

Gayle Deutsch, PhD, ABPP-CN

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CLINICAL OFFICE (PRIMARY)

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Bio

BIO

Dr. Gayle Deutsch is a board-certified, fellowship-trained neuropsychologist with Stanford Health Care.

Dr. Deutsch is the lead neuropsychologist at the Stanford Comprehensive Epilepsy Center. She evaluates thinking and memory in a wide variety of neurological disorders, including conditions that damage brain cells (neurodegenerative disorders), such as Alzheimer's disease. She also works with movement disorders, including Parkinson's disease and essential tremor. In addition, she treats myotonic dystrophy, which causes muscle weakness and wasting, and conditions where the immune system attacks the nervous system (neuroimmunological disorders), such as multiple sclerosis.

Dr. Deutsch collaborates on research projects with Stanford University School of Medicine and the Mormino and Wagner Labs at Stanford University. Her work aims to understand cognitive changes in neurological disorders, particularly neurodegenerative disorders, epilepsy, myotonic dystrophy, and multiple sclerosis. Previously, Dr. Deutsch explored how temporal lobe epilepsy affects memory and how specialists can better understand and evaluate memory changes in people with seizure disorders.

Dr. Deutsch has published her findings in leading peer-reviewed journals, such as Alzheimer's & Dementia, Neurology, Journal of Neuroscience, and Proceedings of the National Academy of Sciences. She has also written book chapters on learning disabilities as part of a pediatric neuropsychology handbook. Given her deep expertise, Dr. Deutsch has lectured on a range of topics in aging, epilepsy, myotonic dystrophy, and learning disabilities.

CLINICAL FOCUS

- Neuropsychology
- Pediatric Clinical Neuropsychology
- Clinical Neuropsychology

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, American Academy of Clinical Neuropsychology (2006 - present)
- Fellow, National Academy of Neuropsychology (2005 - present)
- Member, International Neuropsychological Society (1996 - present)

PROFESSIONAL EDUCATION

- Board Certification: Pediatric Clinical Neuropsychology, American Board of Professional Psychology (2016)
- Board Certification: Clinical Neuropsychology, American Board of Professional Psychology (2006)
- PhD Training: Drexel University College of Medicine (1994) PA
- Fellowship, Graduate Hospital of the University of Pennsylvania , Clinical Neuropsychology (1995)
- Internship, University of Pennsylvania Medical Center , Clinical Neuropsychology (1993)

LINKS

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

Publications

PUBLICATIONS

- **Divergent Electrophysiological Responses in the Human Hippocampus During Verbal Memory Processing.** *bioRxiv : the preprint server for biology*
Huang, W., Quabs, J. T., Lyu, D., van Staaldouin, E. K., Pantis, S., Marais, O., Stieger, J., Liang, E., Deutsch, G., He, Z., Buch, V., Parvizi, J.
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- **Alzheimer's Imaging Consortium.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
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- **Synergistic effects of APOE ϵ 4 and Alzheimer's pathology on the neural correlates of episodic remembering in cognitively unimpaired older adults.** *bioRxiv : the preprint server for biology*
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2025
- **Plasma A β 42/A β 40 is sensitive to early cerebral amyloid accumulation and predicts risk of cognitive decline across the Alzheimer's disease spectrum.** *Alzheimer's & dementia : the journal of the Alzheimer's Association*
Trelle, A. N., Young, C. B., Vossler, H., Ramos Benitez, J., Cody, K. A., Mendiola, J. H., Swarovski, M. S., Guen, Y. L., Feinstein, I., Butler, R. R., Channappa, D., Romero, A., Park, et al
2024
- **Prevalence, Demographic, and Clinical Factors Associated With Cognitive Dysfunction in Patients With Neuromyelitis Optica Spectrum Disorder (vol 102, e207965, 2024)** *NEUROLOGY*
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- **Comprehensive proteomics of CSF, plasma, and urine identify DDC and other biomarkers of early Parkinson's disease.** *Acta neuropathologica*
Rutledge, J., Lehallier, B., Zarifkar, P., Losada, P. M., Shahid-Besanti, M., Western, D., Gorijala, P., Ryman, S., Yutsis, M., Deutsch, G. K., Mormino, E., Trelle, A., Wagner, et al
2024; 147 (1): 52
- **Intracranial recordings of the human orbitofrontal cortical activity during self-referential episodic and valenced self-judgments.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
Iravani, B., Kaboodvand, N., Stieger, J. R., Liang, E. Y., Lusk, Z., Fransson, P., Deutsch, G. K., Gotlib, I. H., Parvizi, J.
2024
- **Learning Spectral Fractional Anisotropy and Mean Diffusivity Features as Neuroimaging Biomarkers for Tracking White Matter Integrity Changes in Myotonic Dystrophy Type 1 Patients using Deep Convolutional Neural Networks.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
Kamali, T., Day, J. W., Deutsch, G. K., Sampson, J. B., Murad, A., Chauffy, J., Parker, D., Wozniak, J. R.
2023; 2023: 1-4

