

Dear Colleagues,

Here is the ASL Newsletter No. 71.

It seems that there are lots of topics to summarize and recap since the **review section** of this newsletter is especially extensive.

On the [networks homepage](#) and in the **jobs** section you will find adverts for currently open positions.

ISMRM 2017 approaching: **ASL Network dinner** is still “under construction”, but in case you are interested in the planning results and would like to enjoy the company of other scientist of our network, you are welcome to register for the dinner by sending an email to editor[AT]asl-network.org by **March 5th**.

The ASL Network dinner will be sponsored by mediri GmbH, Heidelberg and Gold Standard Phantoms Limited, London. Further information can be found in the [last newsletter](#).

Best wishes,
Klaus

Recent publications February 2017, (Epub & Print)

Note: The '*new*-flag' is assigned to articles which haven't been in earlier newsletters (e.g. as e-publications). Additionally you will find titles printed in bold letters which indicates that they are listed for the first time in this particular newsletter. For articles listed multiple times in different sections the bold letters disappear in the later sections.

Content:

Animal Studies.....	2
Pharmacological / Drug Studies / Studies on the Effects of Therapies	2
Cerebral Blood Flow Studies.....	3
CBF Regional Comparison / Regional ASL.....	3
Studies on Special Disease	3
Comparison of ASL Techniques / ASL Compared with Other Imaging Methods / ASL Combined with Other Imaging Methods	6
Functional Imaging / BOLD	6
Others CBF Related.....	7
ASL for Angiography.....	7

ASL in Kidneys.....	7
Myocardial ASL	8
ASL Data Analysis/ Comparison of ASL Evaluation Methods/ Kinetic Models/ Data Corrections.....	8
Technical Improvement / Parameter Optimization	8
Reproducibility Studies.....	9
Cohort Studies / Gender- and Age Dependencies	9
Review Paper / Historical Review / Guidelines.....	9
Job offerings	10
Featured articles.....	10

Animal Studies

[Neurocardiac protection with milrinone for restoring acute cerebral hypoperfusion and delayed ischemic injury after experimental subarachnoid hemorrhage.](#)

Mutoh T, Mutoh T, Sasaki K, Nakamura K, Tatewaki Y, Ishikawa T, Taki Y.
Neurosci Lett. 2017 Feb 15;640:70-75. doi: 10.1016/j.neulet.2017.01.008.

[Neurovascular unit remodelling in the subacute stage of stroke recovery.](#)

Lake EM, Bazzigaluppi P, Mester J, Thomason LA, Janik R, Brown M, McLaurin J, Carlen PL, Corbett D, Stanisiz GJ, Stefanovic B.
Neuroimage. 2017 Feb 1;146:869-882. doi: 10.1016/j.neuroimage.2016.09.016.

[In vivo evidence for long-term vascular remodeling resulting from chronic cerebral hypoperfusion in mice.](#)

Struys T, Govaerts K, Oosterlinck W, Casteels C, Bronckaers A, Koole M, Van Laere K, Herijgers P, Lambrechts I, Himmelreich U, Dresselaers T.
J Cereb Blood Flow Metab. 2017 Feb;37(2):726-739. doi: 10.1177/0271678X16638349.

Pharmacological / Drug Studies / Studies on the Effects of Therapies

new

[The attention network changes in breast cancer patients receiving neoadjuvant chemotherapy: Evidence from an arterial spin labeling perfusion study.](#)

Chen X, He X, Tao L, Cheng H, Li J, Zhang J, Qiu B, Yu Y, Wang K.
Sci Rep. 2017 Feb 17;7:42684. doi: 10.1038/srep42684.

[Free PMC Article](#)

new

Combination of IVIM-DWI and 3D-ASL for differentiating true progression from pseudoprogression of Glioblastoma multiforme after concurrent chemoradiotherapy: study protocol of a prospective diagnostic trial.

Liu ZC, Yan LF, Hu YC, Sun YZ, Tian Q, Nan HY, Yu Y, Sun Q, Wang W, Cui GB.

BMC Med Imaging. 2017 Feb 1;17(1):10. doi: 10.1186/s12880-017-0183-y.

