



Neil Schwartz, MD, PhD

- Clinical Professor, Neurology & Neurological Sciences
- Clinical Professor (By courtesy), Neurosurgery

CLINICAL OFFICES

- **Stanford Neuroscience Health Center**

213 Quarry Rd Rm 2851

MC 5957

Palo Alto, CA 94304

Tel (650) 723-6469

Fax (650) 725-0390

Bio

BIO

Dr. Schwartz joined the Stanford Stroke Center in 2004 as a Fellow in Vascular Neurology and has remained on as Faculty since 2007. Currently, his primary focus is the care of patients with cerebrovascular disease in both the inpatient and outpatient setting, including patients with both ischemic and hemorrhagic strokes. He has a particular interest and expertise in cervical artery dissection, non-atherosclerotic vasculopathies, and stroke in young adults.

Dr. Schwartz is a national leader in neurological education and served as the Program Director for the Stanford Neurology Residency Program for nearly a decade, but remains involved as the Associate Program Director, and Vice Chair (Education). He also serves as the Medical Director for Neurology (H1) at Stanford HealthCare. He is the director of the newly launched Young Stroke Program within the Stanford Stroke Center

Learn more about the Neurology Residency Program and other educational opportunities at: <http://neurology.stanford.edu/education>

CLINICAL FOCUS

- Vascular Neurology
- Neurology
- Stroke in the young adult

ACADEMIC APPOINTMENTS

- Clinical Professor, Neurology & Neurological Sciences
- Clinical Professor (By courtesy), Neurosurgery

ADMINISTRATIVE APPOINTMENTS

- Program Director, Vascular Neurology Fellowship, Dept of Neurology & Neurological Sciences, (2018- present)
- Vice Chair (Education), Dept. of Neurology & Neurological Sciences, (2018- present)
- Associate Program Director, Neurology Residency Program, Dept. of Neurology & Neurological Sciences, (2018- present)

- Director, Young Stroke Program, Stanford Health Care, (2017- present)
- Medical Director, Neurology (H1), Stanford Health Care, (2018- present)
- Medical Director, Clinical Neurosciences (G1/H1), Stanford Health Care, (2010-2018)
- Program Director, Neurology Residency Program, Dept. of Neurology & Neurological Sciences, (2010-2018)

PROFESSIONAL EDUCATION

- Fellowship: Stanford University Vascular Neurology Fellowship (2005) CA
- Residency: Stanford University Neurology Residency (2004) CA
- Internship: California Pacific Medical Center Internal Medicine Residency (2001) CA
- Board Certification: Vascular Neurology, American Board of Psychiatry and Neurology (2008)
- Board Certification: Neurology, American Board of Psychiatry and Neurology (2006)
- Medical Education: Northwestern University Feinberg School of Medicine (2000) IL
- MD, Northwestern University (2000)
- PhD, Northwestern University , Neurophysiology Neuropharmacology (1998)

LINKS

- Stanford Stroke Center: <http://strokecenter.stanford.edu/index.html>
- <http://med.stanford.edu/neurology/>: <http://med.stanford.edu/neurology/>
- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My clinical interests involve inpatient and outpatient care of patients with neurovascular diseases, mostly ischemic and hemorrhagic stroke. I have a particular interest in cervical artery dissection, non-atherosclerotic vasculopathies, and stroke in the young.

CLINICAL TRIALS

- Clot Lysis: Evaluating Accelerated Resolution of Intraventricular Hemorrhage Phase III, Recruiting
- Diagnostic Utility of MRI in Intracerebral Hemorrhage, Recruiting
- Imaging Collaterals in Acute Stroke (iCAS), Recruiting
- Computed Tomography Perfusion (CTP) to Predict Response to Recanalization in Ischemic Stroke Project (CRISP), Not Recruiting
- Efficacy and Safety Study of Desmoteplase to Treat Acute Ischemic Stroke (DIAS-4), Not Recruiting
- Endovascular Therapy Following Imaging Evaluation for Ischemic Stroke 3, Not Recruiting
- Protected Carotid Artery Stenting in Subjects at High Risk for Carotid Endarterectomy (CEA) (PROTECT), Not Recruiting
- Transient Ischemic Attack (TIA) Triage and Evaluation of Stroke Risk, Not Recruiting