- **Long-Term Cognitive and Neuropsychiatric Outcomes in Adults Who Have Received Chimeric Antigen Receptor T-Cell (CAR-T) Therapy for Aggressive Lymphoma at Stanford - a Pilot Feasibility Study**
Scott, B. J., Murray, T., Deutsch, G. K., Lahijani, S., Frank, M. J., Monje, M.
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- **Cognitive Impairment Analysis of Myotonic Dystrophy via Weakly Supervised Classification of Neuropsychological Features.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
Kamali, T., Deutsch, G. K., Hagerman, K. A., Parker, D., Day, J. W., Sampson, J. B., Wozniak, J. R.
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- **Brief assessment of cognitive function in myotonic dystrophy: multicenter longitudinal study using computer-assisted evaluation.** *Muscle & nerve*
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- **Association of CSF Biomarkers with Hippocampal-dependent Memory in Preclinical Alzheimer Disease.** *Neurology*
Trelle, A. N., Carr, V. A., Wilson, E. N., Swarovski, M. S., Hunt, M. P., Toueg, T. N., Tran, T. T., Channappa, D. n., Corso, N. K., Thieu, M. K., Jayakumar, M. n., Nadiadwala, A. n., Guo, et al
2021
- **Toward Developing Robust Myotonic Dystrophy Brain Biomarkers using White Matter Tract Profiles Sub-Band Energy and A Framework of Ensemble Predictive Learning.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
Kamali, T., Parker, D., Day, J. W., Sampson, J., Deutsch, G. K., Wozniak, J. R.
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- **Safety of Plasma Infusions in Parkinson's Disease.** *Movement disorders : official journal of the Movement Disorder Society*
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2020
- **Hippocampal and cortical mechanisms at retrieval explain variability in episodic remembering in older adults.** *eLife*
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- **Tau PET imaging with 18F-PI-2620 in aging and neurodegenerative diseases.** *European journal of nuclear medicine and molecular imaging*
Mormino, E. C., Toueg, T. N., Azevedo, C. n., Castillo, J. B., Guo, W. n., Nadiadwala, A. n., Corso, N. K., Hall, J. N., Fan, A. n., Trelle, A. N., Harrison, M. B., Hunt, M. P., Sha, et al
2020
- **Hippocampal CA1 subfield predicts episodic memory impairment in Parkinson's disease.** *NeuroImage. Clinical*
La, C. n., Linortner, P. n., Bernstein, J. D., Ua Cruadhlaioich, M. A., Fenesy, M. n., Deutsch, G. K., Rutt, B. K., Tian, L. n., Wagner, A. D., Zeineh, M. n., Kerchner, G. A., Poston, K. L.
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- **Hippocampal CA1 subfield predicts episodic memory impairment in Parkinson's disease** *NEUROIMAGE-CLINICAL*
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- **Learning Disabilities** *Handbook of Medical Neuropsychology*
Deutsch, G. K., Davis, R. N.
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- **Repetitive transcranial magnetic stimulation directed to a seizure focus localized by high-density EEG: A case report.** *Epilepsy & behavior case reports*
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2018
- **Accuracy statistics in predicting Independent Activities of Daily Living (IADL) capacity with comprehensive and brief neuropsychological test batteries.** *Applied neuropsychology. Adult*
Karzmark, P. n., Deutsch, G. K.
2017: 1–9
- **Influenza-associated global amnesia and hippocampal imaging abnormality.** *Neurocase*
Lopez, J., Lomen-Hoerth, C., Deutsch, G. K., Kerchner, G. A., Koshy, A.
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- **APOE {varepsilon}4 worsens hippocampal CA1 apical neuropil atrophy and episodic memory.** *Neurology*
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- **Shared vulnerability of two synaptically-connected medial temporal lobe areas to age and cognitive decline: a seven tesla magnetic resonance imaging study.** *journal of neuroscience*
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- **Comparison of the Frontal Systems Behavior Scale and Neuropsychological Tests of Executive Functioning in Predicting Instrumental Activities of Daily Living** *APPLIED NEUROPSYCHOLOGY*
Karzmark, P., Llanes, S., Tan, S., Deutsch, G., Zeifert, P.
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- **Anatomical Properties of the Arcuate Fasciculus Predict Phonological and Reading Skills in Children** *JOURNAL OF COGNITIVE NEUROSCIENCE*
Yeatman, J. D., Dougherty, R. F., Rykhlevskaia, E., Sherbondy, A. J., Deutsch, G. K., Wandell, B. A., Ben-Shachar, M.
2011; 23 (11): 3304-3317
- **The Development of Cortical Sensitivity to Visual Word Forms** *JOURNAL OF COGNITIVE NEUROSCIENCE*
Ben-Shachar, M., Dougherty, R. F., Deutsch, G. K., Wandell, B. A.
2011; 23 (9): 2387-2399
- **Learning Disabilities** *Handbook of Medical Neuropsychology*
GK, D., RN, D.
Springer.2010
- **Frontoparietal white matter diffusion properties predict mental arithmetic skills in children** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Tsang, J. M., Dougherty, R. F., Deutsch, G. K., Wandell, B. A., Ben-Shachar, M.
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- **Reading impairment in a patient with missing arcuate fasciculus** *NEUROPSYCHOLOGIA*
Rauschecker, A. M., Deutsch, G. K., Ben-Shachar, M., Schwartzman, A., Perry, L. M., Dougherty, R. F.
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- **Contrast responsivity in MT plus correlates with phonological awareness and reading measures in children** *NEUROIMAGE*
Ben-Shachar, M., Dougherty, R. F., Deutsch, G. K., Wandell, B. A.

