

Stanford



Harminder Singh, M.D.

Clinical Associate Professor, Neurosurgery

CONTACT INFORMATION

- **Administrative Contact**

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Bio

BIO

Dr. Harminder Singh is Clinical Associate Professor of Neurosurgery at Stanford University School of Medicine. He serves as Chief of Neurosurgery at Santa Clara Valley Medical Center in San Jose, California, and is the Director of Neurotrauma. He is also Director of the Stanford Neuroanatomy and Simulation laboratory. Dr. Singh is board certified in neurosurgery by the American Board of Neurological Surgery (ABNS) and a fellow of the American College of Surgeons (ACS).

He received advanced training in minimally invasive cranial surgery from Cornell University with Dr. Theodore Schwartz, and completed a complex cerebrovascular and skull base fellowship at the University of Washington With Dr. Laligam Sekhar.

During residency, Dr. Singh received extensive training in all aspects of spinal surgery: traumatic, degenerative and oncologic. He also trained with international orthopedic experts on spinal surgery, including Dr. Alex Vaccaro and Todd Albert, among others.

Dr. Singh is passionate about resident education, having organized numerous cadaveric workshops and symposiums for residents over the last several years.

He is editor of two books on pediatric endoscopic surgery, and has published over 70 research papers and book chapters.

His clinical and research interests lie in applying the principles of minimally invasive surgery to tumors and vascular lesions of brain and spine. Dr. Singh is interested in developing new endoscopic technology and instrumentation to facilitate minimally invasive surgery of the central nervous system.

<https://www.karlstorz.com/doc/interactivebrochure/3464376/html5/index.html>

<https://www.thieme.com/books-main/neurosurgery/product/5078-pediatric-endoscopic-endonasal-skull-base-surgery>

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Neurosurgery

ADMINISTRATIVE APPOINTMENTS

- Board member, Value Analysis Committee, Santa Clara Valley Medical Center, (2018-2019)
- Chief of Neurosurgery, Santa Clara Valley Medical Center, San Jose, CA, (2018- present)
- Director, Neurotrauma, Santa Clara Valley Medical Center, San Jose, CA, (2018- present)
- Neurosurgery Liaison, Santa Clara Valley Medical Center (SCVMC) Operating Room Committee (ORC), (2018- present)

- Quality Liaison, Pediatric Trauma Program Improvement and Patient Safety Committee, SCVMC, (2018- present)
- Quality Liaison, SCVMC Department of Surgery Quality Assurance Committee (DQAC), (2018- present)
- Quality Liaison, Neurosurgery Professional Practice Evaluation Committee (PPEC), Stanford, (2018- present)
- Quality Liaison, Trauma Program Improvement and Patient Safety Committee (TPIPSC), SCVMC, (2018- present)
- Director, Stanford Neuroanatomy and Simulation Laboratory, (2015- present)
- Advising Associate for Neurosurgery, Academic Advising Dean's Office, Stanford University School of Medicine, (2012- present)

HONORS AND AWARDS

- Vanguard Leadership in Healthcare, Congress of Neurological Surgeons (2019)
- First Place Trauma and Critical Care E-poster, American Association of Neurological Surgeons (2018)
- Castle Connolly Top Doctor Award, Castle Connolly (2018-2019)
- Patients' Choice Award, Vitals.com (2012-2019)
- Compassionate Doctor Recognition, American Registry (2012-2019)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- PRESIDENT, American Association of South Asian Neurosurgeons (2018 - present)
- Editorial Board Member, Neurosurgery and Spine research (NSR) (2016 - present)
- Secretary, American Association of South Asian Neurosurgeons (2014 - 2018)
- Editorial Board, Open Journal of Modern Neurosurgery (2013 - present)
- Education Committee Member, Congress of Neurological Surgeons (2013 - present)
- Editorial Board, CNS University - Tumor Section (2012 - present)
- Member at Large, American Association of South Asian Neurosurgeons (2012 - 2014)
- Member, WW Keen Neurosurgical Society (2010 - present)
- Member, North American Skull Base Society (2010 - present)
- Member, American Association of Neurological Surgeons (2004 - present)
- Member, Congress of Neurological Surgeons (2004 - present)

