

Patrick Freund

Spinal Cord Injury Center
University Hospital Balgrist
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Personal information

29 July 1980, Male, Married, 1 child

Languages

Trilingual (German, English, French)

Scientific research ID

ORCID: 0000-0002-4851-2246

[Google Scholar](#)

Main Research Fields

- Non-invasive imaging of structural and functional changes in neurological disorders
- Methodological development of high-resolution MRI sequences for spinal cord and brain

Qualifications

- 01.2019 **SNF Eccellenza Professor**, University of Zürich, Switzerland
- 09.2016 **Privat Dozent (PD)**, University of Zürich, Switzerland
- 11.2016 **Electromyoneurography certificate**, Academy of the Swiss Society of Clinical Neurophysiology
- 01.2015 **MD (Dr. med.)**, University of Zürich, Switzerland (**09.01.2015**)
- 10.2014 **Master of Medicine**, University of Zürich, Switzerland (**13.10.2014**)
- 10.2011 **Bachelor of Medicine**, University of Zürich, Switzerland (in 4 semesters instead of 6)
- 01.2008 **PhD (Dr. rer. nat.)**, Bilingual University of Fribourg, Switzerland
- 02.2005 **Master of Biology (Dipl.-Biol.)**, Bilingual University of Fribourg, Switzerland (in 6 semesters instead of 8)

Professional History

- 01.2019-Pres. 50% Research Professor at Balgrist, University of Zürich
- 07.2018-Pres. 50% Clinical Residency in Neurology, University Hospital Zürich
- 05.2018-06.2018 100% Clinical Residency in Neurology, Balgrist (May-June)
- 01.2017-04.2018 100% Clinical Residency in Psychiatry, Clénia Schlössli, Oetwil am See, Switzerland
- 01.2017-04.2018 10% Senior Physician, Balgrist, Zürich
- 2015-pres. Honorary Research Associate, Department of Neurophysics, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
- 11.2014-12.2016 100% Clinical Residency in Neurology, Balgrist, Switzerland
- 06.2011-10.2014 50% Senior research Assistant University Hospital Balgrist, Zürich, Switzerland
- 05.2008-05.2011 100% Fellowship from Swiss National Science Foundation for a PostDoc at Wellcome Trust Centre for Neuroimaging, UCL, Institute of Neurology, Queen Square, London

Professorship applications

2020 Initiation of Ad personam Professorship at University of Zurich

2018 Awarded the Heisenberg Professorship jointly at University of Leipzig (potential start 07/20)

2018 Awarded for the SNF Eccellenza Professorship at University of Zurich (start 01/19)

2017 Shortlisted for Associated professorship in Anatomy in University of Fribourg

Academic Supervision

Postdocs

03.2019-Pres Postdoctoral supervision of G. David at SCI Center Balgrist, University Zürich
01.2019-Pres Postdoctoral supervision of Dr Johanna Vannesjo at SCI Center Balgrist, University Zürich
03.2018-Pres Co-supervision of Dr Sanne Kikkert at at SCI Center Balgrist and ETH Zurich
03.2019-Pres Postdoctoral supervision of Dr G. David at Spinal Cord Injury Center Balgrist, University Zürich
01.2017-11.2019 Postdoctoral supervision of Dr P. Kyathanahall at SCI Center Balgrist, University Zürich
02.2016-Pres. Postdoctoral supervision of Dr M. Seif at SCI Center Balgrist, University Zürich
06.2012-09.2012 Co-supervision of Dr S. Mohammadi at the Wellcome Trust Centre for Neuroimaging, UCL, UK

PhDs

02.2021-Pres. PhD primary supervision of S. Schading at SCI Balgrist, University Zürich
04.2019-Pres. PhD primary supervision of T. Emmenegger at SCI Balgrist, University Zürich
01.2017-Pres. PhD primary supervision of D. Pfyffer at SCI Center Balgrist, University Zürich
05.2016-06.2020 PhD primary supervision of M. Azzarito at SCI Center Balgrist, University Zürich
07.2015-02.2019 PhD primary supervision of G. David at SCI Center Balgrist, University Zürich
01.2014-10.2018 PhD primary supervision of E. Huber at SCI Center Balgrist, University Zürich
05.2014-09.2017 PhD co-supervision of C. Blaiotta at the Wellcome Trust Centre for Neuroimaging, UK
07.2013-09.2016 PhD primary supervision of P. Grabher at SCI Center Balgrist, University Zürich
01.2012-10.2015 PhD co-supervision of C. Jutzeler at SCI Center Balgrist, University Zürich
06.2011-10.2013 PhD co-supervision of J. Haefli at SCI Center, University Zürich

