12:00 – 13:00	LUNCH BREAK		
Break out Session: Tremor			
Participants divided into four groups of 10			
	Hands-on Session with Patients <i>Data collection</i> All Faculty		Workshop: Use of electrophysiology to study tremor <i>(brief lecture with demonstration)</i> <i>Participant works on computer for data analysis</i> All Faculty
13:00 – 13:30	Tremor – patient 1 <b>Group A</b> (9 <sup>th</sup> Floor)	Tremor – patient 2 <b>Group B</b> (12 <sup>th</sup> Floor)	<b>Group C &amp; Group D</b> ( 9 <sup>th</sup> Floor – Conference room)
13:30 – 14:00	Tremor – patient 2 <b>Group A</b> (12 <sup>th</sup> Floor)	Tremor – patient 1 <b>Group B</b> (9 <sup>th</sup> Floor)	
14:00 – 14:30	Tremor – healthy demonstration <b>Group A</b> (9 <sup>th</sup> Floor)	Tremor – healthy demonstration <b>Group B</b> (9 <sup>th</sup> Floor)	

14:30 – 15:00	TEA BREAK		
	Hands-on Session with Patients All Faculty		Workshop: Use of electrophysiology to study tremor (brief lecture with demonstration) Participant works on computer for data analysis All Faculty
15:00 – 15:30	Tremor – patient 1 Group C (9 <sup>th</sup> Floor)	Tremor – patient 2 Group D (12 <sup>th</sup> Floor)	Group A & Group B ( 9 <sup>th</sup> Floor – Conference room)
15:30 – 16:00	Tremor – patient 2 Group C (12 <sup>th</sup> Floor)	Tremor – patient 1 Group D (9 <sup>th</sup> Floor)	
16:00 – 16:30	Tremor – healthy demonstration Group C (9 <sup>th</sup> Floor)	Tremor – healthy demonstration Group D (9 <sup>th</sup> Floor)	
16:20– 16:30	Closing Remarks		

### DAY 3

Session: Advanced uses of neurophysiology studies in treatment: DBS and Botulinum toxin injections	
8:30 – 9:00	<b>Use of EMG and ultrasound for dystonia treatment</b> <i>Shabbir Merchant</i> – Boston, USA <i>Talyta Grippe</i> – Toronto, Canada
9:00 - 9:05	<b>Moderated Question and Answer</b>
9:05 - 9:35	<b>Patient demonstration – use of EMG for limb dystonia (2 cases – interactive with the participants)</b> <i>Robert Chen</i> – Toronto, Canada <i>Marcus Callister</i> – Toronto, Canada
9:35 – 9:45	<b>Moderated Question and Answer</b>
9:45 -10:00	<b>COFFEE BREAK</b>
10:00 – 10:30	<b>The Role of Neurophysiological Measurements in Clinical Practice: An Ally for Effective DBS Treatment</b> <i>Alfonso Fasano</i> – Toronto, Canada
10:30 – 11:00	<b>Challenges in Managing Dystonia: Case Discussions (2 cases)</b> <i>Panagiotis Kassavetis</i> – Washington, USA <i>Karlo Lizarraga</i> – Rochester, USA
11:00 -11:05	<b>Moderated Question and Answer</b>
11:05 - 11:55	<b>Patient demonstration – use of ultrasound for botulinum toxin injections (hands on with healthy participants)</b> <i>Panagiotis Kassavetis</i> – Washington, USA <i>Shabbir Merchant</i> – Boston, USA
11:55 - 12:05	<b>Moderated Question and Answer</b>
12:05 – 12:15	<b>Closing Remarks and Evaluation</b>