[Free PMC Article](#)

Neurocardiac protection with milrinone for restoring acute cerebral hypoperfusion and delayed ischemic injury after experimental subarachnoid hemorrhage.

Mutoh T, Mutoh T, Sasaki K, Nakamura K, Tatewaki Y, Ishikawa T, Taki Y.

Neurosci Lett. 2017 Feb 15;640:70-75. doi: 10.1016/j.neulet.2017.01.008.

Cerebral Blood Flow Studies

CBF Regional Comparison / Regional ASL

new

Resting cerebral blood flow alteration in severe obstructive sleep apnoea: an arterial spin labelling perfusion fMRI study.

Nie S, Peng DC, Gong HH, Li HJ, Chen LT, Ye CL.

Sleep Breath. 2017 Feb 16. doi: 10.1007/s11325-017-1474-9. [Epub ahead of print]

new

Association of Collateral Blood Vessels Detected by Arterial Spin Labeling Magnetic Resonance Imaging With Neurological Outcome After Ischemic Stroke.

de Havenon A, Haynor DR, Tirschwell DL, Majersik JJ, Smith G, Cohen W, Andre JB.

JAMA Neurol. 2017 Feb 13. doi: 10.1001/jamaneurol.2016.4491. [Epub ahead of print]

new

MR Imaging of Individual Perfusion Reorganization Using Superselective Pseudocontinuous Arterial Spin-Labeling in Patients with Complex Extracranial Steno-Occlusive Disease.

Richter V, Helle M, van Osch MJ, Lindner T, Gersing AS, Tsantilas P, Eckstein HH, Preibisch C, Zimmer C.

AJNR Am J Neuroradiol. 2017 Feb 9. doi: 10.3174/ajnr.A5090. [Epub ahead of print]

Studies on Special Disease

new

Resting cerebral blood flow alteration in severe obstructive sleep apnoea: an arterial spin labelling perfusion fMRI study.

Nie S, Peng DC, Gong HH, Li HJ, Chen LT, Ye CL.

Sleep Breath. 2017 Feb 16. doi: 10.1007/s11325-017-1474-9. [Epub ahead of print]

new

[The attention network changes in breast cancer patients receiving neoadjuvant chemotherapy: Evidence from an arterial spin labeling perfusion study.](#)

Chen X, He X, Tao L, Cheng H, Li J, Zhang J, Qiu B, Yu Y, Wang K.
Sci Rep. 2017 Feb 17;7:42684. doi: 10.1038/srep42684.

[Free PMC Article](#)

new

[Noninvasive Evaluation of CBF and Perfusion Delay of Moyamoya Disease Using Arterial Spin-Labeling MRI with Multiple Postlabeling Delays: Comparison with ¹⁵O-Gas PET and DSC-MRI.](#)

Hara S, Tanaka Y, Ueda Y, Hayashi S, Inaji M, Ishiwata K, Ishii K, Maehara T, Nariai T.
AJNR Am J Neuroradiol. 2017 Feb 16. doi: 10.3174/ajnr.A5068. [Epub ahead of print]

new

[Feasibility of Flat Panel Detector CT in Perfusion Assessment of Brain Arteriovenous Malformations: Initial Clinical Experience.](#)

Garcia M, Okell TW, Gloor M, Chappell MA, Jezzard P, Bieri O, Byrne JV.
AJNR Am J Neuroradiol. 2017 Feb 16. doi: 10.3174/ajnr.A5091. [Epub ahead of print]

new

[Higher subcortical and white matter cerebral blood flow in perinatally HIV-infected children.](#)

Blokhuis C, Mutsaerts HJ, Cohen S, Scherpbier HJ, Caan MW, Majoie CB, Kuijpers TW, Reiss P, Wit FW, Pakjrt D.

Medicine (Baltimore). 2017 Feb;96(7):e5891. doi: 10.1097/MD.0000000000005891.

[Free Article](#)

new

[Association of Collateral Blood Vessels Detected by Arterial Spin Labeling Magnetic Resonance Imaging With Neurological Outcome After Ischemic Stroke.](#)

de Havenon A, Haynor DR, Tirschwell DL, Majersik JJ, Smith G, Cohen W, Andre JB.
JAMA Neurol. 2017 Feb 13. doi: 10.1001/jamaneurol.2016.4491. [Epub ahead of print]

new

[MR Imaging of Individual Perfusion Reorganization Using Superselective Pseudocontinuous Arterial Spin-Labeling in Patients with Complex Extracranial Steno-Occlusive Disease.](#)

Richter V, Helle M, van Osch MJ, Lindner T, Gersing AS, Tsantilas P, Eckstein HH, Preibisch C, Zimmer C.