PROFESSIONAL EDUCATION

- Certification, Harvard Medical School, Boston , Surgical Leadership (2019)
- Fellowship, University of Washington - Harborview Medical Center , Complex Cerebrovascular and Skull base Surgery - Prof. Laligam N Sekhar (2016)
- Fellowship, Weill Cornell Medical College, New York Presbyterian Hospital , Minimally Invasive Skull Base Surgery - Prof. Theodore H Schwartz (2015)
- FACS, American College of Surgeons (ACS) - Fellow , Neurosurgery (2015)
- FAANS, American Board of Neurological Surgery , Neurosurgery (2014)
- Residency, Thomas Jefferson University Hospital - Philadelphia , Neurosurgery (2010)
- Internship, Thomas Jefferson University Hospital - Philadelphia , General Surgery (2005)
- MD, Tufts University School of Medicine, Boston , Medicine (2004)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Minimally Invasive Cranial and Spinal Surgery, Endoscopic Keyhole Surgery

CLINICAL TRIALS

- Electrical Stimulation for Continence After Spinal Cord Injury, Recruiting
- Antihypertensive Treatment of Acute Cerebral Hemorrhage-II, Not Recruiting
- DuraSeal Exact Spine Sealant System Post-Approval Study, Not Recruiting

Publications

PUBLICATIONS

- **A Dual Approach for the Management of Complex Craniovertebral Junction Abnormalities: Endoscopic Endonasal Odontoidectomy and Posterior Decompression with Fusion.** *World neurosurgery: X*
Alalade, A. F., Ogando-Rivas, E., Forbes, J., Ottenhausen, M., Uribe-Cardenas, R., Hussain, I., Nair, P., Lehner, K., Singh, H., Kacker, A., Anand, V. K., Hartl, R., Baaj, et al
2019; 2: 100010
- **Patient Positioning and Operating Room Setup** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Dayani, F., Medress, Z., Anand, V. K., Schwartz, T. H., Singh, H.
Thieme.2019; 1
- **Pediatric Endoscopic Endonasal Skull Base Surgery**
Schwartz, T. H.
edited by Singh, H., Greenfield, J. P., Anand, V. K.
Thieme.2019
- **Craniopharyngioma** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Singh, H., Essayed, W. I., Schwartz, T. H.
Thieme.2019; 1
- **Meningoencephaloceles** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Zeinalizadeh, M., Sadrhosseini, S. M., da Silva, H. B., Singh, H.
Thieme.2019; 1
- **Closure Techniques for the Pediatric Skull Base: Gasket Seal** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Singh, H., Anand, V. K., Schwartz, T. H.
Thieme.2019; 1
- **Instrumentation** *Pediatric Endoscopic Endonasal Skull Base Surgery.*
Essayed, W. I., Radhouane, K., Schwartz, T. H., Singh, H.
Thieme.2019; 1
- **Endonasal Corridors and Approaches** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Singh, H., Greenfield, J. P., Almodovar, G. J., Anand, V. K., Schwartz, T. H.
Thieme.2019; 1
- **Odontoidectomy for Cranio-Vertebral Junction Compression** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Singh, H., Alalade, A., Greenfield, J. P., Anand, V. K., Schwartz, T. H.
Thieme.2019; 1
- **Ventral Approaches to Intraparenchymal Tumors of the Skull-base and Brainstem** *Pediatric Endoscopic Endonasal Skull Base Surgery*
Singh, H., Ho, A., Kim, L., Essayed, W. I., Schwartz, T. H.
Thieme.2019; 1
- **Lumbar Puncture for the Injection of Intrathecal Fluorescein: Should It Be Avoided in a Subset of Patients Undergoing Endoscopic Endonasal Resection of Sellar and Parasellar Lesions?** *Journal of neurological surgery. Part B, Skull base*
Zhang, M., Azad, T. D., Singh, H., Salam, S., Jain, S., Anand, V. K., Schwartz, T. H.
2018; 79 (6): 554–58
- **Cervical Stenosis in Adult Arthrogyrosis: A Case Report and Review of the Literature.** *Journal of neurological surgery reports*

