

Stanford



Atman Desai, MD

Clinical Associate Professor, Neurosurgery

CLINICAL OFFICES

- **Stanford Neuroscience Health Center**

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ACADEMIC CONTACT INFORMATION

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Bio

BIO

Atman Desai, MD, MA, FAANS, is a Associate Professor of Neurosurgery at Stanford University Medical Center. Dr. Desai received his medical degree from the University of Cambridge. He completed his residency in Neurological Surgery at Dartmouth-Hitchcock Medical Center and a fellowship in Spinal Oncology and Complex Spinal Reconstruction at Johns Hopkins Hospital. He focuses on the surgical treatment of spinal tumors and spinal deformity. He performed the first robotic-assisted spine surgery at Stanford, and has particular interest in robotic and minimally invasive surgical treatments.

CLINICAL FOCUS

- Robotic Spinal Surgery
- Spinal Tumors
- Minimally Invasive Surgery
- Spinal Degenerative Disease
- CyberKnife Radiosurgery
- Neurosurgery

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Neurosurgery

ADMINISTRATIVE APPOINTMENTS

- Vice Chair, Neurosurgery Quality Council, STANFORD UNIVERSITY, (2018- present)
- Director of Neurosurgical Spine Oncology, Stanford University, (2015- present)
- Clinical Assistant Professor of Neurosurgery, Stanford University, (2014- present)
- Instructor of Neurosurgery, Johns Hopkins Hospital, (2013-2014)

HONORS AND AWARDS

- Alpha Omega Alpha, Dartmouth College

- Henry Roy Dean Award, University of Cambridge
- NREF Post-Residency Clinical Fellowship Award, Neurosurgery Research and Education Foundation

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Stanford Cancer Institute (2016 - present)
- Faculty, American Association of Neurological Surgeons Coding and Reimbursement (2015 - present)
- Member, Bio-X (2015 - present)
- Member, Population Health Sciences (2015 - present)
- Committee Member, American Association of Neurological Surgeons (2014 - present)
- Member, Congress of Neurological Surgeons (2006 - present)
- Member, AO Spine North America (2014 - present)

PROFESSIONAL EDUCATION

- Fellowship: Johns Hopkins Neurosurgery Spine Fellowship (2014) MD
- Residency: Dartmouth Hitchcock Medical Center Neurosurgery Residency (2013) NH
- Internship: Dartmouth Hitchcock Medical Center Neurosurgery Residency (2007) NH
- Board Certification, American Board of Neurological Surgery (2018)
- Medical Education: University of Cambridge School of Clinical Medicine (2005) England
- MA, University of Cambridge (2006)
- BA, University of Cambridge (2002)

LINKS

- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Our laboratory aims to analyze and solve healthcare problems relating to neurosurgical care and spine care on a population level. Through the development of algorithms that can be applied to various large national and state-level healthcare datasets, our goal is to harness big data to:

1. Understand how quality in neurosurgical care and spine care can be defined in both short and long-term measures
2. Develop appropriate measures of quality neurosurgical and spine care
3. Create benchmarks for care in neurosurgery and spine surgery
4. Create multivariate bio-statistical models of pre-operative, peri-operative and post-operative events and long term patient outcomes
5. Understand how existing paradigms in neurosurgical care and spine care can be potentially improved to improve patient outcomes

In addition to our population level research, our laboratory has been a national pioneer in integrating prospective outcomes driven medical informative and database systems into the electronic health record. This allows us to identify pre- and post-operative treatment measures that influence patient outcomes, and in doing so improve patient safety and maximize the efficacy of current treatments for neurosurgical and spine patients.