MDs

11.2017-12.2019 MD primary supervision of K. Vallaton at SCI Center Balgrist, University Zürich
10.2011-10.2012 MD primary supervision of S. Fries at SCI Center Balgrist, University Zürich

MScs

01.2020-pres MSc primary supervision of S. Hartmann at SCI Balgrist, University Zürich
01.2020-pres MSc primary supervision of C. Achim at SCI Balgrist, University Zürich
10.2019-pres MSc primary supervision of R. Seiler at SCI Balgrist, University Zürich
03.2019-12.2019 MSc primary supervision of D. Grossmann at SCI Balgrist, University Zürich
03.2019-09.2019 MSc primary supervision of S. Jeyaraj at SCI Balgrist, University Zürich
09.2018-05.2019 MSc primary supervision of T. Emmenegger at SCI Balgrist, University Zürich
02.2016-10.2017 MSc primary supervision of D. Beck at SCI Center Balgrist, University Zürich
12.2016-11.2017 MSc primary supervision of G. Bonetti at SCI Center Balgrist, University Zürich
03.2015-01.2016 MSc primary supervision of P. Lachapelle at SCI Center Balgrist, University Zürich
07.2014-05.2015 MSc primary supervision of A. Trachsler at SCI Center Balgrist, University Zürich
03.2014-05.2015 MSc primary supervision of T. Kubin at SCI Center Balgrist, University Zürich

Teaching

- Neurorehabilitation in patients with spinal cord injury (Lehrveranstaltungsnummer: 894, 896, 1261)
- RITZ Neurorehabilitation-Symposium, see www.neuroreha.uzh.ch

Knowledge Transfer

2011-Pres. Transfer of new MRI sequences developed at the Wellcome Trust Centre for Neuroimaging to use for multicenter studies on Siemens MRI scanners (Hospital Nacional de Paraplégicos, Toledo, Spain; SRH Klinikum Karlsbad-Langensteinbach GmbH, Akademisches Lehrkrankenhaus der Universität Heidelberg).

Organizational and Committee Activities

2015 Chair of the symposium: "INSPIRED Network" at University Zürich
2014 Chair of the symposium: "Embodied Neurology" at University Zürich
2012 Chair of the symposium "Quantitative MRI of the spinal cord and brain" ISCOS meeting, London, UK
2010 Chair of the symposium "Human MRI following spinal cord injury" at University Zürich

Awards

2020 *IRP Schellenberg Price*, 50'000 CHF
2020 Best review paper in "Spinal Cord", 400 CHF
2014 Best Master Thesis of the Medical Faculty, University of Zürich
2009-2011 Fellowship from Swiss National Science Foundation, 126'000 CHF
2008-2009 Fellowship from Swiss National Science Foundation, 49'000 CHF

Editorial

2014- Pres. Review editor of *Frontiers in Neurology*

Scientific Outreach

100 Ways of Thinking: Neuroscientists in conversation, [link](#)

Reviewing

2010-Pres. Swiss National Science Foundation (CH), ISRT (UK), Wings for life (A), Craig Neilson Foundation (US), Great Ormond Street Hospital Children's Charity Grants Team (UK), Medical Research Council (UK)
2006-pres. Reviewing for journals of: *Lancet Neurology*, *Nature Reviews Neurology*, *Brain*, *Annals of Neurology*, *Neurology*, *elife*, *JNNP*, *HBM*, *Scientific Reports*, *Neuroimage: Clinical*, *Magnetic Resonance in Medicine*, *Neurorehabilitation and Neural Repair*, *PLoS One*, *Neuroradiology*

Professional Memberships

2016-Pres. Electrophysiological Society of Switzerland
2014-Pres. Neuroscience Center Zurich, Junior Group leader
2014-Pres. Human Brain Mapping
2010-Pers. International Society for Magnetic Resonance in Medicine (ISMRM)
2006-2008 Federation of European Neuroscience (FENS)
2005-2008 Society for Neuroscience (SNF)
2005-Pres. Swiss Society for Neuroscience (SSN)

