

## Patrick Freund

Spinal Cord Injury Center  
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University of Zürich  
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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

09.2021	<b>Electroencephalography certificate</b> , Academy of the Swiss Society of Clinical Neurophysiology
01.2019	<b>SNF Eccellenza Professor</b> , University of Zürich, Switzerland
09.2016	<b>Privat Dozent (PD)</b> , University of Zürich, Switzerland
11.2016	<b>Electromyoneurography certificate</b> , Academy of the Swiss Society of Clinical Neurophysiology
01.2015	<b>MD (Dr. med.)</b> , University of Zürich, Switzerland ( <b>09.01.2015</b> )
10.2014	<b>Master of Medicine</b> , University of Zürich, Switzerland ( <b>13.10.2014</b> )
10.2011	<b>Bachelor of Medicine</b> , University of Zürich, Switzerland (in 4 semesters instead of 6)
01.2008	<b>PhD (Dr. rer. nat.)</b> , Bilingual University of Fribourg, Switzerland
02.2005	<b>Master of Biology (Dipl.-Biol.)</b> , 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, Clenia Schössli, 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

- 2021 Initiation of Ad personam Professorship at University of Zurich
- 2018 Awarded the Heisenberg Professorship jointly at Max Planck Institute for Human Cognitive and Brain Sciences and University of Leipzig, but rejected dual career offer due to stay offer from University of Zurich
- 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
02.2016-Pres.	Postdoctoral supervision of Dr M. Seif at SCI Center Balgrist, University Zürich
03.2018-Pres.	Co-supervision of Dr Sanne Kikkert at at SCI Center Balgrist and ETH Zurich
03.2022-05.22	Postdoctoral supervision of D. Pfyffer at SCI Center Balgrist, University Zürich
01.2019-01.2020	Postdoctoral supervision of Dr Johanna Vannesjo at SCI Center Balgrist, University Zürich
01.2017-11.2019	Postdoctoral supervision of Dr P. Kyathanahall 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

06.2022-Pres.	PhD primary supervision of L. Flynn at SCI Balgrist, University Zürich
03.2022-Pres.	PhD primary supervision of C. Kündig at SCI Balgrist, University Zürich
03.2022-Pres.	PhD primary supervision of A. Lebret at SCI Balgrist, University Zürich
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
01.2017-02.2022	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

01.2020-09.2021	MSc primary supervision of S. Hartmann at SCI Balgrist, University Zürich
01.2020-08.2021	MSc primary supervision of C. Achim at SCI Balgrist, University Zürich
10.2019-05.2021	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](http://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 and Biology*

## 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) Center for Neurorehabilitation, Queen Square (2021)
- 2) Neurorama, USZ, Zurich (2019)
- 3) Brain Talk, UKE, Hamburg, (2018)
- 4) Kremblin Talk, Toronto Western Hospital (2018)
- 5) MS Alliance Meeting, Toronto (2018)
- 6) EMSCI Meeting, Wien (2018)

- 7) Life Science Impact, Zürich (2018)
- 8) ISMRM 25th Annual Meeting, 2017, Hawaii (2017)
- 9) Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany (2016)
- 10) Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, UK (2015)
- 11) Reeve Foundation's International Research Consortium on Spinal Cord Injury in Zürich (2014)
- 12) International Neurorehabilitation Symposium ETH Zurich, Switzerland (2013)
- 13) Annual Scientific Meeting - International Spinal Cord Society, London, UK (2012)
- 14) Reeve Foundation's International Research Consortium on Spinal Cord Injury, Cambridge, UK (2011)
- 15) Wings for Life Scientific Meeting, Salzburg, Austria (2011)
- 16) Update on cortical reorganization, Kings College, Cambridge (2009)
- 17) Society for Neuroscience, San Diego, US (2008)
- 18) Breaking News in Neuroscience, FENS, Vienna, Austria (2006)