- Ho, A. L., Mohole, J., Sussman, E. S., Pendharkar, A. V., Singh, H.
2018; 79 (1): e19–e22
- **Minimally invasive lumbar pedicle screw fixation using cortical bone trajectory - Screw accuracy, complications, and learning curve in 100 screw placements.** *Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia*
Dayani, F., Chen, Y. R., Johnson, E., Deb, S., Wu, Y., Pham, L., Singh, H.
2018
 - **Minimally Invasive Lumbar Pedicle Screw Fixation Using Cortical Bone Trajectory: Functional Outcomes.** *Cureus*
Chen, Y., Deb, S., Jabarkheel, R., Pham, L., Patel, M., Singh, H.
2018; 10 (10): e3462
 - **Endocrine Silent Pituitary Tumors** *Surgical Neuro-Oncology*
Singh, H., Salam, S., Schwartz, T. H.
Oxford University Press.2018; 1
 - **Anterior Skull Base Tumors – Endoscopic Perspective** *Controversies in Neuroendoscopy*
Singh, H., Essayed, W. E., Schwartz, T. H.
Thieme.2018; 1
 - **Transbasal and Extended Subfrontal Bilateral Approach** *Operative Cranial Neurosurgical Anatomy*
Singh, H., Zeinalizadeh, M., Da-Silva, H., Sekhar, L.
Thieme.2018; 1
 - **Basilar Artery Ectasia Causing Trigeminal Neuralgia: An Evolved Technique of Transpositional Suture-Pexy.** *Operative neurosurgery (Hagerstown, Md.)*
Singh, H., da Silva, H. B., Zeinalizadeh, M., Elarjani, T., Straus, D., Sekhar, L. N.
2018; 14 (2): 194–99
 - **Factors influencing outcome in patients with colloid cysts who present with acute neurological deterioration.** *Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia*
Singh, H., Burhan Janjua, M., Ahmed, M., Esquenazi, Y., Dhandapani, S., Mauer, E., Schwartz, T. H., Souweidane, M. S.
2018
 - **Side-to-Side A3-A4 Bypass after Clip Ligation of Recurrent Coiled Anterior Communicating Artery Aneurysm: 3-Dimensional Operative Video.** *Operative neurosurgery (Hagerstown, Md.)*
Park, D. H., Singh, H., da Silva, H. B., Sekhar, L. N.
2018; 14 (1): 87
 - **Landmarks to Identify Petrous Apex Through Endonasal Approach Without Transgression of Sinus.** *Journal of neurological surgery. Part B, Skull base*
Negm, H. M., Singh, H., Dhandapani, S., Cohen, S., Anand, V. K., Schwartz, T. H.
2018; 79 (2): 156–60
 - **Endoscopic Technology and Repair Techniques.** *Handbook of Neurology: Meningiomas.*
Singh, H., Essayed, W., Schwartz, T.
Elsevier.2018
 - **Contralateral supraorbital keyhole approach to medial optic nerve lesions: an anatomoclinical study.** *Journal of neurosurgery*
Singh, H., Essayed, W. I., Jada, A., Moussazadeh, N., Dhandapani, S., Rote, S., Schwartz, T. H.
2017; 126 (3): 940-944
 - **Endonasal management of pediatric congenital transsphenoidal encephaloceles: nuances of a modified reconstruction technique. Technical note and report of 3 cases.** *Journal of neurosurgery. Pediatrics*
Zeinalizadeh, M., Sadrehosseini, S. M., Habibi, Z., Nejat, F., Silva, H. B., Singh, H.
2017; 19 (3): 312-318
 - **Minimally Invasive Robotic Laser Corpus Callosotomy: A Proof of Concept.** *Cureus*
Singh, H., Essayed, W. I., Deb, S., Hoffman, C., Schwartz, T. H.
2017; 9 (2)
 - **Endoscopic endonasal versus microscopic transsphenoidal surgery for recurrent and/or residual pituitary adenomas.** *World neurosurgery*
Esquenazi, Y., Essayed, W. I., Singh, H., Mauer, E., Ahmed, M., Christos, P. J., Schwartz, T. H.