Invited Talks

- 1) Neurorama, USZ, Zurich (2019)
- 2) Brain Talk, UKE, Hamburg, (2018)
- 3) Kremblin Talk, Toronto Western Hospital (2018)
- 4) MS Alliance Meeting, Toronto (2018)
- 5) EMSCI Meeting, Wien (2018)
- 6) Life Science Impact, Zürich (2018)
- 7) ISMRM 25th Annual Meeting, 2017, Hawaii (2017)
- 8) Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany (2016)
- 9) Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, UK (2015)

- 10) Reeve Foundation's International Research Consortium on Spinal Cord Injury in Zürich (2014)
- 11) International Neurorehabilitation Symposium ETH Zurich, Switzerland (2013)
- 12) Annual Scientific Meeting - International Spinal Cord Society, London, UK (2012)
- 13) Reeve Foundation's International Research Consortium on Spinal Cord Injury, Cambridge, UK (2011)
- 14) Wings for Life Scientific Meeting, Salzburg, Austria (2011)
- 15) Update on cortical reorganization, Kings College, Cambridge (2009)
- 16) Society for Neuroscience, San Diego, US (2008)
- 17) Breaking News in Neuroscience, FENS, Vienna, Austria (2006)

Grants

In total I have acquired as a PI/Co-PI >13M CHF.

05.2020-04.2022	International Research on Paraplegia: Tracking metabolic alterations in the cervical and lumbar SC after SCI using magnetic resonance spectroscopy	145'000 CHF
01.2019-12.2024	Heisenberg Professorship: Interactions between spinal cord and brain during impaired sensorimotor information flow after spinal cord injury	500'000 Euros
01.2019-12.2024	SNF Eccellenza Professorship Fellowship: Interactions between spinal cord and brain during impaired sensorimotor information flow after spinal cord injury	1'500'000 CHF
06.2018-05.2022	SNF Grant CHF 2.6m: Co-PI and work package leader of Neuroimaging Transcutaneous tibial nerve stimulation in patients with acute spinal cord injury to prevent neurogenic detrusor overactivity: A nationwide randomized, placebo-controlled, double-blind clinical trial	
07.2018-12.2021	SNF Project Grant: Interactions of supraspinal and spinal circuits during normal and impaired upper limb movements in humans	449'468 CHF
09.2017-04.2018	InVivo Therapeutics: MRI Clinical Endpoint to Assess Spinal Cord Pathology Following Traumatic Spinal Cord Injury (SCI): Method Development and Comparison of INSPIRE Clinical MRIs to Natural Progression MRIs.	42'196 CHF
07.2017-06.2018	Wings for life: Tracking progressive neurodegenerative processes after spinal cord injury: 5-year follow-up.	125'000 CHF
09.2017-08.2020	European Union "EraNet" CHF 1.0m: Co-PI and work package leader in "Understanding the mechanisms of atrophy associated with spinal cord injury: the application of MRI-based in vivo histology and ex vivo histology" Note, although I wrote and lead this project, for administrative reasons posed by the SNF I could not be the official PI.	200'000 CHF
05.2017-04.2019	International Research on Paraplegia (IRP): MRI investigation of trauma-induced spinal cord changes: a prospective longitudinal study (continuation).	87'000 CHF
09.2016	McGill/Oxford/ZNZ Partnership: Investigation of training induced shape and volume changes within the basal ganglia in patients with spinal cord injury.	6'800 CHF
01.2016-12.2020	European Union "NISC - A multicenter European clinical trial" CHF 6.7m, work package leader for Neuroimaging in "Antibodies against Nogo-A to	850'000 CHF

enhance regeneration and functional recovery after acute spinal cord injury, a multicenter EU clinical proof of concept trial”.

01.2016-12.2018	CRPP Grant University of Zürich (CHF 2.2m), work package leader for Neuroimaging.	171'000 CHF
08.2015-07.2016	Hartmann-Müller Stiftung: MRI investigation of trauma-induced spinal cord changes: a prospective longitudinal study.	25'000 CHF
05.2015-04.2017	International Research on Paraplegia (IRP): MRI investigation of trauma-induced spinal cord changes: a prospective longitudinal study.	110'000 CHF
07.2014-06.2017	Wings for Life: Tracking structural MRI changes in the spinal cord and brain as surrogate markers for interventions in SCI rehabilitation.	301'200 CHF
07.2013-06.2014	UCL-ZNZ seed grant: An SPM-based framework for tracking structural and functional changes in neuroimaging data simultaneously within the spinal cord and brain.	14'800 CHF
03.2012-02.2014	SRH Holding: Relationship between changes in spinal cord morphometry and cortical reorganization to disability following spinal cord injury: a multi-center study.	100'000 CHF
05.2008-05.2011	Swiss Paraplegic Research: Imaging the spinal cord after injury and its effects on brain activation.	133'000 CHF