Publications

PUBLICATIONS

- **Two-year safety and clinical outcomes in chronic ischemic stroke patients after implantation of modified bone marrow-derived mesenchymal stem cells (SB623): a phase 1/2a study.** *Journal of neurosurgery*
Steinberg, G. K., Kondziolka, D., Wechsler, L. R., Lunsford, L. D., Kim, A. S., Johnson, J. N., Bates, D., Poggio, G., Case, C., McGrogan, M., Yankee, E. W., Schwartz, N. E.
2018: 1–11

- **Clopidogrel and Aspirin in Acute Ischemic Stroke and High-Risk TIA.** *The New England journal of medicine*
Johnston, S. C., Easton, J. D., Farrant, M., Barsan, W., Conwit, R. A., Elm, J. J., Kim, A. S., Lindblad, A. S., Palesch, Y. Y.
2018
- **Response by Steinberg et al to Letter Regarding Article, "Clinical Outcomes of Transplanted Modified Bone Marrow-Derived Mesenchymal Stem Cells in Stroke: A Phase 1/2A Study"** *STROKE*
Steinberg, G. K., Kondziolka, D., Bates, D.
2016; 47 (12): E269-E269
- **Clinical Outcomes of Transplanted Modified Bone Marrow-Derived Mesenchymal Stem Cells in Stroke A Phase 1/2a Study** *STROKE*
Steinberg, G. K., Kondziolka, D., Wechsler, L. R., Lunsford, L. D., Coburn, M. L., Billigen, J. B., Kim, A. S., Johnson, J. N., Bates, D., King, B., Case, C., McGrogan, M., Yankee, et al
2016; 47 (7): 1817-1824
- **Inter-rater agreement analysis of the Precise Diagnostic Score for suspected transient ischemic attack.** *International journal of stroke*
Cereda, C. W., George, P. M., Inoue, M., Vora, N., Olivot, J., Schwartz, N., Lansberg, M. G., Kemp, S., Mlynash, M., Albers, G. W.
2016; 11 (1): 85-92
- **The association between lesion location and functional outcome after ischemic stroke** *INTERNATIONAL JOURNAL OF STROKE*
Yassi, N., Churilov, L., Campbell, B. C., Sharma, G., Bammer, R., Desmond, P. M., Parsons, M. W., Albers, G. W., Donnan, G. A., Davis, S. M., Investigators, E. P.
2015; 10 (8): 1270-1276
- **Yield of CT perfusion for the evaluation of transient ischaemic attack.** *International journal of stroke*
Kleinman, J. T., Mlynash, M., Zaharchuk, G., Ogdie, A. A., Straka, M., Lansberg, M. G., Schwartz, N. E., Singh, P., Kemp, S., Bammer, R., Albers, G. W., Olivot, J.
2015; 10: 25-29