AJNR Am J Neuroradiol. 2017 Feb 9. doi: 10.3174/ajnr.A5090. [Epub ahead of print]

new

[Clinical assessment of cerebral hemodynamics in Moyamoya disease via multiple inversion time arterial spin labeling and dynamic susceptibility contrast-magnetic resonance imaging: A comparative study.](#)

Qiao PG, Han C, Zuo ZW, Wang YT, Pfeuffer J, Duan L, Qian T, Li GJ.

J Neuroradiol. 2017 Feb 3. pii: S0150-9861(17)30048-2. doi: 10.1016/j.neurad.2016.12.006.

[Epub ahead of print]

new

Arterial Spin Labeling to Predict Brain Tumor Grading: Limits of Cutoff Cerebral Blood Flow Values.

Law-Ye B, Schertz M, Galanaud D, Dormont D, Pyatigorskaya N.
Radiology. 2017 Feb;282(2):610-612. doi: 10.1148/radiol.2017162312. No abstract available.

new

Altered Blood-Brain Barrier Permeability in Patients With Systemic Lupus Erythematosus: A Novel Imaging Approach.

Gulati G, Jones JT, Lee G, Altaye M, Beebe DW, Meyers-Eaton J, Wiley K, Brunner HI, DiFrancesco MW.
Arthritis Care Res (Hoboken). 2017 Feb;69(2):299-305. doi: 10.1002/acr.22923.

Cerebral hemodynamics and pseudo-continuous arterial spin labeling considerations in adults with sickle cell anemia.

Juttukonda MR, Jordan LC, Gindville MC, Davis LT, Watchmaker JM, Pruthi S, Donahue MJ.
NMR Biomed. 2017 Feb;30(2). doi: 10.1002/nbm.3681.

Cerebral blood flow and its connectivity features of auditory verbal hallucinations in schizophrenia: A perfusion study.

Cui LB, Chen G, Xu ZL, Liu L, Wang HN, Guo L, Liu WM, Liu TT, Qi S, Liu K, Qin W, Sun JB, Xi YB, Yin H.
Psychiatry Res. 2017 Feb 28;260:53-61. doi: 10.1016/j.psychres.2016.12.006.

Cerebrovascular function in presymptomatic and symptomatic individuals with hereditary cerebral amyloid angiopathy: a case-control study.

van Opstal AM, van Rooden S, van Harten T, Ghariq E, Labadie G, Fotiadis P, Gurol ME, Terwindt GM, Wermer MJ, van Buchem MA, Greenberg SM, van der Grond J.
Lancet Neurol. 2017 Feb;16(2):115-122. doi: 10.1016/S1474-4422(16)30346-5.

Dynamics of cerebral blood flow in patients with mild non-ischaemic heart failure.

Erkelens CD, van der Wal HH, de Jong BM, Elting JW, Renken R, Gerritsen M, van Laar PJ, van Deursen VM, van der Meer P, van Veldhuisen DJ, Voors AA, Luijckx GJ.
Eur J Heart Fail. 2017 Feb;19(2):261-268. doi: 10.1002/ejhf.660.

In vivo evidence for long-term vascular remodeling resulting from chronic cerebral hypoperfusion in mice.

Struys T, Govaerts K, Oosterlinck W, Casteels C, Bronckaers A, Koole M, Van Laere K, Herijgers P, Lambrechts I, Himmelreich U, Dresselaers T.
J Cereb Blood Flow Metab. 2017 Feb;37(2):726-739. doi: 10.1177/0271678X16638349.