Publications

Impact of Publications

Google Scholar (12.2020)

Sum of the Times Cited	2450
h-index	25
ih-index	38
Average Journal Impact Factor:	6.85

From a total of 60 publications, I am first or last author of 37 papers, including *Lancet Neurology*, *Nature Reviews Neurology*, *Brain*, *Annals of Neurology* and *Neurology*. My current h-index is 25 (Google Scholar, 11.2020).

Peer Reviewed Publications

2021

- 1) D. Pfyffer, K. Vallotton, A. Curt, **P. Freund**; Tissue bridges predict neuropathic pain emergence after spinal cord injury, *Journal of Neurology, Neurosurgery and Psychiatry*, 91 (10), 1111-1117, *Impact Factor 8.27*; [pdf](#)
- 2) M. Azzarito, S. Kyathanahally, Y. Balbastre, M. Seif, C. Blaiotta, M. Callaghan, J. Ashburner, **P. Freund**; Simultaneous analysis of brain and spinal cord multi-parametric maps within the SPM framework, *Human Brain Mapping*, doi.org/10.1002/hbm.25218, *Impact Factor 4.55*; [pdf](#)
- 3) M. Hupp, N. Pfender, K. Vallotton, J. Rosner, S. Friedl, CM Zipser, R. Sutter, M. Klarhöfer, J.M. Spirig, M. Betz, M. Schubert, **P. Freund**, M. Farshad, A. Curt; The Restless Spinal Cord in Degenerative Cervical Myelopathy, *American Journal of Neuroradiology* 42 (3), 597-609, *Impact Factor 3.65*; [pdf](#)
- 4) M. Walter, L. Leitner, C. Betschart, D. Engeler, **P. Freund**, T. Kessler, S. Kollias, M. Liechti, D. Scheiner, L. Michels, U. Mehnert; Considering non-bladder aetiologies of overactive bladder: a functional neuroimaging study, *BJU International*, <https://doi.org/10.1111/bju.15354>, *Impact Factor 4.8* [pdf](#)
- 5) D. Pfyffer, K. Vallotton, A. Curt, **P. Freund**; Predictive Value of Midsagittal Tissue Bridges on Functional Recovery After Spinal Cord Injury, *Neurorehabilitation and Neural Repair*, Vol 35, Issue 1, 2021, *Impact Factor 4.7*, [pdf](#)

2020

- 6) N. Aldusary, GL Traber, **P. Freund**, F. Fierz, K. Weber, A. Baeshen, J. Alghamdi, B. Saliju, S. Pazahr, R. Mazloum, F. Alshehri, K. Landau, S. Kollias, L. Michels; Abnormal connectivity and brain structure in patients with visual snow; *Frontiers in Human Neuroscience* 14, 476
- 7) T. Fischer, C. Stern, M. Schubert, **P. Freund**, R. Sutter; Wallerian degeneration in cervical spinal cord tracts is commonly seen in routine MRI after traumatic spinal cord injury and is associated with impairment; *European Radiology*; 1-10, *Impact Factor 4.01*; [pdf](#)
- 8) D. Pfyffer, P. Wyss, E. Huber, A. Curt, A. Henning, **P. Freund**; Metabolites of neuroinflammation relate to neuropathic pain after spinal cord injury, *Neurology*, June 26, 2020; *Impact Factor 8.05*; [pdf](#) *Cover Image*
- 9) E. Huber, R. Patel, M. Hupp N. Weiskopf, M. Chakravarty, **P. Freund**; Extraparamidal plasticity predicts recovery after spinal cord injury, *Scientific Reports*, InPress; *Impact Factor 3.99*; ahead of print
- 10) T. Leutritz, M. Seif, G. Helms, R. Samson, A. Curt, **P. Freund**, N. Weiskopf; Multiparameter mapping of relaxation (R1, R2*), proton density and magnetization transfer saturation at 3 T: A multicenter dual-vendor reproducibility and repeatability study; *Human Brain Mapping*, 08 July 2020; *Impact Factor 4.55*; [pdf](#)
- 11) M. Azzarito, M. Seif, S. Kyathanahally, A. Curt, **P. Freund**; Tracking the neurodegenerative gradient after spinal cord injury; *NeuroImage: Clinical*, 102221; *Impact Factor 3.87*; [pdf](#)

