



University of Toronto

From the Selected Works of Gustavo Saposnik

2020

CV_Abridged_NIH format

Gustavo Saposnik



Available at: https://works.bepress.com/gustavo_saposnik/113/

BIOGRAPHICAL SKETCH



GUSTAVO SAPOSNIK
MD, MPH, PhD, FRCPC

POSITION TITLES

- Associate Professor, Division of Neurology, U of Toronto
- Scientist, Li Ka Shing Knowledge Institute & ICES
- Director, Outcomes & Decision Neuroscience Research Unit
- Staff Neurologist, St Michael's Hospital – U of Toronto
- Editor, World Stroke Academy for the World Stroke Org.

EDUCATION/TRAINING

INSTITUTION AND LOCATION	YEAR	DEGREE	FIELD OF STUDY
University of Buenos Aires (UBA), Argentina	1990	MD	Medicine
University of Buenos Aires (UBA), Argentina	1996	MD Specialist	Neurology
UBA / Harvard School of Public Health	2003	MPH	Clinical Effectiveness
Royal College of Physicians of Canada	2011	Certification	FRCPC
University of Zurich, Department of Economics	2020	PhD (Honors)	Neuroeconomics/Decision making

A. Personal Statement

Dr. Gustavo Saposnik is a scientist, stroke neurologist, and Associate Professor of Medicine at the University of Toronto, Canada. Gustavo has a **global perspective** with specific interest in cardiovascular health, decision neuroscience, and stroke care. His vision is improving clinical outcomes through cost-effective, high impact, and innovative strategies by applying concepts from Neuroeconomics integrated within existing clinical care services Worldwide. Gustavo 's team developed different technologies of applications, tools and educational interventions: i) the iSCORE (risk prognostic tool to estimate ischemic stroke outcomes and response to tPA), ii) web platform to evaluate physicians therapeutic decisions, among others (www.sorcan.ca/iscore), iii) The traffic light system educational intervention to overcome therapeutic inertia. Following his PhD in Decision Neuroscience (Neuroeconomics) at the University of Zurich, Gustavo gained experience and developed a platform to investigate how colleague physicians, allied health professionals and patients make decisions. Gustavo's strategy is **applying concepts from behavioral economics/Neuroeconomics into health care**. He realized that most clinicians do not have formal training in risk management and education in decision-making. His team developed and implemented educational interventions to optimize therapeutic decisions and ameliorate therapeutic inertia. **Gustavo's recent thesis was about how physicians handle uncertainty based on the exemplary work on the Foundations of Therapeutic Inertia**. To accomplish these goals, Gustavo funded and leads two large research teams: i) the **Stroke Outcomes Research group**, a National & International multidisciplinary collaborative network of scientists (www.sorcan.ca) with interest in cerebrovascular diseases, and ii) **NeuroEconSolutions**: a multidisciplinary group with expertise in decision neuroscience (neuroeconolutions.com). Gustavo's **international leadership** is reflected by grants (25 as PI), awards, over 280 peer-reviewed publications, collaborations, becoming the Editor-in-Chief of the World Stroke Academy and Board of Directors of the World Stroke Organization, as well as, invitations as visiting professor, and AHA roles (Stroke Oversight Committee and 7 AHA writing groups). **Gustavo's work has strong international impact** as reflected by metrics (**Google scholar h-index 63; >54000 citations**), recognition in the annual reviews on 'Advances in Stroke, Health Policy and Outcomes' published in the STROKE Journal (Rudd et al. Stroke 2009;40:e301-e304 - Williams et al. Stroke 2010;41:e77-e80 and Brainin et al. Stroke 2013;44:311-313) and LANCET (Lancet 2011; 377: May 14), as well as, multiple citations in high-impact journals (NEJM 2010, Nature Neurology 2016).