## Grants

**In total I have acquired as a PI/Co-PI >17M CHF.**

05.2022	<b>UZH Global Strategy and Partnerships Funding Scheme:</b> Cortico-spinal interactions during recovery of hand function following spinal cord injury: from methods development to clinical application	120'00 CHF
01.2022	<b>SNF R'equip Grant</b> CHF 1'8m: Project partner Optically Pumped Magnetometers (OPMs) for Human Magnetoencephalography	
10.2021-09.2025	<b>SNF Project Grant:</b> Tracking structure and function in the lumbosacral cord after spinal cord injury: a quantitative MRI study	590'000 CHF
10.2021-09.2023	<b>Swiss Paraplegic Research:</b> Functional magnetic resonance imaging in the lumbosacral cord as an advanced diagnostic tool in spinal cord injury	200'000 CHF
09.2021-08.2022	<b>EMDO Foundation:</b> Tracking the interictal epileptic network by quantitative MRI	25'000 CHF
05.2020-04.2022	<b>International Research on Paraplegia:</b> Tracking metabolic alterations in the cervical and lumbar SC after SCI using magnetic resonance spectroscopy	145'000 CHF
01.2019-12.2024	<b>Heisenberg Professorship:</b> Interactions between spinal cord and brain during impaired sensorimotor information flow after spinal cord injury	500'000 Euros
01.2019-12.2024	<b>SNF Eccellenza Professorship Fellowship:</b> Interactions between spinal cord and brain during impaired sensorimotor information flow after spinal cord injury	1'500'000 CHF
06.2018-05.2022	<b>SNF Grant CHF 2.6m: Co-PI and work package leader of Neuroimaging</b> 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	<b>SNF Project Grant:</b> Interactions of supraspinal and spinal circuits during normal and impaired upper limb movements in humans; Returned as accepted the SNF Eccellenza Grant.	449'468 CHF
09.2017-04.2018	<b>InVivo Therapeutics:</b> 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	<b>Wings for life:</b> Tracking progressive neurodegenerative processes after spinal cord injury: 5-year follow-up.	125'000 CHF
09.2017-08.2020	<b>European Union "EraNet" CHF 1.0m: Co-PI and work package leader</b> 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	<b>International Research on Paraplegia (IRP):</b> MRI investigation of trauma-induced spinal cord changes: a prospective longitudinal study (continuation).	87'000 CHF
09.2016	<b>McGill/Oxford/ZNZ Partnership:</b> 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	<b>European Union "NISCI - A multicenter European clinical trial" CHF 6.7m, work package leader for Neuroimaging</b> in "Antibodies against Nogo-A to enhance regeneration and functional recovery after acute spinal cord injury, a multicenter EU clinical proof of concept trial".	850'000 CHF
01.2016-12.2018	<b>CRPP Grant University of Zürich (CHF 2.2m), work package leader</b> for Neuroimaging.	171'000 CHF
08.2015-07.2016	<b>Hartmann-Müller Stiftung:</b> MRI investigation of trauma-induced spinal cord changes: a prospective longitudinal study.	25'000 CHF
05.2015-04.2017	<b>International Research on Paraplegia (IRP):</b> MRI investigation of trauma-induced spinal cord changes: a prospective longitudinal study.	110'000 CHF
07.2014-06.2017	<b>Wings for Life:</b> 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	<b>UCL-ZNZ seed grant:</b> 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	<b>SRH Holding:</b> 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	<b>Swiss Paraplegic Research:</b> Imaging the spinal cord after injury and its effects on brain activation.	133'000 CHF

## Publications

### Impact of Publications

#### Google Scholar (06.2022)

Sum of the Times Cited	3355
h-index	30
ih-index	51

From a total of 80 publications, I am first or last author of 47 papers, including *Lancet Neurology*, *Nature Reviews Neurology*, *Brain*, *Annals of Neurology*, *JNNP* and *Neurology*. My current h-index is 30 (Google Scholar, 06.2022).