- 12) A. Curt, J. Hsieh, M. Schubert, M.Hupp, S. Friedl, **P. Freund**, E. Huber, D. Pfyffer, R.Sutter, C. Jutzeler, R. P. Wüthrich, K. Min, S. Casha, M. G Fehlings, R. Guzman; The Damaged Spinal Cord Is a Suitable Target for Stem Cell Transplantation; **Neurorehabilitation and Neural Repair**, Pages 1545968320935815; **Impact Factor 4.71**; [pdf](#)
- 13) V. Birkhäuser, M. D Liechti, C. E Anderson, L. M Bachmann, S. Baumann, M. Baumberger, L. Birder, S. M Botter, S. Büeler, C. D Cruz, G. David, **P. Freund**, S. Friedl, O. Gross, M. Hund-Georgiadis, K. Husmann, X. Jordan, M. Koschorke, L. Leitner, E. Luca, U. Mehnert, S. Möhr, F. Mohammadzada, K. Monastyrskaya, N. Pfender, D. Pohl, H. Sadri, A.M Sartori, M. Schubert, K.Sprengel, St. A Stalder, J. Stoyanov, C. Stress, A. Tatu, C. Tawadros, S. van der Lely, J. Wöllner, V. Zubler, A. Curt, J. Pannek, M. Brinkhof, T. Kessler; TASCI—transcutaneous tibial nerve stimulation in patients with acute spinal cord injury to prevent neurogenic detrusor overactivity: protocol for a nationwide, randomized sham-controlled, double-blind clinical trial; **BMJ Open**, 10 Issue, 8, Pages e039164; **Impact Factor 2.49**; [pdf](#)

2019

- 14) **P. Freund**, M. Seif, N. Weiskopf, K. Friston, M. G. Fehlings, A. Thompson, and A. Curt; MRI in traumatic spinal cord injury: progress from a clinical assessment tool to a neuroimaging biomarker, **The Lancet Neurology**, InPress; **Impact Factor 27.2**; [pdf](#)
- 15) G. David, S. Mohammadi, A. Martin, J. Cohen-Adad, N. Weiskopf, A. Thompson, **P. Freund**; Spinal cord pathology in traumatic and non-traumatic spinal cord injury; **Nature Reviews Neurology**, 1-14; **Impact Factor 20.2**; [pdf](#)
- 16) D. Pfyffer, E. Huber, R. Sutter, A. Curt, **P. Freund** Tissue bridges predict recovery after traumatic and ischemic thoracic spinal cord injury, **Neurology** 93 (16), e1550-e1560; **Impact Factor 8.05, Cover Image**
- 17) K. Vallotton K, E. Huber, R. Sutter, A. Curt, M. Hupp, and **P. Freund**; Sensorimotor recovery is predicted by width and location of preserved tissue bridges after cervical injury, **Neurology**, June 11, 2019; 92 (24); **Impact Factor 8.05**; [pdf](#)
- 18) G. David, M. Seif, E. Huber, M. Hupp, J. Rosner, V. Dietz, N. Weiskopf, S. Mohammadi, and **P. Freund**; In-vivo evidence of remote neural degeneration in the lumbar enlargement after cervical injury, **Neurology**, 2019 Feb 15. pii: 10.1212/WNL.0000000000007137. **Impact Factor 8.05**; [pdf](#)
- 19) P. Wyss, E. Huber, A. Curt, S. Kollias, **P. Freund** and A. Henning; Magnetic resonance spectroscopy of the cervical spinal cord in chronic spinal cord injury, **Radiology**, 2019 Jan 29:181037. **Impact Factor 7.47**; [pdf](#)
- 20) M. Walter, L. Leitner. L. Michels, M Liechti, **P. Freund**, T Kessler, S Kollias, U Mehnert; Reliability of supraspinal correlates to lower urinary tract stimulation in healthy participants – an fMRI study, **Neuroimage**, 2019 Feb 15;191:481-492. **Impact Factor 5.43**; [pdf](#)
- 21) M. Seif, G.David, E. Huber, K. Vallotton, A. Curt, and **P. Freund**; Cervical cord neurodegeneration in traumatic and non-traumatic spinal cord injury, **J Neurotrauma**, 2020 Mar 15;37(6):860-867. **Impact Factor 5.0**;
- 22) M. Hupp, K. Vallotton, C. Brockmann, S. Huwyler, J. Rosner, R. Sutter, M. Klarhoefer, **P. Freund**, M. Farshad, A. Curt; Segmental differences of cervical spinal cord motion: from confounders to diagnostic tools, **Scientific Report** 9, Article number: 7415 (2019); **Impact Factor 4.1**; [pdf](#)
- 23) M. Seif, C. Gandini Wheeler-Kingshott, J.Cohen-Adad, A.Flanders, **P. Freund**; Guidelines for the conduct of clinical trials in spinal cord injury: Neuroimaging biomarkers; **Spinal Cord**, PP1, 10.1038/s41393-019-0309-x; **Impact Factor 1.96**; [pdf](#)

