



Gaia Olivo



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Gaia Olivo, M.D., Ph.D, docent

Assistant Professor in Neuropsychology at the Faculty of Social Sciences, Department of Psychology, University of Gothenburg (Sweden)

Research Focus

My research aims at shedding light on the neurobiological correlates of rapid brain structural and functional plasticity, by using advanced neuroimaging techniques (MRI, fMRI, fNIRS).

Education and Training

Assistant Professor

2021- pres | Integrative Cognitive Neuroscience (ICoN) Lab, Dept. Of Psychology
Göteborgs Universitet, Göteborg, Sweden

Research on rapid brain plasticity. Teaching in Neuropsychology.

Postdoctoral researcher

2020- 2021 | Lifespan Development Lab (Lifelab), Dept. Of Psychology
Göteborgs Universitet, Göteborg, Sweden

Research on learning and cognition. Lövdén's Lab.

2019-2020 | Aging Research Center, Dept. of Neurobiology, Care
Sciences and Society. Karolinska Institute, Stockholm, Sweden

Research on aging and cognitive plasticity. Lövdén's Lab.

PhD in Medical Science (Neuroscience)

2016-2019 | Dept. of Neuroscience, Uppsala University
Uppsala, Sweden

Research on neuroimaging and eating disorders. PhD, Medical Sciences.

MD Degree in Medicine and Surgery

2008-2015 | "Federico II" University of Naples, Naples, Italy

Teaching and Supervision

Pedagogical training

- 09-12/2022 | Teaching and Learning in Higher Education 3: Applied Analysis (PIL-103). 5 hp.
Göteborgs Universitet, Göteborg, Sweden
Writing an independent paper about a theme within teaching and learning in higher education.
- 04-06/2022 | Teaching and Learning in Higher Education 2: Subject Field Pedagogy at the Faculty of Science (PIL-102). 5 hp.
Göteborgs Universitet, Göteborg, Sweden
Learning theories, teaching methods, planning and design of scientific courses in higher education.
- 09-12/2021 | Teaching and Learning in Higher Education 1: Basic Course (PIL-101). 5 hp.
Göteborgs Universitet, Göteborg, Sweden
Introduction to learning theories, teaching methods and student learning in higher education.
- 09-12/2021 | Supervision in Postgraduate Programs (PIL-201). 5 hp.
Göteborgs Universitet, Göteborg, Sweden
Organising and handling doctoral education and supervision.

Teaching activities

- 2023 | Psychology Program, Year 1, University of Gothenburg
Biological Psychology course (PM1629).
Lectures on neurotransmitters, psychopharmacology, and brain imaging techniques.
- 2023 | Free standing courses, University of Gothenburg
Psychology Basic course (PX1100).
Lectures on sensorial perception (hearing, balance, taste, smell, touch and pain).
- 2023 | Free standing courses, University of Gothenburg
Neuropsychology course (PX1161).
Lectures on neurotransmitters, and brain imaging techniques.
- 2022-2023 | Master's Program in Psychological Science, Year 1, University of Gothenburg
Cognitive Psychology course (PS2104).
Lectures on perception, judgment and decision making.
- 2022-2023 | Master's Program in Psychological Science, Year 2, University of Gothenburg
Human Neuropsychology course (PS2107).
Lectures and seminars on fMRI, genetics, perception and action systems, cognitive control and decision making, social cognition and emotional control, development and aging.
- 2021-2023 | Master's Program in Psychological Science, Year 1, University of Gothenburg
Developmental Psychology in a lifecycle perspective course (PS2106).
Lectures and seminars on lifespan development, and mechanisms of stability and change.
- 2021-2022 | Audionomprogrammet, University of Gothenburg
Psychology II: Perception- and cognitive psychology course.
Lecture on visual perception.
- 2019-2020 | Clinical Psychology Program, Karolinska Institute.
Cognitive Processes course.
Lecture and seminar on Cognitive Plasticity.

2017-2019 | Medical Program, Term 3, Uppsala University.

Clinical Medicine course.

Handledare for clinical cases (group problem-based learning).

Neurobiology, Homeostasis and Intervention course.

Pharmacokinetics lab.

2017-2019 | Master in Biomedicine, Uppsala University.

Preparation for Research with Focus on New Drug Targets course.

fMRI lecture and seminar; epigenetics lab; Allen Brain Atlas lab; genetics lab; equipment training and demo.

Supervisor activities

2021-pres | Dept. of Psychology, Göteborgs Universitet, Göteborg, Sweden

Co-supervised 1 PhD student. Supervised 4 practicum students from the the MSc. In Neuropsychology.

Supervised 2 students from the BSc. In Psychology for their graduation theses.