2017

- **Endonasal endoscopic reoperation for residual or recurrent craniopharyngiomas** *JOURNAL OF NEUROSURGERY*
Dhandapani, S., Singh, H., Negm, H. M., Cohen, S., Souweidane, M. M., Greenfield, J. P., Anand, V. K., Schwartz, T. H.
2017; 126 (2): 418-430
- **Endoscopic endonasal approach to the ventral brainstem: anatomical feasibility and surgical limitations.** *Journal of neurosurgery*
Essayed, W. I., Singh, H., Lapadula, G., Almodovar-Mercado, G. J., Anand, V. K., Schwartz, T. H.
2017: 1–8
- **Microscopic Resection of Recurrent Giant Adenoma and Clip Ligation of Contralateral Internal Carotid Artery Terminus Aneurysm: 3-Dimensional Operative Video.** *Operative neurosurgery (Hagerstown, Md.)*
Singh, H., da Silva, H. B., Zeinalizadeh, M., Sekhar, L. N.
2017; 13 (6): 758
- **A Case of Gigantism.** *The Art of Neuroendocrinology: A Case-Based Approach to Medical Decision Making.*
Singh, H., Rote, S., Essayed, W., Schwartz, T.
Nova Science Pub Inc..2017
- **Brain Stem Cavernous Malformations: Operative Nuances of a Less-Invasive Resection Technique.** *Operative neurosurgery (Hagerstown, Md.)*
Singh, H., Elarjani, T., da Silva, H. B., Shetty, R., Kim, L., Sekhar, L. N.
2017
- **Endoscopic Transsphenoidal Pituitary Surgery: Results and Complications.** *Transphenoidal Surgery- Complication Avoidance and Management Techniques.*
Singh, H., Essayed, W., Hussain, I., Yang, K., Anand, V., Schwartz, T.
Springer.2017
- **Limitations of the endonasal endoscopic approach in treating olfactory groove meningiomas. A systematic review.** *Acta neurochirurgica*
Shetty, S. R., Ruiz-Treviño, A. S., Omay, S. B., Almeida, J. P., Liang, B., Chen, Y. N., Singh, H., Schwartz, T. H.
2017
- **Microsurgical Management of Large, Fusiform, Partially Thrombosed Middle Cerebral Artery (M2) Aneurysm with End-to-End M2 Anastomosis: 3-Dimensional Operative Video.** *Operative neurosurgery (Hagerstown, Md.)*
Singh, H., da Silva, H. B., Straus, D. C., Zeinalizadeh, M., Sekhar, L. N.
2017; 13 (4): 535
- **Transpetrosal approach to petro-clival meningioma.** *Neurosurgical focus*
Elarjani, T., Shetty, R., Singh, H., da Silva, H. B., Sekhar, L. N.
2017; 43 (VideoSuppl2): V1
- **Serum albumin level in spontaneous subarachnoid haemorrhage: More than a mere nutritional marker!** *British journal of neurosurgery*
Kapoor, A., Dhandapani, S., Gaudihalli, S., Dhandapani, M., Singh, H., Mukherjee, K. K.
2017: 1
- **Endoscopic endonasal odontoid resection with real-time intraoperative image-guided computed tomography: report of 4 cases.** *Journal of neurosurgery*
Singh, H., Rote, S., Jada, A., Bander, E. D., Almodovar-Mercado, G. J., Essayed, W. I., Härtl, R., Anand, V. K., Schwartz, T. H., Greenfield, J. P.
2017: 1–6
- **Basilar Artery Ectasia Causing Trigeminal Neuralgia: An Evolved Technique of Transpositional Suture-Pexy** *Oper Neurosurg (Hagerstown)*
Singh, H., da Silva, H. B., Zeinalizadeh, M., Elarjani, T., Straus, D., Sekhar, L. N.
2017; opx087: 194–99
- **Endoscopic endonasal versus transcranial approach to tuberculum sellae and planum sphenoidale meningiomas in a similar cohort of patients.** *Journal of neurosurgery*
Bander, E. D., Singh, H., Ogilvie, C. B., Cusic, R. C., Pisapia, D. J., Tsiouris, A. J., Anand, V. K., Schwartz, T. H.
2017: 1–9
- **Cavernous Sinus Invasion in Pituitary Adenomas: Systematic Review and Pooled Data Meta-Analysis of Radiologic Criteria and Comparison of Endoscopic and Microscopic Surgery** *WORLD NEUROSURGERY*
Dhandapani, S., Singh, H., Negm, H. M., Cohen, S., Anand, V. K., Schwartz, T. H.
2016; 96: 36-46

