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## Curriculum vitae

Elisabeth B. Binder

### Education:

1989 – 1995 MD: Medical School University of Vienna, Austria  
1992 – 1994 Exchange scholarship from the European Community (ERASMUS  
Scholarship) at the Université Libre de Brussels, Belgium  
08-1995 to 01-2000 PhD: PhD program in Neuroscience at the Emory University, Atlanta,  
Georgia USA.  
02-2000 to 08-2004 Clinical training in Psychiatry and postdoctoral work in Human Genetics at  
the Max Planck Institute of Psychiatry in Munich, Germany.

### Positions:

Starting 08-2013 Director, Dept. of Translational Research in Psychiatry, Max-Planck  
Institute of Psychiatry  
Starting 07-2019 Adjunct Professor at Emory University School of Medicine; Department of  
Psychiatry and Behavioral Science  
09-2016 – 06-2019 Full Professor at Emory University School of Medicine; Department of  
Psychiatry and Behavioral Science (secondary appointment)  
09-2011 – 8-2016 Associate Professor at Emory University School of Medicine; Department  
of Psychiatry and Behavioral Science (secondary appointment)  
06-2007 – 7-2013 Research Group Leader at Max-Planck Institute of Psychiatry (Research  
Group: Molecular Genetics of Depression), W2-equivalent position  
(Joint appointment with Emory University School of Medicine)  
09-2004 – 8-2011 Assistant Professor at Emory University School of Medicine; Department  
of Psychiatry and Behavioral Sciences

### Professional memberships:

Society for Neuroscience: 1995 – 2000, 2006-present  
American Society for Human Genetics: 2002-present  
Collegium Internationale Neuropsychopharmacologicum: 2006-present  
Society of Biological Psychiatry: 2006-present  
American College of Neuropsychopharmacology: Associate member, 2007, Full member, 2014,  
Fellow, 2020  
European College of Neuropsychopharmacology: 2012 – present

### Awards, Scholarships and Stipends:

1990, 1991, 1993 Excellence award, University of Vienna  
1990-1993 Performance award from the Senate of the University of Vienna  
1992, 1993 Erasmus stipend for exchange studies from the European  
Communities  
1995 – 2000 Fulbright scholarship  
1995 – 1997 Postgraduate stipend from the Austrian government  
1997 – 1999 Postgraduate scholarship from the Austrian Academy of Sciences

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1999	Research award, Summer Neuropeptide Conference
2002	Travel stipend of the "Deutsche Forschungs Gesellschaft" (German Research Society, DFG)
2005	Pfizer Scholars Grant in Clinical Psychiatry
2005	Young Investigator Travel Award; American College of Neuropsychopharmacology (ACNP)
2006	National Alliance for Research on Schizophrenia and Depression (NARSAD) Young Investigator Award
2006	Rafaelson Young Investigator Award; Collegium Internationale Neuropsychopharmacologicum (CINP)
2007	Doris Duke Clinical Scientist Development Award
2007	2007 NARSAD Michael F. Kaplan Investigator
2008	Hormosan-Pharma Research Award
2009	Behrens-Weise-Stiftung grant
2010	Theodore Reich Young Investigator Award of the International Society of Psychiatric Genetics
2012	Max Hamilton Memorial Prize of the Collegium Internationale Neuropsychopharmacologicum (CINP)
2015	GDBBS Distinguished Alumni Award, Emory University
2016	Eva King-Killam Research Award for outstanding translational research contribution to Neuropsychopharmacology (American College of Neuropsychopharmacology – ACNP)
2017	Member of the Leopoldina, the German National Academy of Sciences
2017	Carus Medal of the Leopoldina, the German National Academy of Sciences
2019	Valkhof Chair at the Radboud University Medical Center, Nijmegen, Netherlands
2019	Ron the Kloet award for Stress Research awarded by the Stress-NL Consortium

Scientific services:

2009-2015	External Advisory board member for the Department of Defense Post-Traumatic Stress Disorder and Traumatic Brain Injury Clinical Consortium
Since 2008	Deputy director of the Committee for Neurobiology and Genetics of the German Society for Psychiatry and Psychotherapy since 2008
Since 2010	Committee member: Committee for Genetics and Endophenotypes of the German Society for Biological Psychiatry
2008, 2015	Reviewer / Mentor, American Psychiatric Institute for Research and Education, (APIRE) for APA Junior Investigator Research Colloquium
2014-2016	Member women's task force committee CINP
2012-2015	member of the membership task force ACNP
2013	Expert Member of ROAMER (a roadmap for mental health research in Europe) – WP4 Affective Systems Expert Group, funded by the 7th Framework Programme of the European Community

