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Functional brain responses in the maintenance of energy balance

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APPENDIX

List of publications

Dankwoord

Curriculum vitae



LIST OF PUBLICATIONS

2012

1. CA Wijsman*, **AM van Opstal***, HE Kan , AB Maier, RG Westendorp, PE Slagboom, AG Webb, SP Mooijaart, D van Heemst. *Both authors contributed equally. Proton magnetic resonance spectroscopy shows lower intramyocellular lipid accumulation in middle-aged subjects predisposed to familial longevity. *Am J Physiol Endocrinol Metab.* 2012 Feb;302(3):E344-8.
2. M van Putten, D Kumar, M Hulsker, WM Hoogaars, JJ Plomp, **AM van Opstal**, M van Iterson, P Admiraal, GJ van Ommen, PA 't Hoen, A Aartsma-Rus. Comparison of skeletal muscle pathology and motor function of dystrophin and utrophin deficient mouse strains. *Neuromuscul Disord.* 2012 May;22(5):406-17. doi: 10.1016/j.nmd.2011.10.011.

2014

3. S van Rooden, JD Goos, **AM van Opstal**, MJ Versluis, AG Webb, GJ Blauw, WM van der Flier, P Scheltens, F Barkhof, MA van Buchem, J van der Grond. Increased number of microinfarcts in Alzheimer disease at 7-T MR imaging. *Radiology.* 2014 Jan;270(1):205-11. doi: 10.1148/radiol.13130743.

2015

4. **AM van Opstal***, AM Westerink*, Teeuwisse WM, van der Geest MA, van Furth EF, van der Grond J. *Both authors contributed equally. Hypothalamic BOLD response to glucose intake and hypothalamic volume are similar in anorexia nervosa and healthy control subjects. *Front Neurosci.* 2015 May 5;9:159. doi: 10.3389/fnins.2015.00159.

2016

5. P Fotiadis*, S van Rooden*, J van der Grond, A Schultz, S Martinez-Ramirez, E Auriel, Y Reijmer, **AM van Opstal**, A Ayres, KM Schwab; Alzheimer's Disease Neuroimaging Initiative T, Hedden, J Rosand, A Viswanathan, M Wermer, G Terwindt, RA Sperling, JR Polimeni, KA Johnson, MA van Buchem, SM Greenberg, ME Gurol. *Both authors contributed equally. Cortical atrophy in patients with cerebral amyloid angiopathy: a case-control study. *Lancet Neurol.* 2016 Jul;15(8):811-819. doi: 10.1016/S1474-4422(16)30030-8.
6. S van Rooden, **AM van Opstal**, G Labadie, GM Terwindt, MJ Wermer, AG Webb, HA Middelkoop, SM Greenberg, J van der Grond, MA van Buchem. Early Magnetic Resonance Imaging and Cognitive Markers of Hereditary Cerebral Amyloid Angiopathy. *Stroke.* 2016 Dec;47(12):3041-3044.

2017

7. **AM van Opstal**, S van Rooden, T van Harten, E Ghariq, G Labadie, P Fotiadis, ME Gurol, GM Terwindt, MJ Wermer, MA van Buchem, SM Greenberg, J van der Grond. Cerebrovascular function in presymptomatic and symptomatic individuals with hereditary cerebral amyloid angiopathy: a case-control study. *Lancet Neurol.* 2017 Feb;16(2):115-122. doi: 10.1016/S1474-4422(16)30346-5.
8. AA Akintola*, **AM van Opstal***, RG Westendorp, I Postmus, J van der Grond, D van Heemst. *Both authors contributed equally. Effect of intranasally administered insulin on cerebral blood flow and perfusion; a randomized experiment in young and older adults. *Aging.* 2017 Mar 14;9(3):790-802. doi: 10.18632/aging.101192.
9. ES van Etten, MM Verbeek, J van der Grond, R Zielman, S van Rooden, EW van Zwet, **AM van Opstal**, J Haan, SM Greenberg, MA van Buchem, MJ Wermer, GM Terwindt. β -Amyloid in CSF: Biomarker for preclinical cerebral amyloid angiopathy. *Neurology.* 2017 Jan 10;88(2):169-176. doi: 10.1212/WNL.0000000000003486.
10. **AM van Opstal***, AA Akintola*, M van der Elst, RG Westendorp, H Pijl, D van Heemst, J van der Grond. *Both authors contributed equally. Effects of intranasal insulin application on the hypothalamic BOLD response to glucose ingestion. *Scientific Reports* 7, Article number: 13327 (2017) doi:10.1038/s41598-017-13818-x.

