Stanford

Joel Fundaun

Postdoctoral Scholar, Anesthesiology, Perioperative and Pain Medicine

Bio

BIO

Joel Fundaun is a clinician-scientist specializing in chronic pain following traumatic head and neck injuries. His research aims to identify the drivers of pain persistence and develop tools to better predict recovery after traumatic injuries. By integrating clinical phenotyping, neuroimaging, and molecular biomarkers, he investigates why some individuals develop chronic pain while others recover.

Joel earned his Doctor of Physical Therapy from Regis University and completed an Orthopaedic Physical Therapy Residency at Northwestern University–Shirley Ryan AbilityLab. He received his DPhil (PhD) in Clinical Neurosciences from the University of Oxford, where his doctoral research identified novel signs of nerve injury and neuropathic pain in whiplash-associated disorders.

Currently, he is a Postdoctoral Research Fellow at Stanford University. He also continues to work clinically as a physical therapist at the Stanford Pain Management Center, where he treats patients with complex chronic pain conditions.

PROFESSIONAL EDUCATION

- PhD, University of Oxford , Clinical Neurosciences (2024)
- Residency, Northwestern University-Shirley Ryan AbilityLab , Orthoaepdic Physical Therapy (2018)
- DPT, Regis University , Doctor Of Physical Therapy (2017)
- BS, University of Wyoming , Kinesiology & Health Promotion (2013)

STANFORD ADVISORS

- Kenneth Weber, Postdoctoral Faculty Sponsor

LINKS

- Google Scholar: https://scholar.google.com/citations?user=I1IXyEMAAAAJ&hl=en&oi=ao
- LinkedIn: https://www.linkedin.com/in/joel-fundaun-9a2290341/
- Personal Site: https://jfundaun.github.io/index.html
- Lab Site: http://nilab.sites.stanford.edu/

Research & Scholarship

PROJECTS

- MRI-Derived Neuromuscular Signatures to Predict Surgical Response in Degenerative Cervical Myelopathy - Stanford University

Publications

PUBLICATIONS

- **Serum neurofilament light chain in fibromyalgia: comparative evidence of neuronal injury across chronic pain conditions.** *Pain reports*
  Fundaun, J., Kelleher, E., Coxon, L., Wall, A., John, J., Garbutt, K., Themistocleous, A. C., Terajima, Y., Bennett, D. L., Vincent, K., Irani, A., Schmid, A. B.
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- **Neuro-immune contributors to persistent musculoskeletal pain: from mechanisms to clinical assessment and management.** *Musculoskeletal science & practice*
  Ridehalgh, C., Fundaun, J., Farrell, S.
  2025; 81: 103468

- **Differential encoding of noxious heat and self-reported pain along corticospinal networks: a simultaneous spinal cord-brain fMRI study.** *bioRxiv : the preprint server for biology*
  Pfyffer, D., Wang, Y., Kaptan, M., Fundaun, J., Dildine, T. C., Oliva, V., Indriolo, T., Skare, S., Sprenger, T., Lee, P. K., Truong, M., Weber, K. A., Glover, et al
  2025

- **Automated Segmentation of Forearm Muscles: Clinical Associations With Hand Function, Muscle Volume and Intramuscular Fat.** *JCSM communications*
  Fundaun, J., Oliva, V., Bédard, S., Wesselink, E. O., Lynn, B. P., Pai S, A., Pfyffer, D., Kaptan, M., Berhe, N., Ratliff, J., Hu, S. S., Smith, Z. A., Hastie, et al
  2025; 8 (2): e70015

- **Temporal development of peripheral neuroinflammation in whiplash-associated disorder grade II and its role in chronicity.** *Pain*
  Ridehalgh, C., Fundaun, J., Bremner, S., Cercignani, M., Koushesh, S., Schmid, A. B., Dilley, A.
  2025

- **The presence and prognosis of nerve pathology following whiplash injury: a prospective cohort study.** *Brain : a journal of neurology*
  Fundaun, J., Ridehalgh, C., Koushesh, S., Novak, A., Tejos-Bravo, M., Bremner, S., Baskozos, G., Dilley, A., Schmid, A. B.
  2025

- **Evidence for peripheral neuroinflammation after acute whiplash.** *Pain*
  Ridehalgh, C., Fundaun, J., Bremner, S., Cercignani, M., Koushesh, S., Young, R., Novak, A., Greening, J., Schmid, A. B., Dilley, A.
  2025

- **Effect of Type and Dose of Exercise on Neuropathic Pain After Experimental Sciatic Nerve Injury: A Preclinical Systematic Review and Meta-Analysis.** *The journal of pain*
  Matesanz-García, L., Billerot, C., Fundaun, J., Schmid, A. B.
  2023; 24 (6): 921-938

- **Does peripheral neuroinflammation predict chronicity following whiplash injury? Protocol for a prospective cohort study.** *BMJ open*
  Ridehalgh, C., Fundaun, J., Bremner, S., Cercignani, M., Young, R., Trivedy, C., Novak, A., Greening, J., Schmid, A., Dilley, A.
  2022; 12 (12): e066021

- **Types and Concentrations of Blood-Based Biomarkers in Adults With Peripheral Neuropathies: A Systematic Review and Meta-analysis.** *JAMA network open*
  Fundaun, J., Kolski, M., Molina-Álvarez, M., Baskozos, G., Schmid, A. B.
  2022; 5 (12): e2248593

- **The power of integrating data: advancing pain research using meta-analysis.** *Pain reports*
  Fundaun, J., Thomas, E. T., Schmid, A. B., Baskozos, G.
  2022; 7 (6): e1038

- **Nerve pathology and neuropathic pain after whiplash injury: a systematic review and meta-analysis.** *Pain*
  Fundaun, J., Kolski, M., Baskozos, G., Dilley, A., Sterling, M., Schmid, A. B.
  2022; 163 (7): e789-e811

- **[Entrapment neuropathies: a contemporary approach to pathophysiology, clinical assessment, and management : German version].** *Schmerz (Berlin, Germany)*
  Schmid, A. B., Fundaun, J., Tampin, B.
  2021; 35 (6): 419-433

- **Entrapment neuropathies: a contemporary approach to pathophysiology, clinical assessment, and management.** *Pain reports*
  Schmid, A. B., Fundaun, J., Tampin, B.
  2020; 5 (4): e829

- **Does Overall Cervical Spine Pathology Relate to the Clinical Heterogeneity of Chronic Whiplash?** *The American journal of emergency medicine*
  Elliott, J. M., Parrish, T. B., Walton, D. M., Vassallo, A. J., Fundaun, J., Wasielewski, M., Courtney, D. M.
  2020; 38 (5): 869-873

- **Muscle fat infiltration following whiplash: A computed tomography and magnetic resonance imaging comparison.** *PloS one*
  Elliott, J. M., Smith, A. C., Hoggarth, M. A., Albin, S. R., Weber, K. A., Haager, M. n., Fundaun, J. n., Wasielewski, M. n., Courtney, D. M., Parrish, T. B.
  2020; 15 (6): e0234061

- **The use of a static measure to predict foot posture at midstance during walking.** *Foot (Edinburgh, Scotland)*
  McPoil, T. G., Ford, J., Fundaun, J., Gallegos, C., Kinney, A., McMillan, P., Murphy, J., Sky, E., Torba, D., Bade, M.
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