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2013-2015	Member of the Awards Committee of the International Society of Psychiatric Genetics (ISPG)
2014-present	Board Member and since 2016 Secretary of ISPG
2013-2016	Member: College of Reviewers for the Canada Research Chairs Program
2014-present	Member of the Advisory Committee of the Child & Brain Development Program of the The Canadian Institute for Advanced Research, chair since 2019
2014-present	Member, Executive Committee of the European College of Neuropsychopharmacology (ECNP)
2019-present	Vice President of ECNP
2014 – 2017	Member, Council Collegium Internationale Neuropsychopharmacologicum CINP
2016 -	Member of the Advisory Board, Steering committee NCCR (National Centres of Competence for Research) “SYNAPSY – Synaptic bases of mental diseases”
2017 -	Member of the Scientific Advisory Boards of the Donders Institutes for Brain Cognition and Behavior, Nijmegen, Netherlands
2017	McLean Hospital's External Scientific Advisory Board member
2019 -	Fellow of the Max Planck School of Cognition
2019 -	Member of the steering committee of the ALBA Network (towards diversity and equality in brain sciences)

Conference organization:

- Member of the Scientific Committee of the focused conference session: New Approaches and Targets in Psychiatry. WorldPharma 2010, Copenhagen.
- 2011 World Congress of Psychiatric Genetics, Washington D.C., Program Committee member.
- 2012 World Congress of Psychiatric Genetics, Hamburg, Local Organizing Committee member.
- 2013 World Congress of Psychiatric Genetics, Boston, Program Committee member.
- Member of the International Scientific Committee (ISC) of the CINP Thematic Meeting on Pharmacogenomics and Personalised Medicine in Psychiatry (Tel Aviv 2013).
- Member of the Society of Biological Psychiatry's Program Planning Committee for the 2013 through 2015 meetings
- Member of the Scientific Programme Committee for the 28th ECNP Congress 2015
- 2016 World Congress of Psychiatric Genetics, Jerusalem, Program Committee member.
- 2016 FENS Forum, Copenhagen, Program Committee member
- 2017 Annual Meeting of the International Society of Psychiatric Genetics, Member of the Scientific Programme Committee

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- 2017 Meeting of the World Association of Stress and Anxiety Disorders, Conference President
- 2018 Annual Meeting of the International Society of Psychiatric Genetics, Member of the Scientific Programme Committee
- Member of the Scientific Programme Committee for the 32nd ECNP Congress 2019
- 2020 World Congress of Psychiatric Genetics, Florence, Program Committee chair

Patents granted and patent applications:

1. FKBP5: a novel target for antidepressant therapy. *European Patent# EP 1687443 B1*
2. Polymorphisms in ABCB1 associated with a lack of clinical response to medicaments. United States Patent # 8030033
3. Means and methods for diagnosing predisposition for treatment emergent suicidal ideation (TESI). European application number: 08016477.5 International application number: PCT/EP2009/061575.

Editorial Activities:

- *Frontiers in Molecular Psychiatry*: Review Editor since 2010
- *Biology of Mood and Anxiety Disorders*: Associate Editor since 2010
- *Current Psychiatry*: Section editor: – Section: Genetics
- *Genes, Brain and Behavior*: Member Editorial Board since 2012
- *Journal of Neural Transmission*: Field editor 2012 - 2017
- *Neurobiology of Stress*: Member Editorial Board since 2014
- *Depression and Anxiety*: Member Editorial Board since 2014
- *European Archives of Psychiatry and Clinical Neuroscience*: Associate Editor since 2016
- *Biological Psychiatry*: Member Editorial Board since 2017
- *The American Journal of Psychiatry*: Deputy Editor since 01. 2019

Journal and grant application reviews:

Ad hoc reviewer for a number of journals, including *Science*, *Nature Communication*, *Nature Neuroscience*, *JAMA*, *JAMA Psychiatry*, *Lancet Psychiatry*, *American Journal of Psychiatry*, *Genome Biology*, *Molecular Psychiatry*, *Journal of Neuroscience*, *Biological Psychiatry* and *Neuropsychopharmacology* as well as other psychiatric, genetic and endocrine journals and others.

Reviewer for grant applications to the National Institute of Mental Health (NIMH), German Research Society, Swiss National Fund, Austrian National Bank Foundation, Estonian Science Foundation, Agence National de Recherche (France), Netherlands Organisation for Scientific Research: Earth and Life Sciences, Medical Research Council (UK), National Health & Medical Research Council (Australia), Academy of Finland and a number of private foundations.

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**Current and past grant support:**

***Ongoing Research Support***

Kids2Health (PI Heim, Binder project PI) 01/11/17 – 01/10/21  
German Federal Ministry of Health and Education (BMBF); 4,180,492 €/4 years (666,500 € for proj.)