Comparison of ASL Techniques / ASL Compared with Other Imaging Methods / ASL Combined with Other Imaging Methods

new

[Noninvasive Evaluation of CBF and Perfusion Delay of Moyamoya Disease Using Arterial Spin-Labeling MRI with Multiple Postlabeling Delays: Comparison with ¹⁵O-Gas PET and DSC-MRI.](#)

Hara S, Tanaka Y, Ueda Y, Hayashi S, Inaji M, Ishiwata K, Ishii K, Maehara T, Nariai T. AJNR Am J Neuroradiol. 2017 Feb 16. doi: 10.3174/ajnr.A5068. [Epub ahead of print]

new

[Feasibility of Flat Panel Detector CT in Perfusion Assessment of Brain Arteriovenous Malformations: Initial Clinical Experience.](#)

Garcia M, Okell TW, Gloor M, Chappell MA, Jezzard P, Bieri O, Byrne JV. AJNR Am J Neuroradiol. 2017 Feb 16. doi: 10.3174/ajnr.A5091. [Epub ahead of print]

new

[Clinical assessment of cerebral hemodynamics in Moyamoya disease via multiple inversion time arterial spin labeling and dynamic susceptibility contrast-magnetic resonance imaging: A comparative study.](#)

Qiao PG, Han C, Zuo ZW, Wang YT, Pfeuffer J, Duan L, Qian T, Li GJ. J Neuroradiol. 2017 Feb 3. pii: S0150-9861(17)30048-2. doi: 10.1016/j.neurad.2016.12.006. [Epub ahead of print]

[In vivo evidence for long-term vascular remodeling resulting from chronic cerebral hypoperfusion in mice.](#)

Struys T, Govaerts K, Oosterlinck W, Casteels C, Bronckaers A, Koole M, Van Laere K, Herijgers P, Lambrechts I, Himmelreich U, Dresselaers T. J Cereb Blood Flow Metab. 2017 Feb;37(2):726-739. doi: 10.1177/0271678X16638349.

Functional Imaging / BOLD

new

[A longitudinal study of cerebral blood flow under hypoxia at high altitude using 3D pseudo-continuous arterial spin labeling.](#)

Liu W, Liu J, Lou X, Zheng D, Wu B, Wang DJ, Ma L. Sci Rep. 2017 Feb 27;7:43246. doi: 10.1038/srep43246. [Free Article](#)

new

[Structural Connectivity Variances Underlie Functional and Behavioral Changes During Pain Relief Induced by Neuromodulation.](#)

Lin RL, Douaud G, Filippini N, Okell TW, Stagg CJ, Tracey I. Sci Rep. 2017 Feb 2;7:41603. doi: 10.1038/srep41603. [Free PMC Article](#)

new

Disrupted habenula function in major depression.

Lawson RP, Nord CL, Seymour B, Thomas DL, Dayan P, Pilling S, Roiser JP.
Mol Psychiatry. 2017 Feb;22(2):202-208. doi: 10.1038/mp.2016.81.
[see PMC Article](#)

Cerebral blood flow and its connectivity features of auditory verbal hallucinations in schizophrenia: A perfusion study.

Cui LB, Chen G, Xu ZL, Liu L, Wang HN, Guo L, Liu WM, Liu TT, Qi S, Liu K, Qin W, Sun JB, Xi YB, Yin H.
Psychiatry Res. 2017 Feb 28;260:53-61. doi: 10.1016/j.psychres.2016.12.006.

Cerebrovascular function in presymptomatic and symptomatic individuals with hereditary cerebral amyloid angiopathy: a case-control study.

van Opstal AM, van Rooden S, van Harten T, Ghariq E, Labadie G, Fotiadis P, Gurol ME, Terwindt GM, Wermer MJ, van Buchem MA, Greenberg SM, van der Grond J.
Lancet Neurol. 2017 Feb;16(2):115-122. doi: 10.1016/S1474-4422(16)30346-5.

Neurovascular unit remodelling in the subacute stage of stroke recovery.

Lake EM, Bazzigaluppi P, Mester J, Thomason LA, Janik R, Brown M, McLaurin J, Carlen PL, Corbett D, Stanisiz GJ, Stefanovic B.
Neuroimage. 2017 Feb 1;146:869-882. doi: 10.1016/j.neuroimage.2016.09.016.

Others CBF Related

Neurovascular unit remodelling in the subacute stage of stroke recovery.