- **Prodromal Transient Ischemic Attack or Minor Stroke and Outcome in Basilar Artery Occlusion** *JOURNAL OF STROKE & CEREBROVASCULAR DISEASES*
Conforto, A. B., de Freitas, G. R., Schonewille, W. J., Kappelle, L. J., Algra, A.
2015; 24 (9): 2117-2121
- **Diagnostic and Prognostic Impact of pc-ASPECTS Applied to Perfusion CT in the Basilar Artery International Cooperation Study** *JOURNAL OF NEUROIMAGING*
Pallesen, L., Gerber, J., Dzialowski, I., van der Hoeven, E. J., Michel, P., Pfefferkorn, T., Ozdoba, C., Kappelle, L. J., Wiedemann, B., Khomenko, A., Algra, A., Hill, M. D., von Kummer, et al
2015; 25 (3): 384-389
- **Vertebral artery stenosis in the Basilar Artery International Cooperation Study (BASICS): prevalence and outcome** *JOURNAL OF NEUROLOGY*
Compter, A., van der Hoeven, E. J., van der Worp, H. B., Vos, J. A., Weimar, C., Rueckert, C. M., Kappelle, L. J., Algra, A., Schonewille, W. J.
2015; 262 (2): 410-417
- **Cervical Arterial Dissections and Association With Cervical Manipulative Therapy A Statement for Healthcare Professionals From the American Heart Association/American Stroke Association** *STROKE*
Biller, J., Sacco, R. L., Albuquerque, F. C., Demaerschalk, B. M., Fayad, P., Long, P. H., Noorollah, L. D., Panagos, P. D., Schievink, W. I., Schwartz, N. E., Shuaib, A., Thaler, D. E., Tirschwell, et al
2014; 45 (10): 3155-3174
- **Time is Brain(stem) in Basilar Artery Occlusion** *STROKE*
Vergouwen, M. I., Algra, A., Pfefferkorn, T., Weimar, C., Rueckert, C. M., Thijs, V., Kappelle, L., Schonewille, W. J., Basilar Artery Int Cooperation Stu
2012; 43 (11): 3003-U367
- **PREDICTING OUTCOME AFTER ACUTE BASILAR ARTERY OCCLUSION BASED ON ADMISSION CHARACTERISTICS** *NEUROLOGY*
He, Y., Li, T., Schonewille, W. J., Greving, J. P., Kappelle, L. J., Algra, A.
2012; 79 (13): 1410
- **Clinical Assessment of Standard and Generalized Autocalibrating Partially Parallel Acquisition Diffusion Imaging: Effects of Reduction Factor and Spatial Resolution** *AMERICAN JOURNAL OF NEURORADIOLOGY*
Andre, J. B., Zaharchuk, G., Fischbein, N. J., Augustin, M., Skare, S., Straka, M., Rosenberg, J., Lansberg, M. G., Kemp, S., Wijman, C. A., Albers, G. W., Schwartz, N. E., Bammer, et al