- **Resection of pituitary tumors: endoscopic versus microscopic.** *Journal of neuro-oncology*
Singh, H., Essayed, W. I., Cohen-Gadol, A., Zada, G., Schwartz, T. H.
2016; 130 (2): 309-317
- **Required Reading: The Most Impactful Articles in Endoscopic Endonasal Skull Base Surgery.** *World neurosurgery*
Zhang, M., Singh, H., Almodovar-Mercado, G. J., Anand, V. K., Schwartz, T. H.
2016; 92: 499-512 e2
- **Impact of Early Leukocytosis and Elevated High-Sensitivity C-Reactive Protein on Delayed Cerebral Ischemia and Neurologic Outcome After Subarachnoid Hemorrhage.** *World neurosurgery*
Srinivasan, A., Aggarwal, A., Gaudihalli, S., Mohanty, M., Dhandapani, M., Singh, H., Mukherjee, K. K., Dhandapani, S.
2016; 90: 91-95
- **Nonrandom spatial clustering of spontaneous anterior fossa cerebrospinal fluid fistulas and predilection for the posterior cribriform plate.** *Journal of neurosurgery*
Murray, R. D., Friedlander, R., Hanz, S., Singh, H., Anand, V. K., Schwartz, T. H.
2016: 1-5
- **Pediatric Endonasal Endoscopic Skull Base Surgery: A Case Based Manual.**
Singh, H., Greenfield, J., Anand, V., Schwartz, T.
Endo-Press, Tuttlingen, Germany..2016
- **Fundamentals of Spine Surgery.** *Spine Surgery: Techniques, Complication Avoidance, and Management*
Singh, H., Ghobrial, G., Haan, S., Harrop, J.
Saunders.2016; 4th Ed.
- **Scoliotic Cervical Deformity.** *Spine Surgery: Techniques, Complication Avoidance, and Management*
Singh, H., Ghobrial, G., Harrop, J.
Saunders.2016; 4th Ed.
- **Minimally Invasive Lumbar Pedicle Screw Fixation Using Cortical Bone Trajectory - A Prospective Cohort Study on Postoperative Pain Outcomes.** *Cure˘us*
Chen, Y., Deb, S., Pham, L., Singh, H.
2016; 8 (7)
- **Intraoperative Neurophysiological Monitoring for Endoscopic Endonasal Approaches to the Skull Base: A Technical Guide.** *Scientifica*
Singh, H., Vogel, R. W., Lober, R. M., Doan, A. T., Matsumoto, C. I., Kenning, T. J., Evans, J. J.
2016; 2016: 1751245-?
- **Reoperative endoscopic endonasal surgery for residual or recurrent pituitary adenomas.** *Journal of neurosurgery*
Negm, H. M., Al-Mahfoudh, R., Pai, M., Singh, H., Cohen, S., Dhandapani, S., Anand, V. K., Schwartz, T. H.
2016: 1-12
- **Endonasal Access to the Upper Cervical Spine: Part 2-Cadaveric Analysis.** *Journal of neurological surgery. Part B, Skull base*
Singh, H., Lober, R. M., Virdi, G. S., Lopez, H., Rosen, M., Evans, J.
2015; 76 (4): 262-265
- **Endoscopic approaches to the cervical spine: analyzing the state of the evidence** *Minerva Ortopedica e Traumatologica*
Singh, H., Moraff, A., Evans, J.
2015; 66 (1): 63-70
- **Cervical Open Reduction Techniques - Anterior and Posterior Approach.** *Handbook of Spine Surgery*
Singh, H., Ghobrial, G., Harrop, J.
Thieme.2015; 2nd Ed.
- **History of simulation in medicine: from resusci annie to the ann myers medical center.** *Neurosurgery*
Singh, H., Kalani, M., Acosta-Torres, S., El Ahmadi, T. Y., Loya, J., Ganju, A.
2013; 73: S9-S14
- **Endonasal Access to the Upper Cervical Spine, Part One: Radiographic Morphometric Analysis** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*