Publications

PUBLICATIONS

- **Outcomes After Cervical Disc Arthroplasty Versus Stand-Alone Anterior Cervical Discectomy and Fusion: A Meta-Analysis** *GLOBAL SPINE JOURNAL*
Gendreau, J. L., Kim, L. H., Prins, P. N., D'Souza, M., Rezaii, P., Pendharkar, A., Sussman, E. S., Ho, A. L., Desai, A. M.
2019
- **Propensity-matched Comparison of Outcomes and Costs After Macroscopic and Microscopic Anterior Cervical Corpectomy Using a National Longitudinal Database.** *Spine*
Ho, A. L., Rezaii, P. G., Pendharkar, A. V., Sussman, E. S., Veeravagu, A., Ratliff, J. K., Desai, A. M.
2019; 44 (21): E1281–E1288
- **Conventional Versus Stereotactic Image-guided Pedicle Screw Placement During Posterior Lumbar Fusions: A Retrospective Propensity Score-matched Study of a National Longitudinal Database.** *Spine*
Pendharkar, A. V., Rezaii, P. G., Ho, A. L., Sussman, E. S., Veeravagu, A., Ratliff, J. K., Desai, A. M.
2019; 44 (21): E1272–E1280
- **Trends in Anterior Lumbar Interbody Fusion in the United States: A MarketScan Study From 2007 to 2014.** *Clinical spine surgery*
Varshneya, K., Medress, Z. A., Jensen, M., Azad, T. D., Rodrigues, A., Stienen, M. N., Desai, A., Ratliff, J. K., Veeravagu, A.
2019
- **Objective measures of functional impairment for degenerative diseases of the lumbar spine: a systematic review of the literature** *SPINE JOURNAL*
Stienen, M. N., Ho, A. L., Staartjes, V. E., Maldaner, N., Veeravagu, A., Desai, A., Gautschi, O. P., Bellut, D., Regli, L., Ratliff, J. K., Park, J.
2019; 19 (7): 1276–93
- **Patient Satisfaction and Press Ganey Scores for Spine Versus Nonspine Neurosurgery Clinics.** *Clinical spine surgery*
Chen, Y., Johnson, E., Montalvo, C., Stratford, S., Veeravagu, A., Tharin, S., Desai, A., Ratliff, J., Shuer, L., Park, J.
2019
- **Socioeconomic Predictors of Surgical Resection and Survival for Patients With Osseous Spinal Neoplasms** *CLINICAL SPINE SURGERY*
Deb, S., Brewster, R., Pendharkar, A., Veeravagu, A., Ratliff, J., Desai, A.
2019; 32 (3): 125–31
- **Clinical efficacy of frameless stereotactic radiosurgery in the management of spinal metastases from thyroid carcinoma.** *Spine*
Hariri, O., Takayanagi, A., Lischalk, J., Desai, K., Florence, T. J., Yazdian, P., Chang, S. D., Vrionis, F., Adler, J. R., Quadri, S. A., Desai, A.
2019
- **Reliability of the 6-minute walking test smartphone application.** *Journal of neurosurgery. Spine*
Stienen, M. N., Gautschi, O. P., Staartjes, V. E., Maldaner, N., Sosnova, M., Ho, A. L., Veeravagu, A., Desai, A., Zygorakis, C. C., Park, J., Regli, L., Ratliff, J. K.
2019: 1–8
- **Socioeconomic Predictors of Pituitary Surgery.** *Cureus*
Deb, S., Vyas, D. B., Pendharkar, A. V., Rezaii, P. G., Schoen, M. K., Desai, K., Gephart, M. H., Desai, A.
2019; 11 (1): e3957
- **Analysis of Outcomes and Cost of Inpatient and Ambulatory Anterior Cervical Disk Replacement Using a State-level Database.** *Clinical spine surgery*
Purger, D. A., Pendharkar, A. V., Ho, A. L., Sussman, E. S., Veeravagu, A., Ratliff, J. K., Desai, A. M.
2019
- **Trans-Oral Endoscopic Resection of High Cervical Osteophytes with Long-term Symptom Resolution: Case Series, Imaging, and Literature Review.** *World neurosurgery*
Jabarkheel, R., Chen, Y., Xu, L., Yan, C. H., Patel, Z. M., Desai, A. M.
2018