2012; 33 (7): 1337-1342

- **Automated Perfusion Imaging for the Evaluation of Transient Ischemic Attack** *STROKE*
Kleinman, J. T., Zaharchuk, G., Mlynash, M., Ogdie, A. A., Straka, M., Lansberg, M. G., Schwartz, N. E., Kemp, S., Bammer, R., Albers, G. W., Olivot, J.
2012; 43 (6): 1556-1560
- **Predicting outcome after acute basilar artery occlusion based on admission characteristics** *NEUROLOGY*
Greving, J. P., Schonewille, W. J., Wijman, C. A., Michel, P., Kappelle, L. J., Algra, A.
2012; 78 (14): 1058-1063
- **Antithrombotic and thrombolytic therapy for ischemic stroke: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines.** *Chest*
Lansberg, M. G., O'Donnell, M. J., Khatri, P., Lang, E. S., Nguyen-Huynh, M. N., Schwartz, N. E., Sonnenberg, F. A., Schulman, S., Vandvik, P. O., Spencer, F. A., Alonso-Coello, P., Guyatt, G. H., Akl, et al
2012; 141 (2): e601S-36S
- **Antithrombotic and Thrombolytic Therapy for Ischemic Stroke Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines** *CHEST*
Lansberg, M. G., O'Donnell, M. J., Khatri, P., Lang, E. S., Nguyen-Huynh, M. N., Schwartz, N. E., Sonnenberg, F. A., Schulman, S., Vandvik, P. O., Spencer, F. A., Alonso-Coello, P., Guyatt, G. H., Akl, et al
2012; 141 (2): E601S-E636S
- **Concurrent stenooclusive disease of intracranial and extracranial arteries in a patient with polycythemia vera.** *Case reports in medicine*
Hua, L. H., Dodd, R. L., Schwartz, N. E.
2012; 2012: 151767-?
- **Greater Effect of Stroke Thrombolysis in the Presence of Arterial Obstruction** *ANNALS OF NEUROLOGY*
De Silva, D. A., Churilov, L., Olivot, J., Christensen, S., Lansberg, M. G., Mlynash, M., Campbell, B. C., Desmond, P., Straka, M., Bammer, R., Albers, G. W., Davis, S. M., Donnan, et al
2011; 70 (4): 601-605
- **TWO ACES Transient Ischemic Attack Work-Up as Outpatient Assessment of Clinical Evaluation and Safety** *STROKE*
Olivot, J., Wolford, C., Castle, J., Mlynash, M., Schwartz, N. E., Lansberg, M. G., Kemp, S., Albers, G. W.
2011; 42 (7): 1839-1843
- **The Albumin in Acute Stroke Part 1 Trial An Exploratory Efficacy Analysis** *STROKE*
Hill, M. D., Martin, R. H., Palesch, Y. Y., Tamariz, D., Waldman, B. D., Ryckborst, K. J., Moy, C. S., Barsan, W. G., Ginsberg, M. D.
2011; 42 (6): 1621-1625
- **Mri Based Tia Triage Study** *International Stroke Conference*
Wolford, C., Mlynash, M., Schwartz, N. E., Purushotham, A., Lansberg, M., Kemp, S., Albers, G. W., Olivot, J.
LIPPINCOTT WILLIAMS & WILKINS.2011: E210-E210
- **TIA Clinic Triage Strategy Reduces the Cost of TIA Evaluation** *International Stroke Conference*
Mlynash, M., Castle, J., Olivot, J., Wolford, C., Schwartz, N. E., Lansberg, M. G., Edwards, G., Kemp, S., Albers, G. W.
LIPPINCOTT WILLIAMS & WILKINS.2011: E250-E250
- **MRI Profile of the Perihematomal Region in Acute Intracerebral Hemorrhage** *STROKE*
Olivot, J., Mlynash, M., Kleinman, J. T., Straka, M., Venkatasubramanian, C., Bammer, R., Moseley, M. E., Albers, G. W., Wijman, C. A.
2010; 41 (11): 2681-2683
- **Acute Basilar Artery Occlusion in the Basilar Artery International Cooperation Study Does Gender Matter?** *STROKE*
Arnold, M., Fischer, U., Compter, A., Gralla, J., Findling, O., Mattle, H. P., Kappelle, L. J., Tanne, D., Algra, A., Schonewille, W. J.
2010; 41 (11): 2693-2696
- **Intravenous Thrombolysis Plus Hypothermia for Acute Treatment of Ischemic Stroke (ICTuS-L) Final Results** *STROKE*
Hemmen, T. M., Raman, R., Guluma, K. Z., Meyer, B. C., Gomes, J. A., Cruz-Flores, S., Wijman, C. A., Rapp, K. S., Grotta, J. C., Lyden, P. D.
2010; 41 (10): 2265-2270
- **Dabigatran Challenges Warfarin's Superiority for Stroke Prevention in Atrial Fibrillation** *STROKE*
Schwartz, N. E., Albers, G. W.