2018

11. **AM van Opstal**, AA van den Berg-Huysmans, M Hoeksma, C Blonk, H Pijl, SARB Rombouts, J van der Grond. The effect of consumption temperature on the homeostatic and hedonic responses to glucose ingestion in the hypothalamus and the reward system. *Am J Clin Nutr.* 2018 Jan 1;107(1):20-25. doi: 10.1093/ajcn/nqx023.
12. **AM van Opstal**, A Hafkemeijer, AA van den Berg-Huysmans, M Hoeksma, C Blonk, H Pijl, SARB Rombouts, J van der Grond. Brain activity and connectivity changes in response to glucose ingestion. *Nutr Neurosci.* 2018 May 27:1-8. doi: 10.1080/1028415X.2018.1477538.
13. EA Koemans, ES van Etten, **AM van Opstal**, G Labadie, GM Terwindt, MJH Wermer, AG Webb, EM Gurol, SM Greenberg, MA van Buchem, J van der Grond, S van Rooden. Innovative Magnetic Resonance Imaging Markers of Hereditary Cerebral Amyloid Angiopathy at 7 Tesla. *Stroke.* 2018 Jun;49(6):1518-1520. doi: 10.1161/STROKEAHA.117.020302.
14. S Martinez-Ramirez, S van Rooden, A Charidimou, **AM van Opstal**, M Wermer, ME Gurol, G Terwindt, J van der Grond, SM Greenberg, M van Buchem, A

- Viswanathan. Perivascular Spaces Volume in Sporadic and Hereditary (Dutch-Type) Cerebral Amyloid Angiopathy. *Stroke*. 2018 Jul 16. doi:10.1161/STROKEAHA.118.021137.
15. **AM van Opstal**, I Kaal, AA van den Berg-Huysmans, M Hoeksma, C Blonk, H Pijl, SARB Rombouts, J van der Grond. Dietary sugars and non-caloric sweeteners elicit different homeostatic and hedonic responses in the brain. *Nutrition* 2018 doi:10.1016/j.nut.2018.09.004
 16. TM. Schouten, F de Vos, S van Rooden, **AM van Opstal**, MJRJ Bouts, RA Feis, GM Terwindt, MJH Wermer, MA van Buchem, SM Greenberg, M de Rooij, SARB Rombouts, J van der Grond. Multiple approaches to diffusion MRI in hereditary cerebral amyloid angiopathy mutation carriers. *JAMA* 2019.
 17. **AM van Opstal**, AA van den Berg-Huysmans, M Hoeksma, C Blonk, H Pijl, SARB Rombouts, J. van der Grond. Effect of flavor on homeostatic and reward responses of the hypothalamus and ventral tegmental area. *Submitted*.
 18. **AM van Opstal**, MA Wijngaarden, J van der Grond, H Pijl. Changes in brain activity after weight loss in obesity. *Submitted*.
 19. **AM van Opstal**, A Hafkemeijer, AA van den Berg-Huysmans, M. Hoeksma, TPJ Mulder, H Pijl, SARB Rombouts, J van der Grond. Brain activity and connectivity changes in response to nutritive natural sugars, non-nutritive natural sugar replacements and artificial sweeteners. *Submitted*.
 20. J van der Grond, MM Redelijkheid, **AM van Opstal**, G Labadie, J Barkey-Wolf, GM Terwindt, MJH Wermer, AA van den Berg-Huysmans, MA van Buchem, SM Greenberg, S van Rooden. Vascular reactivity as biomarker for hereditary cerebral amyloid angiopathy: reproducibility and progression. *Submitted*.

DANKWOORD

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CURRICULUM VITAE

Anna Maria “Annemarieke” van Opstal was born on the 15th of March 1988 and grew up in Zevenbergen, the Netherlands. After graduating from the Norbertus College in Roosendaal in 2006, she studied Bio-medical Sciences at the Leiden University Medical Center. After receiving her bachelor’s degree she continued with a research master in Bio-medical Sciences. As part of her graduation, Annemarieke assisted in a neuroimaging study on amyloid deposition in hereditary cerebral amyloid angiopathy patients under the supervision of Dr. Sanneke van Rooden and Dr. Jeroen van der Grond.

After finishing her graduation in November 2012, Annemarieke started her PhD research at the Leiden University Medical Center at the department of Radiology under supervision of Dr. Jeroen van der Grond and Professor Serge Rombouts. In her PhD project, Annemarieke performed several industry initiated studies financed by Unilever Research & Development. These functional MRI projects focused on the effects of sugars and sweeteners and food characteristics on the brain. Alongside these industry initiated studies Annemarieke performed several other studies in collaboration with other departments of the Leiden University Medical Center including the EU funded Switchbox project with the department of Geriatrics. And additionally completed a study on functional brain responses in Anorexia Nervosa in collaboration with GGZ Rivierduinen.

Her findings resulted in more insights into functional brain responses that are important in the maintenance of energy balance as described in this thesis and give grounds for further investigations into these brain functions to determine neurophysiological markers that could aid in the management of obesity and eating disorders.

Currently, Annemarieke is continuing her work as a post-doc at the department of Radiology at the Leiden University Medical Center.