- **Anterior Techniques in Managing Cervical Disc Disease.** *Cureus*
Kim, L. H., D'Souza, M., Ho, A. L., Pendharkar, A. V., Sussman, E. S., Rezaii, P., Desai, A.
2018; 10 (8): e3146
- **Outpatient spine surgery: defining the outcomes, value, and barriers to implementation.** *Neurosurgical focus*
Pendharkar, A. V., Shahin, M. N., Ho, A. L., Sussman, E. S., Purger, D. A., Veeravagu, A., Ratliff, J. K., Desai, A. M.
2018; 44 (5): E11
- **Propensity-matched comparison of outcomes and cost after macroscopic and microscopic lumbar discectomy using a national longitudinal database.** *Neurosurgical focus*
Pendharkar, A. V., Rezaii, P. G., Ho, A. L., Sussman, E. S., Purger, D. A., Veeravagu, A., Ratliff, J. K., Desai, A. M.
2018; 44 (5): E12
- **Efficacy and safety of corpus callosotomy after vagal nerve stimulation in patients with drug-resistant epilepsy** *JOURNAL OF NEUROSURGERY*
Hong, J., Desai, A., Thadani, V. M., Roberts, D. W.
2018; 128 (1): 277–86
- **Preoperative depression, lumbar fusion, and opioid use: an assessment of postoperative prescription, quality, and economic outcomes.** *Neurosurgical focus*
O'Connell, C., Azad, T. D., Mittal, V., Vail, D., Johnson, E., Desai, A., Sun, E., Ratliff, J. K., Veeravagu, A.
2018; 44 (1): E5
- **Impact of Inpatient Venous Thromboembolism Continues After Discharge: Retrospective Propensity Scored Analysis in a Longitudinal Database** *CLINICAL SPINE SURGERY*
Li, A. Y., Azad, T. D., Veeravagu, A., Bhatti, I., Li, A., Cole, T., Desai, A., Ratliff, J. K.
2017; 30 (10): E1392–E1398
- **Spine Stereotactic Radiosurgery: Outcomes and Predictors of Local Recurrence**
Kumar, K. A., Fujimoto, D. K., White, E. C., Ho, C. K., Azoulay, M., Gibbs, I. C., Adler, J. R., Chang, S. D., Hancock, S. L., Desai, A., Ratliff, J., Soltys, S. G., Choi, et al
ELSEVIER SCIENCE INC.2017: E86
- **Stereotactic Radiosurgery for Benign Neurogenic Spinal Tumors**
Chin, A. L., Fujimoto, D. K., Tse, V., Chang, S. D., Adler, J. R., Gibbs, I. C., Dodd, R. L., Li, G., Gephart, M. H., Desai, A., Ratliff, J., Sachdev, S., Soltys, et al
ELSEVIER SCIENCE INC.2017: S186
- **Outpatient vs Inpatient Anterior Cervical Discectomy and Fusion: A Population-Level Analysis of Outcomes and Cost.** *Neurosurgery*
Purger, D. A., Pendharkar, A. V., Ho, A. L., Sussman, E. S., Yang, L., Desai, M., Veeravagu, A., Ratliff, J. K., Desai, A.
2017
- **Predicting complication risk in spine surgery: a prospective analysis of a novel risk assessment tool.** *Journal of neurosurgery. Spine*
Veeravagu, A., Li, A., Swinney, C., Tian, L., Moraff, A., Azad, T. D., Cheng, I., Alamin, T., Hu, S. S., Anderson, R. L., Shuer, L., Desai, A., Park, et al
2017: 1-11
- **The effect of socioeconomic status on gross total resection, radiation therapy and overall survival in patients with gliomas.** *Journal of neuro-oncology*
Deb, S., Pendharkar, A. V., Schoen, M. K., Altekruze, S., Ratliff, J., Desai, A.
2017
- **Cervical Osteochondroma Causing Myelopathy in Adults: Management Considerations and Literature Review** *WORLD NEUROSURGERY*
Veeravagu, A., Li, A., Shuer, L. M., Desai, A. M.
2017; 97
- **Impact of Inpatient Venous Thromboembolism Continues After Discharge: Retrospective Propensity Scored Analysis in a Longitudinal Database.** *Clinical spine surgery*
Li, A. Y., Azad, T. D., Veeravagu, A., Bhatti, I., Li, A., Cole, T., Desai, A., Ratliff, J. K.
2016: -?
- **Surgical outcomes of cervical spondylotic myelopathy: an analysis of a national, administrative, longitudinal database.** *Neurosurgical focus*
Veeravagu, A., Connolly, I. D., Lamsam, L., Li, A., Swinney, C., Azad, T. D., Desai, A., Ratliff, J. K.
2016; 40 (6): E11-?