2016-2019 | Dept. of Neuroscience, Uppsala University, Uppsala, Sweden

Supervised more than 10 students from: MSc. in Psychology, MSc. in Biomedicine, MSc. in Global Health.

Supervised more than 15 students from: BSc. in Medicine, MSc. in Biomedicine.

Fundings & awards

Wallenberg Academy Fellowship (WAF) 2023. Grant number: 2023.0024. Amount awarded: 10,000,000 sek. Period: 5 years (2024 - 2029). Title of Project: "Re-wiring the brain: examining the dynamics of rapid brain plasticity in humans and rodents with high-resolution MRI".

Committee work

11th annual Neapolitan Brain Group Meeting, arranged by the "Federico II" University of Naples in collaboration with the Brainstorming Research Assembly for Young Neuroscientists (BraYn) in Naples, Italy. Committee for abstracts evaluation.

Reviewer activity

Brain Structure and Function · Cerebral Cortex · Frontiers in Neurology · Frontiers in Psychiatry · Human Brain Mapping · International Journal of Obesity · Psychological Medicine · Psychiatry Research: Neuroimaging · Behavioural Brain Research · Psychoneuroendocrinology · BMJ Open (protocol article)

Review Editor for Frontiers in Human Neuroscience since 2022.

Full list of publications

2022

Olivo G, Lövdén M, Manzouri A, Terlau L, Jenner B, Jafari A, Petersson S, Li TQ, Fischer H, Månsson KNT.

"Estimated gray matter volume rapidly changes after a short motor task."

Cereb Cortex. 2022 Feb 8;*bhab488.* doi: 10.1093/cercor/bhab488.

2021

Olivo G, Nilsson J, Garzón B, Lebedev A, Wåhlin A, Tarassova O, Ekblom M, Lövdén M.

"Higher VO₂max is associated with higher cortical thickness and lower grey matter blood flow in older adults."

Sci Rep. 2021 Aug 18;11(1):16724. doi: 10.1038/s41598-021-96138-5.

Welander NZ, Olivo G, Pisanu C, Rukh G, Schiöth HB, Mwinyi J.

"Migraine and gastrointestinal disorders in middle and old age: a UK Biobank study."

Brain Behav. 2021 Jul 21. doi: 10.1002/brb3.2291.

Olivo G, Nilsson J, Garzón B, Lebedev A, Wåhlin A, Tarassova O, Ekblom M, Lövdén M.

"Immediate effects of a single session of physical exercise on cognition and cerebral blood flow: A randomised controlled study of older adults."

Neuroimage. 2021 Jan 15;225:117500. doi: 10.1016/j.neuroimage.2020.117500.

2020

Alsehli AM, Olivo G, Clemensson LE, Williams MJ, Schiöth HB.

"The Cognitive Effects of Statins are Modified by Age."

Sci Rep 10, 6187 (2020). doi: 10.1038/s41598-020-63035-2

Melillo P, Prinster A, Di Iorio V, Olivo G, D'Alterio FM, Coccozza S, Quarantelli M, Brunetti A, Simonelli F.

"Biofeedback Rehabilitation and Visual Cortex Response in Stargardt's Disease: A Randomized Controlled Trial."

Translational Vision Science & Technology May 2020, Vol.9, 6. doi: 10.1167/tvst.9.6.6

Rukh G, Dang J, Olivo G, Ciuculete DM, Rask-Andersen M, Schiöth HB.

"Personality, lifestyle and job satisfaction: Causal association between neuroticism and job satisfaction using Mendelian randomisation in the UK biobank cohort."

Transl Psychiatry 10, 11 (2020). Doi: 10.1038/s41398-020-0691-3

2019

Pisanu C, Williams MJ, Ciuculete DM, Olivo G, Del Zompo M, Squassina A, Schiöth HB.

"Evidence that genes involved in serine/threonine kinase activity are associated with both bipolar disorder and high BMI."

Translational Psychiatry 2019; 9: 315; doi:10.1038/s41398-019-0652-x

Fredriksson R, Sreedharan S, Nordenankar K, Alsjö J, Hutchinson A, Eriksson A, Roshanbin S, Ciuculete DM, Klockars A, Todkar A, Häggglund MG, Hellsten, SV, Hindlycke V, Västermark Å, Shevchenko G, Olivo G, Cheng K, Kullander K, Moazzami A, Bergquist J, Olszewski P, Schiöth HB.

"The polyamine transporter Slc18b1(VPAT) is important for both short and long time memory and for regulation of spermidine content in the brain."

PLoS Genet 15(12): e1008455. doi: 10.1371/journal.pgen.1008455

Olivo G, Zhukovsky C, Salonen-Ros H, Larsson EM, Brooks SJ, Schiöth HB.