2010; 41 (6): 1307-1309

- **Endovascular Thrombectomy for Acute Ischemic Stroke in Failed Intravenous Tissue Plasminogen Activator Versus Non-Intravenous Tissue Plasminogen Activator Patients Revascularization and Outcomes Stratified by the Site of Arterial Occlusions** *STROKE*
Shi, Z., Loh, Y., Walker, G., Duckwiler, G. R.
2010; 41 (6): 1185-1192
- **Clinical Outcomes in Middle Cerebral Artery Trunk Occlusions Versus Secondary Division Occlusions After Mechanical Thrombectomy Pooled Analysis of the Mechanical Embolus Removal in Cerebral Ischemia (MERC1) and Multi MERC1 Trials** *STROKE*
Shi, Z., Loh, Y., Walker, G., Duckwiler, G. R.
2010; 41 (5): 953-960
- **Diagnostic Accuracy of MRI in Spontaneous Intra-cerebral Hemorrhage (DASH): Initial Results** *International Stroke Conference*
Wijman, C. A., Snider, R. W., Venkatasubramanian, C., Caulfield, A. F., Buckwalter, M., Eyngorn, I., Fischbein, N., Gean, A., Schwartz, N., Lansberg, M., Mlynash, M., Kemp, S., Thai, et al
LIPPINCOTT WILLIAMS & WILKINS.2010: E210-E211
- **Intravenous Thrombolysis Plus Hypothermia for Acute Treatment of Ischemic Stroke (ICTuS-L): Final Results** *International Stroke Conference*
Hemmen, T. M., Raman, R., Gomez, J. A., Cruz-Flores, S., Wijman, C. A., Rapp, K. S., Grotta, J. C., Lyden, P. D.
LIPPINCOTT WILLIAMS & WILKINS.2010: E246-E246
- **MRI Profile of the Perihematomal Region in Acute Intracerebral Hemorrhage**
Olivot, J., Mlynash, M., Kleinman, J. T., Straka, M., Venkatasubramanian, C., Bammer, R., Moseley, M., Albers, G. W., Wijman, C. A., DASH Investigators
LIPPINCOTT WILLIAMS & WILKINS.2010: E343
- **Factors Predicting the Presence of Acute Ischemic Lesions on Diffusion Weighted in the Stanford TIA Study (Two Aces)** *International Stroke Conference*
Olivot, J. M., Wolford, C., Mlynash, M., Castle, J., Lansberg, M., Schwartz, N., Kemp, S., Albers, G. W.
LIPPINCOTT WILLIAMS & WILKINS.2010: E273-E273
- **Utility of Early MRI in the Diagnosis and Management of Acute Spontaneous Intracerebral Hemorrhage** *CEREBROVASCULAR DISEASES*
Wijman, C. A., Venkatasubramanian, C., Bruins, S., Fischbein, N., Schwartz, N.
2010; 30 (5): 456-463
- **Clinical and Radiographic Natural History of Cervical Artery Dissections** *JOURNAL OF STROKE & CEREBROVASCULAR DISEASES*
Schwartz, N. E., Vertinsky, A. T., Hirsch, K. G., Albers, G. W.
2009; 18 (6): 416-423
- **Improving Dynamic Susceptibility Contrast MRI Measurement of Quantitative Cerebral Blood Flow using Corrections for Partial Volume and Nonlinear Contrast Relaxivity: A Xenon Computed Tomographic Comparative Study** *JOURNAL OF MAGNETIC RESONANCE IMAGING*
Zaharchuk, G., Bammer, R., Straka, M., Newbould, R. D., Rosenberg, J., Olivot, J., Mlynash, M., Lansberg, M. G., Schwartz, N. E., Marks, M. M., Albers, G. W., Moseley, M. E.
2009; 30 (4): 743-752
- **Treatment and outcomes of acute basilar artery occlusion in the Basilar Artery International Cooperation Study (BASICS): a prospective registry study** *LANCET NEUROLOGY*
Schonewille, W. J., Wijman, C. A., Michel, P., Rueckert, C. M., Weimar, C., Mattle, H. P., Engelter, S. T., Tanne, D., Muir, K. W., Molina, C. A., Thijs, V., Audebert, H., Pfefferkorn, et al
2009; 8 (8): 724-730
- **Tissue Plasminogen Activator Does Not Benefit Most Eligible Patients With Stroke** *ARCHIVES OF NEUROLOGY*
Lansberg, M. G., Schwartz, N. E.
2009; 66 (4): 540-541
- **SENSE Diffusion-weighted Imaging Improves Diagnostic Sensitivity in Acute Ischemic Stroke** *American-Association-International-Stroke Conference 2009*
Schwartz, N. E., Newbould, R. D., Skare, S., Zaharchuk, G., Mlynash, M., Olivot, J., Lansberg, M. G., Eyngorn, I., Thai, D., Albers, G. W., Bammer, R.
LIPPINCOTT WILLIAMS & WILKINS.2009: E115-E115
- **Perfusion MRI (Tmax and MTT) correlation with xenon CT cerebral blood flow in stroke patients** *NEUROLOGY*
Olivot, J., Mlynash, M., Zaharchuk, G., Straka, M., Bammer, R., Schwartz, N., Lansberg, M. G., Moseley, M. E., Albers, G. W.
2009; 72 (13): 1140-1145