Lake EM, Bazzigaluppi P, Mester J, Thomason LA, Janik R, Brown M, McLaurin J, Carlen PL, Corbett D, Stanisiz GJ, Stefanovic B.
Neuroimage. 2017 Feb 1;146:869-882. doi: 10.1016/j.neuroimage.2016.09.016.

ASL for Angiography

new

A longitudinal study of cerebral blood flow under hypoxia at high altitude using 3D pseudo-continuous arterial spin labeling.

Liu W, Liu J, Lou X, Zheng D, Wu B, Wang DJ, Ma L.
Sci Rep. 2017 Feb 27;7:43246. doi: 10.1038/srep43246.
[Free Article](#)

ASL in Kidneys

new

Diagnostic value of renal perfusion in patients with chronic kidney disease using 3D arterial spin labeling.

Cai YZ, Li ZC, Zuo PL, Pfeuffer J, Li YM, Liu F, Liu RB.
J Magn Reson Imaging. 2017 Feb 9. doi: 10.1002/jmri.25601. [Epub ahead of print]

Myocardial ASL

new

Assessment of segmental myocardial blood flow and myocardial perfusion reserve by adenosine-stress myocardial arterial spin labeling perfusion imaging.

Yoon AJ, Do HP, Cen S, Fong MW, Saremi F, Barr ML, Nayak KS.

J Magn Reson Imaging. 2017 Feb 2. doi: 10.1002/jmri.25604. [Epub ahead of print]

ASL Data Analysis/ Comparison of ASL Evaluation Methods/ Kinetic Models/ Data Corrections

Cerebral hemodynamics and pseudo-continuous arterial spin labeling considerations in adults with sickle cell anemia.

Juttukonda MR, Jordan LC, Gindville MC, Davis LT, Watchmaker JM, Pruthi S, Donahue MJ.

NMR Biomed. 2017 Feb;30(2). doi: 10.1002/nbm.3681.

Using Anatomic Magnetic Resonance Image Information to Enhance Visualization and Interpretation of Functional Images: A Comparison of Methods Applied to Clinical Arterial Spin Labeling Images.

Zhao L, Dai W, Soman S, Hackney DB, Wong ET, Robson PM, Alsop DC.

IEEE Trans Med Imaging. 2017 Feb;36(2):487-496. doi: 10.1109/TMI.2016.2615567.

Technical Improvement / Parameter Optimization

new

Association of Collateral Blood Vessels Detected by Arterial Spin Labeling Magnetic Resonance Imaging With Neurological Outcome After Ischemic Stroke.

de Havenon A, Haynor DR, Tirschwell DL, Majersik JJ, Smith G, Cohen W, Andre JB.

JAMA Neurol. 2017 Feb 13. doi: 10.1001/jamaneurol.2016.4491. [Epub ahead of print]

new

Association of Collateral Blood Vessels Detected by Arterial Spin Labeling Magnetic Resonance Imaging With Neurological Outcome After Ischemic Stroke.

de Havenon A, Haynor DR, Tirschwell DL, Majersik JJ, Smith G, Cohen W, Andre JB.

JAMA Neurol. 2017 Feb 13. doi: 10.1001/jamaneurol.2016.4491. [Epub ahead of print]

new

MR Imaging of Individual Perfusion Reorganization Using Superselective Pseudocontinuous Arterial Spin-Labeling in Patients with Complex Extracranial Steno-Occlusive Disease.

Richter V, Helle M, van Osch MJ, Lindner T, Gersing AS, Tsantilas P, Eckstein HH, Preibisch C, Zimmer C.

AJNR Am J Neuroradiol. 2017 Feb 9. doi: 10.3174/ajnr.A5090. [Epub ahead of print]

[Effects of arterial transit delay on cerebral blood flow quantification using arterial spin labeling in an elderly cohort.](#)

Dai W, Fong T, Jones RN, Marcantonio E, Schmitt E, Inouye SK, Alsop DC.
J Magn Reson Imaging. 2017 Feb;45(2):472-481. doi: 10.1002/jmri.25367.

Reproducibility Studies

[Cerebrovascular function in presymptomatic and symptomatic individuals with hereditary cerebral amyloid angiopathy: a case-control study.](#)

van Opstal AM, van Rooden S, van Harten T, Ghariq E, Labadie G, Fotiadis P, Gurol ME, Terwindt GM, Wermer MJ, van Buchem MA, Greenberg SM, van der Grond J.
Lancet Neurol. 2017 Feb;16(2):115-122. doi: 10.1016/S1474-4422(16)30346-5.