"Functional connectivity underlying food caloric content discrimination in female adolescents with atypical AN: The role of somatosensory and salience networks."

Transl Psychiatry. 2019; 9: 276; doi: 10.1038/s41398-019-0617-0

Olivo G, Gaudio S, Schiöth HB.

"Brain and cognitive development in adolescents with anorexia nervosa: a systematic review of fMRI studies."

Nutrients 2019, 11(8), 1907; doi: 10.3390/nu11081907

Gaudio S, Carducci F, Piervincenzi C, Olivo G, Schiöth HC.

"Altered thalamo-cortical and occipital-parietal-temporo-frontal white matter connections in eating disorders: A systematic review of diffusion tensor imaging studies."

J Psychiatry Neurosci. 2019 Apr 17;44(3):1-16. Doi: 10.1503/jpn.180121

Olivo G, Swenne I, Zhukovsky C, Tuunainen AK, Saaid A, Salonen-Ros H, Larsson EM, Brooks SJ, Schiöth HC.

"Preserved white matter microstructure in adolescent patients with atypical anorexia nervosa."

Int J Eat Disord. 2019 Jan 24. doi: 10.1002/eat.23012)

2018

Olivo G, Swenne I, Christina Zhukovsky C, Tuunainen AK, Salonen-Ros H, Larsson EM, Gaudio S, Brooks SJ, Schiöth HC.

"Reduced resting-state connectivity in areas involved in processing of face-related social cues in adolescents with atypical anorexia nervosa."

Transl Psychiatry. 2018 Dec 13;8(1):275. doi: 10.1038/s41398-018-0333-1.

Olivo G, Gour S, Schiöth HB.

"Low neuroticism and cognitive performance are differently associated to overweight and obesity: A cross-sectional and longitudinal UK Biobank study."

Psychoneuroendocrinology. 2018 Nov 12;101:167-174. doi: 10.1016/j.psyneuen.2018.11.014

Gaudio S, Olivo G, Beomonte Zobel B, Schiöth HB.

"Altered cerebellar-insular-parietal-cingular subnetwork in the earliest stages of anorexia nervosa restrictive type: a network based statistic analysis."

Translational Psychiatry (2018) 8:127 DOI: 10.1038/s41398-018-0173-z

Olivo G, Latini F, Wiemerslage L, Larsson EM, Schiöth HB.

"Disruption of accumbens and thalamic white matter connectivity revealed by diffusion tensor tractography in young men with genetic risk for obesity."

Front Hum Neurosci. 2018 Feb 22;12:75. doi: 10.3389/fnhum.2018.00075

Melillo P, Prinster A, Di Iorio V, Olivo G, D'Alterio FM, Coccozza S, Orrico A, Quarantelli M, Testa F, Brunetti A, Simonelli F.

"Visual cortex activation in patients with Stargardt disease."

Invest Ophthalmol Vis Sci. 2018 Mar 1;59(3):1503-1511. doi: 10.1167/iovs.17-22900.

Coccozza S, Pontillo G, Quarantelli M, Sacca' F, Riccio E, Costabile T, Olivo G, Brescia Morra V, Pisani A, Brunetti A, Tedeschi E.

"Default mode network modifications in fabry disease: A resting-state fmri study with structural correlations."

Hum Brain Mapp. 2018 Jan 9. doi: 10.1002/hbm.23949

Olivo G, Solstrand Dahlberg L, Wiemerslage L, Swenne I, Zhukovsky C, Salonen-Ros H, Larsson EM, Gaudio S, Brooks SJ, Schiöth HB.

"Atypical anorexia nervosa is not related to brain structural changes in newly-diagnosed adolescent patients."

Int J Eat Disord. 2018 Jan;51(1):39-45. doi: 10.1002/eat.22805

2017

Coccozza S, Russo C, Pisani A, Olivo G, Riccio E, Cervo A, Pontillo G, Feriozzi S, Veroux M, Battaglia Y, Concolino D, Pieruzzi F, Mignani R, Borrelli P, Imbriaco M, Brunetti A, Tedeschi E, Palma G.

"Redefining the pulvinar sign in fabry's disease."

AJNR Am J Neuroradiol. 2017 Dec;38(12):2264-2269. doi: 10.3174/ajnr.A5420

Olivo G, Zhou W, Sundbom M, Zhukovsky C, Hogenkamp P, Nikontovic L, Stark J, Wiemerslage L, Larsson EM, Benedict C, Schiöth HB.

"Resting-state brain connectivity changes in obese women after Roux-en-Y gastric bypass surgery: A longitudinal study."