- Singh, H., Grobelny, B. T., Harrop, J., Rosen, M., Lober, R. M., Evans, J.
2013; 74 (3): 176-184
- **Brain tuberculoma in a non-endemic area.** *Infectious disease reports*
Lober, R. M., Veeravagu, A., Singh, H.
2013; 5 (1)
 - **Traumatic epistaxis: Skull base defects, intracranial complications and neurosurgical considerations.** *International journal of surgery case reports*
Veeravagu, A., Joseph, R., Jiang, B., Lober, R. M., Ludwig, C., Torres, R., Singh, H.
2013; 4 (8): 656-661
 - **Extradural Spinal Meningiomas.** *Tumors of the central nervous system. Vol 10*
Hanna, A., Nguyen, P., Singh, H., Harrop, J.
Springer.2013
 - **Primary spinal germ cell tumors: a case analysis and review of treatment paradigms.** *Case reports in medicine*
Loya, J. J., Jung, H., Temmins, C., Cho, N., Singh, H.
2013; 2013: 798358-?
 - **Thoracolumbar spine fractures: State of the Evidence.** *The Evidence for Neurosurgery*
Ghobrial, G., Singh, H., Harrop, J.
Tfm Publishing Limited.2012; 1st Ed.
 - **Anterior Odontoid Resection: The Transoral Approach.** *Operative Techniques: Spine Surgery*
Ghobrial, G., Baron, E., Choi, D., Singh, H., Harrop, J., Vaccaro, A., Crockard, A.
Saunders.2012; 2nd Ed.
 - **Fundamentals of Spine Surgery.** *Spine Surgery: Techniques, Complication Avoidance, and Management*
Singh, H., Harrop, J.
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 - **Scoliotic Cervical Deformity.** *Spine Surgery: Techniques, Complication Avoidance, and Management*
Singh, H., Ghobrial, G., Harrop, J.
Saunders.2012; 3rd Ed.
 - **Timing of decompression surgery for traumatic spinal cord injury in a patient with an incomplete myelopathy.** *Spine Surgery: Techniques, Complication Avoidance, and Management*
Teufack, S., Singh, H., Harrop, J.
Saunders.2012; 3rd Ed.
 - **High-resolution ultrasonography in the diagnosis and intraoperative management of peripheral nerve lesions** Clinical article *JOURNAL OF NEUROSURGERY*
Lee, F. C., Singh, H., Nazarian, L. N., Ratliff, J. K.
2011; 114 (1): 206-211
 - **Cervical Open Reduction Techniques - Anterior and Posterior Approach.** *Handbook of Spine Surgery*
Singh, H., Ghobrial, G., Harrop, J.
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 - **Dorsal Epidural Intervertebral Disk Herniation With Atypical Radiographic Findings: Case Report and Literature Review** *JOURNAL OF SPINAL CORD MEDICINE*
Teufack, S. G., Singh, H., Harrop, J., Ratliff, J.
2010; 33 (3): 268-271
 - **Ventral surgical approaches to craniovertebral junction chordomas.** *Neurosurgery*
Singh, H., Harrop, J., Schiffmacher, P., Rosen, M., Evans, J.
2010; 66 (3): 96-103
 - **Ventral Surgical Approaches to Craniovertebral Junction Chordomas.** *Neurosurgery*
Singh, H., Harrop, J., Schiffmacher, P., Rosen, M., Evans, J.
2010; 66 (suppl_3): A96-A103

- **Curvularia fungi presenting as a large cranial base meningioma: case report.** *Neurosurgery*
Singh, H., Irwin, S., Falowski, S., Rosen, M., Kenyon, L., Jungkind, D., Evans, J.
2008; 63 (1): E177-?