### Peer Reviewed Publications

#### 2022

- 1) Sartoretti T, Ganley R, Ni R, **Freund P**, Zeilhofer H, Klohs J; Structural MRI Reveals Cervical Spinal Cord Atrophy in the P301L Mouse Model of Tauopathy: Gender and Transgene-Dosing Effects, 2022/5/2. **Front. Aging Neurosci**, 2022, *Impact Factor 4.5*, [pdf](#)
- 2) **Freund P**, Papinutto N, Bischof A, Azzarito M, Kirkish G, Ashburner J, Thompson A, Hauser S, Henry R Simultaneous assessment of regional distributions of atrophy across the neuraxis in MS patients, **NeuroImage: Clinical** 01.2022, 34, 102985, *Impact Factor 4.88*, [pdf](#)
- 3) David G, Vallotton K, Hupp M, Curt A, **Freund P**, Seif M. Extent of Cord Pathology in the Lumbosacral Enlargement in Non-Traumatic versus Traumatic Spinal Cord Injury. **J Neurotrauma**. 2022 Feb 8. doi: 10.1089/neu.2021.0389. Epub ahead of print. PMID: 35018824. *Impact Factor 5.6*, [pdf](#)
- 4) Davies BM, Mowforth O, Gharooni AA, Tetreault L, Nouri A, Dhillon RS, Bednarik J, Martin AR, Young A, Takahashi H, Boerger TF, Newcombe VF, Zipser CM, **Freund P**, Koljonen PA, Rodrigues-Pinto R, Rahimi-Movaghar V, Wilson JR, Kurpad SN, Fehlings MG, Kwon BK, Harrop JS, Guest JD, Curt A, Kotter MRN. A New Framework for Investigating the Biological Basis of Degenerative Cervical Myelopathy [AO Spine RECODE-DCM Research Priority Number 5]: Mechanical Stress, Vulnerability and Time. **Global Spine J**. 2022 Feb;12(1\_suppl):78S-96S. doi: 10.1177/21925682211057546. PMID: 35174728; PMCID: PMC8859710. *Impact Factor 2.9*, [pdf](#)
- 5) Martin AR, Tetreault L, Nouri A, Curt A, **Freund P**, Rahimi-Movaghar V, Wilson JR, Fehlings MG, Kwon BK, Harrop JS, Davies BM, Kotter MRN, Guest JD, Aarabi B, Kurpad SN. Imaging and Electrophysiology for Degenerative Cervical Myelopathy [AO Spine RECODE-DCM Research Priority Number 9]. **Global Spine J**. 2022 Feb;12(1\_suppl):130S-146S. doi: 10.1177/21925682211057484. Epub 2021 Nov 19. PMID: 34797993; PMCID: PMC8859711. *Impact Factor 2.9*, [pdf](#)

#### 2021

- 6) D. Pfyffer and **P. Freund**, Spinal cord pathology revealed by MRI in traumatic spinal cord injury, **Current Opinion in Neurology**, Volume 34, Number 6, December 2021, pp. 789-795(7), *Impact Factor 5.71*, [pdf](#)
- 7) S. Kikkert, D. Pfyffer, M. Verling, **P. Freund**, N.Wenderoth, Finger somatotopy is preserved after tetraplegia but deteriorates over time, **Elife**, 2021;10:e67713, *Impact Factor 8.14*, [pdf](#)
- 8) S. Schading, H. Pohl, A. Gantenbein, R. Luechinger, P. Sandor, F. Riederer, **P. Freund**, L. Michels; Tracking tDCS induced grey matter changes in episodic migraine: a randomized controlled trial, **The Journal of Headache and Pain**, 22, 139 (2021), *Impact Factor 7.27*, [pdf](#)
- 9) G. David, D. Pfyffer, K. Vallotton, N. Pfender, A. Thompson, N. Weiskopf, S. Mohammadi, A. Curt, **P. Freund**; Longitudinal changes of spinal cord grey and white matter following spinal cord injury, **Journal of Neurology, Neurosurgery and Psychiatry**, 2021;92:1222-1230, *Impact Factor 10.15*, [pdf](#)