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Dougherty, R. F., Ben-Shachar, M., Deutsch, G. K., Hernandez, A., Fox, G. R., Wandell, B. A.
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- **Functional and morphometric brain dissociation between dyslexia and reading ability** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
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- **Neural correlates of rapid auditory processing are disrupted in children with developmental dyslexia and ameliorated with training: An fMRI study** *RESTORATIVE NEUROLOGY AND NEUROSCIENCE*
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- **Neural deficits in children with dyslexia ameliorated by behavioral remediation: Evidence from functional MRI** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
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- **Disrupted neural responses to phonological and orthographic processing in dyslexic children: an fMRI study** *NEUROREPORT*
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2001; 12 (2): 299-307
- **Hemispheric asymmetries in arousal affect outcome of the intracarotid amobarbital test** *NEUROLOGY*
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- **Differential lateralization of memory discrimination and response bias in temporal lobe epilepsy patients** *JOURNAL OF THE INTERNATIONAL NEUROPSYCHOLOGICAL SOCIETY*
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- **Psychogenic events presenting as parasomnia** *SLEEP*
Molaie, M., Deutsch, G. K.
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- **Metamemory in temporal lobe epilepsy** *ASSESSMENT*
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- **Patterns of reorganization of memory functions within and between cerebral hemispheres as assessed by the intracarotid amobarbital test** *NEUROPSYCHOLOGY*
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