B. Positions and Honors

1991 - 1996	Residency, Dept. of Medicine, University of Buenos Aires, Buenos Aires, Argentina
1996 - 1997	Chief Resident, Dept. of Neurological Sciences, University of Buenos Aires, Buenos Aires, Argentina
1997 - 1999	Clinical Stroke Fellow, Stroke Program, Ramos Mejia Hospital, University of Buenos Aires, Argentina.
1999 - 2000	Postdoctoral Fellow, Beth Israel Medical Center, Harvard University, USA Supervisor: Dr. Louis Caplan
2003 - 2006	Postdoctoral Clinical Stroke Fellow, University of Western Ontario, Canada. Supervisor: Dr. V. Hachinski
2009 - present	Senior Scientist, Institute for Clinical Evaluative Sciences (ICES), Toronto, Ontario, Canada
2007 - present	Scientist, Li Ka Shing Knowledge Translation Institute, Toronto, Ontario, Canada
2007 - present	Chair, Stroke Outcome Research Canada (SORCan – www.sorcan.ca) Working Group, Canada
2007 - present	Cross-appointment, Institute of Health Policy, Management and Evaluation (iHPME), University of Toronto
2010 - present	Director, Outcomes & Decision Neuroscience Research Unit, Li Ka Shing Institute, St. Michael's Hospital.
2011 - present	Associate Professor in Medicine (Neurology), Department of Medicine, University of Toronto, Ontario, Canada.

C. Contributions to Science

Gustavo's contributions have had tangible impact in 7 areas:

1) Stroke prognostic tool (www.sorcan.ca/iscore). I lead a research team that created and validated an ischemic Stroke risk prognostic score called iScore, which helps clinicians to estimate death, disability, health costs, risk of bleeding & response to tPA after stroke. Validated in different ethnic groups & used worldwide.

2) Innovative technologies to enhance brain recovery: Pilot-tested creation of iPad application and implementation of virtual reality (Wii) showing improvement in motor recovery.

3) SORCan (www.sorcan.ca): **National and International Network in Stroke Outcomes Research:** I funded & lead SORCan, contributing over 30 key articles on stroke outcomes.

4) Advances in Therapeutic Inertia and Decision-making in the management of neurological conditions (e.g. MS, stroke)

5) Advancing Stroke care: consultant for evaluation of process measures in Canada, Argentina, South Korea & Thailand.

6) Guidelines development: As a member of the AHA Stroke Oversight Committee, I had major roles in developing 5 different AHA guidelines for Stroke management.¹⁻⁵ Also working in 3 writing groups for AAN Guidelines, Rehab, and ILCOR for Cardiac Arrest.

7) e-Tools: iSCORE application, iSCORE web, Stroke rehab tablet application (3),

Development of Educational interventions: [Traffic light system to overcome therapeutic inertia in MS and Stroke Care.](#)

Medical Education of undergraduate (35) and graduate (10) students, residents (over 70), post-doctoral fellows (21) and visiting professors (5) to build research capacity. Many hired at prestigious universities worldwide.

- Development of educational interventions to optimize therapeutic decisions and ameliorate inertia in stroke and multiple sclerosis care.

- Development of educational workshops to optimize therapeutic decisions in the management of multiple sclerosis & stroke prevention.

Impact:

- Gustavo's innovative work as recognized on annual updates in *Stroke*, *Lancet* & *NEJM*
- Several projects garnered world-wide media attention.^{1-3, 6, 7}
- Lead and co-lead global studies in stroke care (e.g. UNMASK EVT, EVREST Multicenter trial, EDUCAR MS, DAMASCUS)
- The iSCORE is being used in multiple countries and recommended by scientific organizations (AHA, CSN).
- Development of new concepts influencing patient care: therapeutic inertia, herding, status quo, aversion to ambiguity.
- Each AHA guideline influence colleagues worldwide on current and effective stroke care.¹⁻⁵
- Position statements in Stroke rehabilitation, cardiac surgery in stroke patients with endocarditis, silent stroke, etc.^{5, 8, 9}
- Gustavo's team approach on decision making under uncertainty and physicians factors associated with therapeutic inertia have been recognized and captured attention of scientists and pharmaceutical companies with ongoing projects in many countries.