- **Cervical Fusion for Absent Pedicle Syndrome Manifesting with Myelopathy** *WORLD NEUROSURGERY*
Goodwin, C. R., Desai, A., Khattab, M. H., Elder, B. D., Bydon, A., Wolinsky, J.
2016; 86
- **Epidural spinal involvement of Erdheim-Chester disease causing myelopathy** *JOURNAL OF CLINICAL NEUROSCIENCE*
Hwang, B. Y., Liu, A., Kern, J., Goodwin, C. R., Wolinsky, J. P., Desai, A.
2015; 22 (9): 1532-1536
- **Anterior Versus Posterior Approach for Multilevel Degenerative Cervical Disease A Retrospective Propensity Score-Matched Study of the MarketScan Database** *SPINE*
Cole, T., Veeravagu, A., Zhang, M., Azad, T. D., Desai, A., Ratliff, J. K.
2015; 40 (13): 1033-1038
- **SPORT: Does Incidental Durotomy Affect Longterm Outcomes in Cases of Spinal Stenosis?** *Neurosurgery*
Desai, A., Ball, P. A., Bekelis, K., Lurie, J., Mirza, S. K., Tosteson, T. D., Weinstein, J. N.
2015; 76: S57-63
- **Surgical Management of Sacral Chordomas: Illustrative Cases and Current Management Paradigms.** *Cure~us*
Pendharkar, A. V., Ho, A. L., Sussman, E. S., Desai, A.
2015; 7 (8)
- **Utility of Routine Outpatient Cervical Spine Imaging Following Anterior Cervical Corpectomy and Fusion.** *Cure~us*
Desai, A., Pendharkar, A. V., Swienckowski, J. G., Ball, P. A., Lollis, S., Simmons, N. E.
2015; 7 (11)
- **Utility of Provocative Discography** *WORLD NEUROSURGERY*
Gokaslan, Z. L., Desai, A.
2014; 82 (5): 638-639
- **Outpatient follow-up of nonoperative cerebral contusion and traumatic subarachnoid hemorrhage: does repeat head CT alter clinical decision-making?** *JOURNAL OF NEUROSURGERY*
Rubino, S., Zaman, R. A., Sturge, C. R., Fried, J. G., Desai, A., Simmons, N. E., Lollis, S. S.
2014; 121 (4): 944-949
- **Incidence of Sacral Fractures and In-Hospital Postoperative Complications in the United States An Analysis of 2002-2011 Data** *SPINE*
Bydon, M., De la Garza-Ramos, R., Macki, M., Desai, A., Gokaslan, A. K., Bydon, A.
2014; 39 (18): E1103-E1109
- **A predictive model of complications after spine surgery: the National Surgical Quality Improvement Program (NSQIP) 2005-2010** *SPINE JOURNAL*
Bekelis, K., Desai, A., Bakhom, S. F., Missios, S.
2014; 14 (7): 1247-1255
- **Predicting inpatient complications from cerebral aneurysm clipping: the Nationwide Inpatient Sample 2005-2009** *JOURNAL OF NEUROSURGERY*
Bekelis, K., Missios, S., MacKenzie, T. A., Desai, A., Fischer, A., Labropoulos, N., Roberts, D. W.
2014; 120 (3): 591-598
- **Outcome prediction in intracranial tumor surgery: the National Surgical Quality Improvement Program 2005-2010** *JOURNAL OF NEURO-ONCOLOGY*
Bekelis, K., Bakhom, S. F., Desai, A., MacKenzie, T. A., Roberts, D. W.
2013; 113 (1): 57-64
- **Variation in Outcomes Across Centers After Surgery for Lumbar Stenosis and Degenerative Spondylolisthesis in the Spine Patient Outcomes Research Trial** *SPINE*
Desai, A., Bekelis, K., Ball, P. A., Lurie, J., Mirza, S. K., Tosteson, T. D., Zhao, W., Weinstein, J. N.
2013; 38 (8): 678-691
- **A Risk Factor-based Predictive Model of Outcomes in Carotid Endarterectomy The National Surgical Quality Improvement Program 2005-2010** *STROKE*
Bekelis, K., Bakhom, S. F., Desai, A., MacKenzie, T. A., Goodney, P., Labropoulos, N.
2013; 44 (4): 1085-?
- **Indications for treatment of recurrent carotid stenosis** *BRITISH JOURNAL OF SURGERY*