2018

- 24) E. Huber, G. David, N. Weiskopf, S. Mohammadi, and **P. Freund**; Dorsal and ventral horn atrophy is associated with clinical outcome after spinal cord injury, **Neurology**, 2018 Apr 24;90(17):e1510-e1522. **Impact Factor 8.05**; [pdf](#)
- 25) G. Ziegler, P. Grabher, D. Altmann, M. Hupp, J. Ashburner, K. Friston, N. Weiskopf, A. Thompson, A. Curt, and **P. Freund**; Progressive neurodegeneration following spinal cord injury: Implications for clinical trials; **Neurology**, 2018 Apr 3;90(14):e1257-e1266. **Impact Factor 8.05**; [pdf](#). **Cover Image**

- 26) C. Blaiotta, **P. Freund**, M.J. Cardoso, J. Ashburner; Generative diffeomorphic modelling of large MRI data sets for probabilistic template construction. **Neuroimage**. 2018 Feb 1;166:117-134. **Impact Factor 5.43**; [pdf](#)
- 27) M. Seif, G. Ziegler, and **P. Freund**; Progressive ventricles enlargement and CSF volume increases as a marker of neurodegeneration in SCI patients: A longitudinal MRI study, **Journal of Neurotrauma**. 2018 Jul 11. doi: 10.1089/neu.2017.5522. **Impact Factor 5.0**; [pdf](#)
- 28) M. Seif, A. Curt, A. Thompson, P. Grabher, N. Weiskopf, **P. Freund**; Quantitative MRI of rostral spinal cord and brain regions is predictive of functional recovery in acute spinal cord injury. **Neuroimage Clinical**. 2018 Aug 19;20:556-563. **Impact Factor 3.87**; [pdf](#)
- 29) K. Wolf, M. Hupp, S. Friedl, R. Sutter, M. Klarhöfer, P. Grabher, **P. Freund**, and A. Curt; In cervical spondylotic myelopathy spinal cord motion is focally increased at the level of stenosis: a controlled cross-sectional study. **Spinal Cord**. 2018 Mar 1. **Impact Factor 1.96**; [pdf](#)

2017

- 30) E. Huber, R. Suter, P. Lachappelle, A. Curt, and **P. Freund**; Are midsagittal tissue bridges predictive of outcome after cervical spinal cord injury?; **Annals of Neurology**, 2017 May;81(5):740-748. **Impact Factor 10.24**; [pdf](#)
- 31) G. David, **P. Freund**, and S. Mohammadi; The efficiency of retrospective artifact correction methods in improving the statistical power of between-group differences in spinal cord DTI. **Neuroimage**, 2017 Sep;158:296-307. **Impact Factor 5.43**; [pdf](#)
- 32) P. Grabher, S. Mohammadi, G. David, and **P. Freund**; Neurodegeneration in the Spinal Ventral Horn Prior to Motor Impairment in Cervical Spondylotic Myelopathy. **Journal of Neurotrauma** Aug 1;34(15):2329-2334. **Impact Factor 5.0**; [pdf](#)
- 33) P. Grabher, C. Blaiotta, J. Ashburner, and **P. Freund**; Relationship between brainstem neurodegeneration and clinical impairment in traumatic spinal cord injury; **Neuroimage Clinical** 2017 Jun 1;15:494-501. **Impact Factor 3.87**; [pdf](#)
- 34) G. Prados, J. Cohen-Adad, J. Ashburner, C. Blaiotta, T. Brosch, J. Carballido-Gamiop, M. Cardoso, Esha Dattap, G. D'avid, B. De Leener, S. Dupont, **P. Freund**, C. Wheeler-Kingshott, F. Grussu, R. Henry, B. Landman, E. Ljungberg, B. Lyttle, S. Ourselin, N. Papinutto, S. Saporito, R. Schlaeger, S. Smith, P. Summers, R. Tami, M. Yiannakas, and A. Zhu; Spinal cord grey matter segmentation challenge.; **Neuroimage**, 2017 May 15;152:312-329. **Impact Factor 5.43**; [pdf](#)