Selected peer-reviewed publications: <https://goo.gl/vx94dM>

Peer reviewed publications: 283

Metrics in Google scholar: 54,944 citations, h-index: 63

Metrics in ResearchGate: RG score 48.2; Impact points 1130

- 1: Saposnik G. Understanding Risk for Better Stroke Prevention. *BMJ Evid Based Med*. 2019 Oct;24(5):e1. doi: 10.1136.
- 2: Saposnik G, Oh J, Terzaghi MA, Kostyrko P, et al. Emotional expressions associated with therapeutic inertia in multiple sclerosis care. *Mult Scler Relat Disord*. 2019 Sep;34:17-28.
- 3: Saposnik G, Menon BK, Kashani N, Hill MD, Goyal M. Factors Associated With the Decision-Making on Endovascular Thrombectomy for the Management of Acute Ischemic Stroke. *Stroke*. 2019 Sep;50(9):2441-2447.
- 4: Burneo JG, Antaya TC, Allen BN, Belisle A, Shariff SZ, Saposnik G. The risk of new-onset epilepsy and refractory epilepsy in older adult stroke survivors. *Neurology*. 2019 Aug 6;93(6):e568-e577.
- 5: Almusalam N, Oh J, Terzaghi M, Maurino J, Bakdache F, Montoya A, Caceres F, Saposnik G. Comparison of Physician Therapeutic Inertia for Management of Patients With MS in Canada, Argentina, Chile, and Spain. *JAMA Netw Open*. 2019 Jul 3;2(7):e197093.
- 6: Saposnik G, Hachinski V. The pathway towards an effective reduction of stroke burden worldwide: teamwork. *Lancet Neurol*. 2019 Jul;18(7):622-623.
- 7: Saposnik G, Mamdani M, Montalban X, Terzaghi M, Silva B, Saladino ML, Tobler PN, Caceres F. Traffic Lights Intervention Reduces Therapeutic Inertia: A Randomized Controlled Trial in Multiple Sclerosis Care. *MDM Policy Pract*. 2019 21;4:2381
- 8: Levin MF, Hiengkaew V, Nilanont Y, Cheung D, Dai D, Shaw J, Bayley M, Saposnik G. Relationship Between Clinical Measures of Upper Limb Movement Quality and Activity Poststroke. *Neurorehabil Neural Repair*. 2019 Jun;33(6):432-441.
- 9: Saposnik G, Maurino J, Sempere AP, Terzaghi MA, Amato MP, Montalban X. Does attendance at the ECTRIMS congress impact on therapeutic decisions in multiple sclerosis care? *Mult Scler J Exp Transl Clin*. 2019 Mar 18;5(1):2055
- 10: Saposnik G. Applying Behavioral Economics and Neuroeconomics to Medical Education and Clinical Care. *Can J Neurol Sci*. 2019 Jan;46(1):35-37.
- 11: Sposato LA, Fridman S, Saposnik G. Author response: Atrial fibrillation detected after stroke is related to a low risk of ischemic stroke recurrence. *Neurology*. 2018 Nov 13;91(20):943.
- 12: Saposnik G, Mamdani M, Terzaghi M, Saladino ML, Silva B, Tobler PN, Caceres F. The Role of Prescribing Generic (Non-proprietary) Drugs in the Prevalence of Therapeutic Inertia in Multiple Sclerosis Care. *Front Neurol*. 2018 Oct 12;9:835.
- 13: Saposnik G, Montalban X, Selchen D, Terzaghi MA, Bakdache F, Montoya A, Fruns M, Caceres F, Oh J. Therapeutic Inertia in Multiple Sclerosis Care: A Study of Canadian Neurologists. *Front Neurol*. 2018 Sep 24;9:781.
- 14: Sposato LA, Stirling D, Saposnik G. Therapeutic Decisions in Atrial Fibrillation for Stroke Prevention: The Role of Aversion to Ambiguity and Physicians' Risk Preferences. *J Stroke Cerebrovasc Dis*. 2018 Aug;27(8):2088-2095.

- 15: Saposnik G, Tobler PN, Caceres F, Terzaghi MA, Ruff C, Maurino J, Fruns Quintana M, Oh J, Montalban X, Mamdani M. Usability of an Educational Intervention to Overcome Therapeutic Inertia in Multiple Sclerosis Care. *Front Neurol.* 2018 Jul 10;9:522.
- 16: Milman T, Joundi RA, Alotaibi NM, Saposnik G. Clinical inertia in the pharmacological management of hypertension: A systematic review and meta-analysis. *Medicine (Baltimore).* 2018 Jun;97(25):e11121.
- 17: Saposnik G, Montalban X. Therapeutic Inertia in the New Landscape of Multiple Sclerosis Care. *Front Neurol.* 2018 Mar 20;9:174.
18. Demaerschalk BM, Kleindorfer DO, Saposnik G, et al. Scientific rationale for the inclusion and exclusion criteria for intravenous alteplase in acute ischemic stroke: A statement for healthcare professionals from the AHA/ASA. *Stroke.* 2015
19. Gladstone DJ, Spring M, Dorian P, Panzov V, Thorpe KE, Hall J, et al. Atrial fibrillation in patients with cryptogenic stroke. *N. Engl. J. Med.* 2014;370:2467-2477
20. Saposnik G, Johnston SC. Decision making in acute stroke care: Learning from neuroeconomics, neuromarketing, and poker players. *Stroke.* 2014;45:2144-2150