- Bekelis, K., Moses, Z., Missios, S., Desai, A., Labropoulos, N.
2013; 100 (4): 440-447
- **Association of a higher density of specialist neuroscience providers with fewer deaths from stroke in the United States population** *JOURNAL OF NEUROSURGERY*
Desai, A., Bekelis, K., Zhao, W., Ball, P. A., Erkmen, K.
2013; 118 (2): 431-436
 - **Occipitotemporal hippocampal depth electrodes in intracranial epilepsy monitoring: safety and utility** *JOURNAL OF NEUROSURGERY*
Bekelis, K., Desai, A., Kotlyar, A., Thadani, V., Jobst, B. C., Bujarski, K., Darcey, T. M., Roberts, D. W.
2013; 118 (2): 345-352
 - **Interictal PET and ictal subtraction SPECT: Sensitivity in the detection of seizure foci in patients with medically intractable epilepsy** *EPILEPSIA*
Desai, A., Bekelis, K., Thadani, V. M., Roberts, D. W., Jobst, B. C., Duhaime, A., Gilbert, K., Darcey, T. M., Studholme, C., Siegel, A.
2013; 54 (2): 341-350
 - **Subdural interhemispheric grid electrodes for intracranial epilepsy monitoring: feasibility, safety, and utility** Clinical article *JOURNAL OF NEUROSURGERY*
Bekelis, K., Radwan, T. A., Desai, A., Moses, Z. B., Thadani, V. M., Jobst, B. C., Bujarski, K. A., Darcey, T. M., Roberts, D. W.
2012; 117 (6): 1182-1188
 - **Spine Patient Outcomes Research Trial: Do Outcomes Vary Across Centers for Surgery for Lumbar Disc Herniation?** *NEUROSURGERY*
Desai, A., Bekelis, K., Ball, P. A., Lurie, J., Mirza, S. K., Tosteson, T. D., Zhao, W., Weinstein, J. N.
2012; 71 (4): 833-842
 - **Computed tomography angiography: improving diagnostic yield and cost effectiveness in the initial evaluation of spontaneous nonsubarachnoid intracerebral hemorrhage** *JOURNAL OF NEUROSURGERY*
Bekelis, K., Desai, A., Zhao, W., Gibson, D., Gologorsky, D., Eskey, C., Erkmen, K.
2012; 117 (4): 761-766
 - **Increased population density of neurosurgeons associated with decreased risk of death from motor vehicle accidents in the United States.** *Journal of neurosurgery*
Desai, A., Bekelis, K., Zhao, W., Ball, P. A.
2012; 117 (3): 599-603
 - **Minimally invasive tubular retractor system for adequate exposure during surgical obliteration of spinal dural arteriovenous fistulas with the aid of indocyanine green intraoperative angiography.** *Journal of neurosurgery. Spine*
Desai, A., Bekelis, K., Erkmen, K.
2012; 17 (2): 160-163
 - **Frameless robotically targeted stereotactic brain biopsy: feasibility, diagnostic yield, and safety** *JOURNAL OF NEUROSURGERY*
Bekelis, K., Badwan, T. A., Desai, A., Roberts, D. W.
2012; 116 (5): 1002-1006
 - **Magnetic resonance imaging/magnetic resonance angiography fusion technique for intraoperative navigation during microsurgical resection of cerebral arteriovenous malformations** *NEUROSURGICAL FOCUS*
Bekelis, K., Missios, S., Desai, A., Eskey, C., Erkmen, K.
2012; 32 (5)
 - **Surgery for Lumbar Degenerative Spondylolisthesis in Spine Patient Outcomes Research Trial** *SPINE*
Desai, A., Ball, P. A., Bekelis, K., Lurie, J., Mirza, S. K., Tosteson, T. D., Zhao, W., Weinstein, J. N.
2012; 37 (5): 406-413
 - **Surgical techniques for investigating the role of the insula in epilepsy: a review** *NEUROSURGICAL FOCUS*
Desai, A., Bekelis, K., Darcey, T. M., Roberts, D. W.
2012; 32 (3)
 - **SPORT: Does Incidental Durotomy Affect Long-term Outcomes in Cases of Spinal Stenosis?** *NEUROSURGERY*
Desai, A., Ball, P. A., Bekelis, K., Lurie, J., Mirza, S. K., Tosteson, T. D., Weinstein, J. N.
2011; 69 (1): 38-44