Scientific Reports 2017 Jul; doi: 10.1038/s41598-017-06663-5

Coccozza S, Olivo G, Riccio E, Russo R, Pontillo G, Ugga L, Migliaccio S, de Rosa D, Feriozzi S, Veroux M, Battaglia Y, Concolino D, Pieruzzi F, Tuttolomondo A, Caronia A, Russo CV, Lanzillo R, Brescia Morra V, Imbriaco M, Brunetti A, Tedeschi E, Pisani A.

"Corpus callosum involvement: a useful clue for differentiating fabry disease from multiple sclerosis."

Neuroradiology. 2017 Jun;59(6):563-570. doi: 10.1007/s00234-017-1829-8

Olivo G, Wiemerslage L, Swenne I, Zhukowsky C, Salonen-Ros H, Larsson EM, Gaudio S, Brooks SJ, Schiöth HB.

"Limbic-thalamo-cortical projections and reward-related circuitry integrity affects eating behavior: a longitudinal DTI study in

adolescents with restrictive eating disorders.”

PLoS ONE 2017, 12(3). Doi: 10.1371/journal.pone.0172129

Wiemerslage L, Islam R, van der Kamp C, Cao H, Olivo G, Ence-Eriksson F, Castillo S, Larsen A, Bandstein M, Solstrand Dahlberg L, Perland E, Gustavsson V, Nilsson J, Vogel H, Schuermann A, Larsson EM, Rask-Andersen M, Benedict C, Schiöth HB.

“A DNA methylation site within the KLF13 gene is associated with orexigenic processes based on neural responses and ghrelin levels.”

Int J Obes (Lond). 2017 Feb 14. doi: 10.1038/ijo.2017.43

Cocozza S, Pisani A, Olivo G, Saccà F, Ugga L, Riccio E, Migliaccio S, Brescia Morra V, Brunetti A, Quarantelli M, Tedeschi E.

“Alterations of functional connectivity of the motor cortex in fabry's disease: an rs-fmri study.”

Neurology. 2017 May 9;88(19):1822-1829. doi: 10.1212/WNL.0000000000003913.

2016

Wiemerslage L, Zhou W, Olivo G, Stark J, Hogenkamp PS, Larsson E, Sundbom M, Schiöth HB.

“A resting-state fMRI study of obese females between pre- and postprandial states before and after bariatric surgery.”

Eur J Neurosci. 2016 Oct 8. doi: 10.1111/ejn.13428

Longarzo M, Quarantelli M, Aiello M, Romano M, Del Prete A, Cimminiello C, Cocozza S, Olivo G, Loguercio C, Trojano L, Grossi D.

“The influence of interoceptive awareness on functional connectivity in patients with Irritable Bowel Syndrome.”

Brain Imaging Behav 2016 DOI: 10.1007/s11682-016-9595-5

Hogenkamp P, Zhou W, Dahlberg L, Stark J, Larsen L, Olivo G, Wiemerslage L, Larsson EM, Sundbom M, Benedict M, Schiöth H.
“Higher resting-state activity in reward-related brain circuits in obese versus normal-weight females independent of food intake.”

Int J Obes (Lond). 2016 Jun 28. doi: 10.1038/ijo.2016.105.

Olivo G, Wiemerslage L, Nilsson EK, Solstrand Dahlberg L, Larsen AL, Olaya Búcaro M, Gustafsson VP, Titova OE, Bandstein M, Larsson EM, Benedict C, Brooks SJ, Schiöth HB.

“Resting-State Brain and the FTO Obesity Risk Allele: Default Mode, Sensorimotor, and Salience Network Connectivity Underlying Different Somatosensory Integration and Reward Processing between Genotypes.”

Front Hum Neurosci 2016 10:52. doi: 10.3389/fnhum.2016.00052

Wiemerslage L, Nilsson EK, Solstrand Dahlberg L, Ence-Eriksson E, Castillo S, Larsen AL, Bylund SB, Hogenkamp PS, Olivo G, Bandstein M, Titova OE, Larsson EM, Benedict C, Brooks SJ, Schiöth HB.

“An obesity-associated risk allele within the FTO gene affects brain activity for areas important for emotion, impulse control, and reward in response to food images.”

Eur J Neurosci 2016 Jan 21. do: 10.1111/ejn.13177.

2015

Olivo G, Melillo P, Sirio C, D'Alterio FM, Prinster A, Testa F, Brunetti A, Simonelli F, Quarantelli M.

“Cerebral Involvement in Stargardt's Disease: A VBM and TBSS Study.”

Invest Ophthalmol Vis Sci 2015 Nov; 56(12):7388-97. doi: 10.1167/iovs.15-16899.