D. Recent Research Support/Awards/Grants

Title	Principal Investigator	Co-Investigators	Sponsor	Start Date	End Date	Funding (Can)
OPERATING GRANTS						
Indicators of Quality of Stroke Care associated with Clinical Outcomes	Saposnik G.	Mamdani, Kapral, Tu, Hall, Austin	HSF	07/08	06/10	\$49,860
EVREST pilot	Saposnik G.	Teassel, Bayley, Willems, Cohen	OSS/HSF	11/08	03/10	\$60,000
SOS Stroke Care: evaluating the gaps along the continuum	Saposnik G.	Bell (Co-PI), Rochon, Kapral	OSS/HSF	11/09	05/11	\$86,600
Premature Stroke in Canada: The role of Fabry Disease (Operating grant)	Saposnik G.	Lanthier S, Selchen D (Co-PIs)	CSC	11/09	11/12	\$853,928
Effectiveness of Virtual Reality Exercising in Stroke Rehabilitation	Saposnik G.	Teassel, Bayley, Mamdani, Cohen	OSS/HSF	03/11	03/13	\$85,900
EVREST Multicentre	Saposnik G.	Teassel, Bayley, Duncan, Cohen	HSFC	07/11	06/14	\$246,000
Effectiveness of iPad technology for HOME Rehabilitation after stroke.	Saposnik G, Chow, CM	Teassel, Bayley, Mamdani,	OSS, HSF, MOH	07/12	06/14	\$74,600
iPad tablet technology for HOME Rehabilitation in patients with chronic stroke.	Saposnik G,	Co-PIs: Schweizer T, Gladstone D	HSF Centre for Stroke recovery	07/12	06/15	\$49,600
EVREST Multicentre renewal	Saposnik G.	Teassel, Bayley, Laupacis, Mamdani,	HSF	07/14	06/17	\$162,900
Stroke Outcomes Research	Saposnik G.		SMH Research	07/12	06/16	\$200,000
Decision making under uncertainty in MS	Saposnik G.	Maurino, Selchen, Sempere	BI & Roche Spain	11/14	06/17	\$56,880
Overcoming therapeutic inertia in MS	Saposnik G.	Maurino, Sempere	Roche Global	6/16	6/2018	\$178,000
Myndmove-Electric stimulation device	Saposnik G, Bayley, O'reily	Many site PIs	MaRS innovation	03/14	03/18	\$1,179,321
Decision making under uncertainty in Acute stroke care	Saposnik G, Goyal M	Hill, Demchuk, Menon	Stryker inc.	01/17	01/19	\$277,000
Decision making in MS care- DAMASCUS	Saposnik G.	Montalban X, Oh J. (Co-PIs)	Roche global	10/18	06/20	\$521,145
Total funding as PI (operating grants)	Saposnik G.	--	--	2007	2017	\$4,161,974

PERSONAL SALARY AWARDS

Focus in Stroke Fellowship Award	Saposnik G.	--	HSFC & CIHR	07/04	06/07	\$165,000
HSFC Clinician Scientist Award	Saposnik G.	--	HSFC	07/08	06/11	\$ 192,000
MacDonald Research Award	Saposnik G.	--	HSFC	07/12		\$ 15,000
New Investigator Award (declined)	Saposnik G.	--	CIHR	07/12	06/17	\$ 300,000
Distinguished Clinician Scientist Award	Saposnik G.	--	HSFC	07/12	06/17	\$ 500,000
HSFC Mid-Career Scientist Award	Saposnik G.	--	HSFC	07/17	06/21	\$ 320,000
Total personal funding	Saposnik G.	--	--	2007	2017	\$1,492,000

CIHR: Canadian Institute of Health Research, HSFC: Heart Stroke Foundation Canada, CSC: Canadian Stroke Consortium, OSS: Ontario Stroke Strategy/ Ministry of Health

E. Invited Lectures: 129

International lectures: over 40 in the last 3 years in over 10 countries, including USA, Argentina, Brazil, Spain, Finland, Sweden, France, Germany, Switzerland, Chile, Thailand, Malaysia, Austria, South Korea.