- **Outcomes after incidental durotomy during first-time lumbar discectomy** *JOURNAL OF NEUROSURGERY-SPINE*
Desai, A., Ball, P. A., Bekelis, K., Lurie, J. D., Mirza, S. K., Tosteson, T. D., Weinstein, J. N.
2011; 14 (5): 647-653
- **Stereotactic depth electrode investigation of the insula in the evaluation of medically intractable epilepsy** *JOURNAL OF NEUROSURGERY*
Desai, A., Jobst, B. C., Thadani, V. M., Bujarski, K. A., Gilbert, K., Darcey, T. M., Roberts, D. W.
2011; 114 (4): 1176-1186
- **Akathisia after mild traumatic head injury Case report** *JOURNAL OF NEUROSURGERY-PEDIATRICS*
Desai, A., Nierenberg, D. W., Duhaime, A.
2010; 5 (5): 460-464
- **How long should cerebrospinal fluid cultures be held to detect shunt infections?** *JOURNAL OF NEUROSURGERY-PEDIATRICS*
Desai, A., Lollis, S. S., Missios, S., Radwan, T., Zuaro, D. E., Schwarzman, J. D., Duhaime, A.
2009; 4 (2): 184-189
- **Hepatology outpatient service provision in secondary care: a study of liver disease incidence and resource costs** *CLINICAL MEDICINE*
Whalley, S., Puvanachandra, P., Desai, A., Kennedy, H.
2007; 7 (2): 119-124
- **Can Asperger syndrome be diagnosed at 26 months old? A genetic high-risk single-case study** *JOURNAL OF CHILD NEUROLOGY*
Baron-Cohen, S., Scott, F., Wheelwright, S., Johnson, M., Bisarya, D., Desai, A., Ahluwalia, J.
2006; 21 (4): 351-356
- **Dissociable aspects of performance on the 5-choice serial reaction time task following lesions of the dorsal anterior cingulate, infralimbic and orbitofrontal cortex in the rat: differential effects on selectivity, impulsivity and compulsivity** *BEHAVIOURAL BRAIN RESEARCH*
Chudasama, Y., Passetti, F., Rhodes, S. E., Lopian, D., Desai, A., Robbins, T. W.
2003; 146 (1-2): 105-119