- **Antithrombotic agents for stroke prevention.** *Handbook of clinical neurology*
Schwartz, N. E., Diener, H., Albers, G. W.
2009; 94: 1277-1294
- **Acute strokes in the setting of a persistent primitive trigeminal artery.** *BMJ case reports*
Schwartz, N. E., Albers, G. W.
2009; 2009: bcr2006111773-?
- **Risk of Symptomatic Intracerebral Hemorrhage in Patients Treated with Intra-Arterial Thrombolysis** *CEREBROVASCULAR DISEASES*
Singer, O. C., Berkefeld, J., Lorenz, M. W., Fiehler, J., Albers, G. W., Lansberg, M. G., Kastrup, A., Rovira, A., Liebeskind, D. S., Gass, A., Rosso, C., Derex, L., Kim, et al
2009; 27 (4): 368-374
- **Comparison of Multidetector CT Angiography and MR Imaging of Cervical Artery Dissection** *AMERICAN JOURNAL OF NEURORADIOLOGY*
Vertinsky, A. T., Schwartz, N. E., Fischbein, N. J., Rosenberg, J., Albers, G. W., Zaharchuk, G.
2008; 29 (9): 1753-1760
- **Mechanical thrombectomy for acute ischemic stroke - Final results of the multi MERCI trial** *STROKE*
Smith, W. S., Sung, G., Saver, J., Budzik, R., Duckwiler, G., Liebeskind, D. S., Lutsep, H. L., Rymer, M. M., Higashida, R. T., Starkman, S., Gobin, Y. P.
2008; 39 (4): 1205-1212
- **Use of antiplatelet agents to prevent stroke: What is the role for combinations of medications?** *CURRENT NEUROLOGY AND NEUROSCIENCE REPORTS*
Schwartz, N. E., Albers, G. W.
2008; 8 (1): 29-34
- **Is there a role for combinations of antiplatelet agents in stroke prevention?** *Current treatment options in neurology*
Schwartz, N. E., Albers, G. W.
2007; 9 (6): 442-450
- **The Basilar Artery International Cooperation Study (BASICS)** *INTERNATIONAL JOURNAL OF STROKE*
Schonewille, W. J., Wijman, C. A., Michel, P., Algra, A., Kappelle, L. J.
2007; 2 (3): 220-223
- **Neurological picture. Acute strokes in the setting of a persistent primitive trigeminal artery.** *Journal of neurology, neurosurgery, and psychiatry*
Schwartz, N. E., Albers, G. W.
2007; 78 (7): 745-?
- **Transient isolated vertigo secondary to an acute stroke of the cerebellar nodulus** *ARCHIVES OF NEUROLOGY*
Schwartz, N. E., Venkat, C., Albers, G. W.
2007; 64 (6): 897-898
- **Action at a distance: A lumbar spine tumor presenting as trigeminal neuralgia** *CLINICAL NEUROLOGY AND NEUROSURGERY*
Schwartz, N. E., Rosenberg, S., So, Y. T.
2006; 108 (8): 806-808
- **Physiological activation of presynaptic metabotropic glutamate receptors increases intracellular calcium and glutamate release** *JOURNAL OF NEUROPHYSIOLOGY*
Schwartz, N. E., Alford, S.
2000; 84 (1): 415-427
- **Modulation of pre- and postsynaptic calcium dynamics by ionotropic glutamate receptors at a plastic synapse** *JOURNAL OF NEUROPHYSIOLOGY*
Schwartz, N. E., Alford, S.
1998; 79 (4): 2191-2203