2016

- 35) **P. Freund**, K. Friston, A. Thompson, K. Stephan, J. Ashburner, D. Bach, Z. Nagy, G. Helms, B. Draganski, M. Schwab, A. Curt, and N. Weiskopf; Embodied Neurology: an integrative framework for neurological disorders. **Brain**, 2016 Jun;139(Pt 6):1855-61. **Impact Factor 11.81**; [pdf](#)
- 36) P. Grabher, S. Mohammadi, A. Trachsler, S. Friedl, R. Sutter, N. Weiskopf, A. Thompson, A. Curt, and **P. Freund**; Voxel-based analysis of grey and white matter degeneration in cervical spondylotic myelopathy. **Scientific Reports**, 2016 Apr 20;6:24636. **Impact Factor 4.1**; [pdf](#)
- 37) S. Ionta, M. Villiger, C. Jutzeler, **P. Freund**, A. Curt, and R. Gassert; Spinal cord injury affects the interplay between visual and sensorimotor representations of the body. **Scientific Reports**, 2016 Feb 4;6:20144. **Impact Factor 4.1**; [pdf](#)
- 38) C. Jutzeler, E. Huber, M. Callaghan R. Luechinger, A. Curt, J. Kramer, and **P. Freund**; Association of pain and CNS structural changes after spinal cord injury. **Scientific Reports**, 2016, Jan 6;6:18534. **Impact Factor 4.1**; [pdf](#)
- 39) J. Kramer, C. Jutzeler, J. Haefeli, A. Curt, and **P. Freund**; Discrepancy between perceived pain and cortical processing: A voxel-based morphometry and contact heat evoked potential study. **Clinical Neurophysiology**, 2016 Jan;127(1):762-8. **Impact Factor 3.6**; [pdf](#)
- 40) S. Leh, A. Kälin, M. Park, M. Chakravarty, **P. Freund**, A. Gietl, F. Riese, S. Kollias, C. Hock, and L. Michels; Volumetric and shape analysis of the thalamus and striatum in amnesic mild cognitive impairment: **Journal of Alzheimers Disease**, 2016;49(1):237-49. **Impact Factor 3.92**; [pdf](#)

2015

- 41) P. Grabher, M. Callaghan, J. Ashburner, N Weiskopf, A. Thompson, A. Curt, and **P. Freund**; Tracking sensory system atrophy and outcome prediction after spinal cord injury. **Annals of Neurology**, 2015 Nov;78(5):751-61. **Impact Factor 10.24**; [pdf](#)
- 42) C. Jutzeler, **P. Freund**, E. Huber, A. Curt, and J. Kramer; Neuropathic pain and functional reorganization in the primary sensorimotor cortex after spinal cord injury. **Journal of Pain**, 2015 Dec;16(12):1256-67. **Impact Factor 4.52**; [pdf](#)
- 43) E. Huber, A. Curt, and **P. Freund**; Tracking trauma-induced structural and functional changes above the level of spinal cord injury. Invited Review in **Current Opinion in Neurology**, 2015, Aug 28(4):365-72. **Impact Factor 4.0**; [pdf](#)
- 44) M. Villiger, P. Grabher, M.-C. Hepp-Reymond, D. Kiper, A. Curt, M. Bolliger, S. Hotz-Boendermaker, S. Kollias, K. Eng, and **P. Freund**; Relationship between structural brainstem and brain plasticity and lower-limb training in spinal cord injury: a longitudinal pilot study. **Frontiers Human Neuroscience**, 2015, May 6;9:254. **Impact Factor 3.2**; [pdf](#)

2014

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