- 10) 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 10.15**; [pdf](#)
- 11) S. Kyathanahally, M. Azzarito, J. Rosner, V. Calhoun, C. Blaiotta, J. Ashburner, N. Weiskopf, K. Wiech, K. Friston, G. Ziegler, **P. Freund**; Microstructural plasticity in nociceptive pathways after spinal cord injury, **Journal of Neurology, Neurosurgery & Psychiatry**, 26 May 2021. doi: 10.1136/jnnp-2020-325580, **Impact Factor 10.15**; [pdf](#)
- 12) P. Scheuren, G. David, J. Kramer, C. Jutzeler, M. Hupp, **P. Freund**, A. Curt, M. Hubli, J. Rosner; Tract-Specific Analysis of Somatosensory Pathways Identifies Eloquent Lesions in Cervical Myelopathy; **Neurology**, Oct 2021, 97 (15) e1512-e1522; **Impact Factor 8.7, Cover image**, [pdf](#)
- 13) Cohen-Adad, J., Alonso-Ortiz, E., Abramovic, M., ..., **P. Freund** et al., Generic acquisition protocol for quantitative MRI of the spinal cord. **Nature Protocols (2021)**. <https://doi.org/10.1038/s41596-021-00588-0>; **Impact Factor 13.5**, [pdf](#)
- 14) J. Cohen-Adad, E. Alonso-Ortiz, ..., **P. Freund** et al.; Open-access quantitative MRI data of the spinal cord and reproducibility across participants, sites and manufacturers, **Scientific Data**, Vol 8, Article number: 219, 2021, **Impact Factor 5.5**, [pdf](#)
- 15) K. Vallotton, G. David, M. Hupp, N. Pfender, J. Cohen-Adad, M. Fehlings, C. Wheeler-Kingshott, A. Curt, **P. Freund**, M. Seif; Tracking white and grey matter degeneration along the spinal cord axis in degenerative cervical myelopathy; **J Neurotrauma**, 2021 Jul 9. doi: 10.1089/neu.2021.0148. **Impact Factor 5.6**; [pdf](#)
- 16) S. Schading, T. Emmenegger, **P. Freund**; Improving diagnostic workup following traumatic spinal cord injury: advances in biomarkers, **Current Neurology and Neuroscience Reports**, 16 Jul 2021, 21(9):49, **Impact Factor 3.78**; [pdf](#)
- 17) T. Emmenegger, G. David, A. Behnam, F. J Fritz, E. Balteau, G. Helms, I. Ellerbrock, **P. Freund**, S. Mohammadi; The influence of radio-frequency transmit field inhomogeneities on the accuracy of g-ratio weighted imaging, **Frontiers in Neuroscience**, 15 (2021): 770; **Impact Factor 3.57**; [pdf](#)
- 18) 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](#)
- 19) 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](#)
- 20) 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](#)
- 21) 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 4.3**, [pdf](#)
- 22) A. Martin, L. Tetreault, B. Davies, A. Curt, P. Freund, ..., Shekar N Kurpad, Imaging and Electrophysiology for Degenerative Cervical Myelopathy [AO Spine RECODE DCM Research Priority Number 9] **Global Spine Journal**, November 2021, **Impact factor 2.91**, [pdf](#)

## 2020

- 23) 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, **Impact Factor 3.29**, [pdf](#)
- 24) 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](#)

- 25) 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 8.7**; [pdf](#) [Cover Image](#)
- 26) E. Huber, R. Patel, M. Hupp N. Weiskopf, M. Chakravarty, **P. Freund**; Extrapyraxidal plasticity predicts recovery after spinal cord injury, **Scientific Reports**, 10, 14102 (2020); **Impact Factor 3.99**; ahead of print
- 27) 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](#)
- 28) M. Azzarito, M. Seif, S Kyathanahally, A. Curt, **P. Freund**; Tracking the neurodegenerative gradient after spinal cord injury; **NeuroImage: Clinical**, 102221; **Impact Factor 4.88**; [pdf](#)
- 29) 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](#)
- 30) 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

- 31) **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](#)
- 32) 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](#)
- 33) 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 8.7**, [Cover Image](#)
- 34) 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 8.7**; [pdf](#)
- 35) 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.00000000000007137. **Impact Factor 8.7**; [pdf](#)
- 36) 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](#)
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