Cohort Studies / Gender- and Age Dependencies

new

[Higher subcortical and white matter cerebral blood flow in perinatally HIV-infected children.](#)

Blokhuis C, Mutsaerts HJ, Cohen S, Scherpbier HJ, Caan MW, Majoie CB, Kuijpers TW, Reiss P, Wit FW, Pajkrt D.

Medicine (Baltimore). 2017 Feb;96(7):e5891. doi: 10.1097/MD.0000000000005891.

[Free Article](#)

[Effects of arterial transit delay on cerebral blood flow quantification using arterial spin labeling in an elderly cohort.](#)

Dai W, Fong T, Jones RN, Marcantonio E, Schmitt E, Inouye SK, Alsop DC.
J Magn Reson Imaging. 2017 Feb;45(2):472-481. doi: 10.1002/jmri.25367.

Review Paper / Historical Review / Guidelines

new

[Intracranial Arteriovenous Shunting Detection with Arterial Spin-Labeling and Susceptibility-Weighted Imaging: Potential Pitfall of a Venous Predominant Parenchymal Arteriovenous Malformation.](#)

Nabavizadeh SA.

AJNR Am J Neuroradiol. 2017 Feb 23. doi: 10.3174/ajnr.A5108. [Epub ahead of print] No abstract available.

new

[Ultrasound and dynamic functional imaging in vascular cognitive impairment and Alzheimer's disease.](#)

Malojcic B, Giannakopoulos P, Sorond FA, Azevedo E, Diomedi M, Oblak JP, Carraro N, Boban M, Olah L, Schreiber SJ, Pavlovic A, Garami Z, Bornstein NM, Rosengarten B.

BMC Med. 2017 Feb 9;15(1):27. doi: 10.1186/s12916-017-0799-3. Review.

[Free PMC Article](#)

new

Biomarkers, designs, and interpretations of resting-state fMRI in translational pharmacological research: A review of state-of-the-Art, challenges, and opportunities for studying brain chemistry.

Khalili-Mahani N, Rombouts SA, van Osch MJ, Duff EP, Carbonell F, Nickerson LD, Becerra L, Dahan A, Evans AC, Soucy JP, Wise R, Zijdenbos AP, van Gerven JM.
Hum Brain Mapp. 2017 Feb 1. doi: 10.1002/hbm.23516. [Epub ahead of print] Review.

new

Neuroimaging features in posterior reversible encephalopathy syndrome: A pictorial review.

Ollivier M, Bertrand A, Clarençon F, Gerber S, Deltour S, Domont F, Trunet S, Dormont D, Leclercq D.
J Neurol Sci. 2017 Feb 15;373:188-200. doi: 10.1016/j.jns.2016.12.007. Review.

new

Pineal Region Masses in Pediatric Patients.

Tamrazi B, Nelson M, Blüml S.
Neuroimaging Clin N Am. 2017 Feb;27(1):85-97. doi: 10.1016/j.nic.2016.08.002. Review.

ASL and susceptibility-weighted imaging contribution to the management of acute ischaemic stroke.

Verclytte S, Fisch O, Colas L, Vanaerde O, Toledano M, Budzik JF.
Insights Imaging. 2017 Feb;8(1):91-100. doi: 10.1007/s13244-016-0529-y. Review.
[Free PMC Article](#)

The neurobiology of addiction: the perspective from magnetic resonance imaging present and future.

Suckling J, Nestor LJ.
Addiction. 2017 Feb;112(2):360-369. doi: 10.1111/add.13474. Review.
[Free PMC Article](#)

Job offerings

University of Oxford, UK

[Postdoctoral Research Assistants in Modelling and Analysis of Cerebral Perfusion Imaging \(2 posts\)](#), application deadline: 12pm, March 22nd

If you have any vacancies please send them to [jobs\[AT\]asl-network.org](mailto:jobs[AT]asl-network.org)

Featured articles

If you would like to write a comment on an interesting article mail it to [editor\[AT\]asl-network.org](mailto:editor[AT]asl-network.org)