Kids2Health: Understanding and Mitigating the Impact of Early Life Stress on Disease Risk: Towards Developmental Programming of Lifelong Health

Else Kröner Fresenius (EKF) Forschungskolleg 06/2017-05/2023  
Else Kröner Fresenius Foundation

"Translational Psychiatry" (PD Binder, with P. Falkai LMU)  
2,000,000 €/ 6 years, Educational grant for training of physician scientists

Hope for Depression Foundation grant (PI Binder) 07/2019-06/2023  
Hope for Depression Foundation 350,000 USD/year  
Deciphering mechanisms of gene x adversity interactions: new insights for the prevention, diagnosis and treatment of depression

Marie Skłodowska-Curie Innovative Training Network (Binder Project PI) 09/2019-08/2023  
International Training Network - Horizon 2020 252,788 € to MPI, 3,773,266 € total  
TransSYS - Translational SYStemics: Personalised Medicine at the Interface of Translational Research and Systems Medicine

***Completed Research:***

NIH/NIMH 1R01MH108348-01A1 (PI Dunlop/Kaddurah-Daouk, Binder Co-I) 04/01/16 – 3/31/20

Metabolomic Signatures Predictive of Outcomes to Treatments for Major Depression  
This grant will involve the metabolomic, genetic, and neuroimaging analysis of samples and data collected as part of the Emory PReDICT and Mayo Pharmacogenomics Research Network antidepressant trials.

1R01MH103848-01A1 (PI Dickey USF/ Binder Co-I) 09/01/14-08/31/19

NIH/NIMH  
\$312,000/year for 5 years  
Modeling stress-related psychopathology through FKBP5 manipulation.

NARSAD 2017 Distinguished Investigator Grant (PI Binder) 03/2018 – 02/2019  
Brain & Behavior Research Foundation 100,000 USD  
Dissecting epigenetic consequences of prenatal adversity using human brain organoids

MecTranGen (Project PI Binder) 07/2014-06/2017  
ERA-Net Neuron/BMBF  
245,000 @/3 years  
Biological Mechanisms of transgenerational transmission of early life stress

INTEGRAMENT (Binder Co-I) 05/2014-05/2017  
German Federal Ministry of education and research (BMBF)  
57,000 €/ 3 years  
National Consortium to use large datasets and omics to study psychiatric disorders

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“Jacobs Entwicklungsstudie” (Co-PIs: Shing/Heim/Binder) Jacobs Foundation 500,000 €/3 years (107,000€ for MPIP); Delineating the Contribution of Glucocorticoid Pathways to Stress-Related Social Disparities in Cognitive Child Development	01/01/15 – 01/01/18
Project within PsyCourse (Binder/Philipp Saemann) German Science Foundation (DFG) 96.000 € personnel/25.200 € consumables/2 years	01/2015- 12/2017
Böhringer-Ingelheim „FKBP5, a potential drug target“ 400,000 €/3 years	01/2016-12/2018
Berlin Longitudinal Children Study (Binder Project PI) German Federal Ministry of education and research (BMBF) 2,053,404 €/ 3 years (446,700 for project), prolonged in 2016 “Immediate Biological Embedding of Maltreatment in Children: Berlin Longitudinal Children Study” This grant investigates developmental trajectories of risk in maltreated children using endocrine, neuroimaging and molecular genetic methods.	07/2013-06/2017
ERC starting grant 281338 (PI Binder) European Research Council 1,254,000 €/5 years “Gene x environment interactions in affective disorders – elucidating molecular mechanisms”. This grants focuses on the molecular mechanisms of FKBP5 x early trauma interactions.	03/2012-02/2017
632217 - FKBP2Drug (PI Binder) ERC-2013-PoC 150,000 €/1 year Development of FKBP51-Inhibitors to treat stress-related disorders: assessment of feasibility	05/2014-05/2015
R01 MH071537-01A1 (PI: K. Ressler, Binder Co-I) NIH/NIMH “Genetic and Trauma-Related Risk Factors for PTSD” This grant investigates gene x environment interactions in PTSD.	09/01/2005-08/30/2015
NR014886-01 (PI Neigh, Binder Co-I) NIH/NINR Adult Implications of Chronic Adolescent Stress: Mediators and Modifiers. Determination of the role of sex differences in transcription factors in differential phenotype manifestation of chronic adolescent stress.	03/01/14-02/28/19
R01 MH105561-01 (PI Guo, Binder Co-I) NIH/NIMH Statistical ICA Methods for Analysis and Integration of Multi-Dimensional Data This grant aims to develop new method for the analysis and integration of large multidimensional datasets.	07/01/14-06/30/19
RO1 (PI Ressler, Binder Co-I) NIH/NIMH	04/01/2012-03/31/2017

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Genetic, epigenetic, and estrogen-dependent regulation of the human PAC1 receptor and PTSD. This grant investigates the molecular mechanism of how PAC1 and its receptor alter the risk for PTSD

Department of Veterans Affairs

CSR&D Merit Review Award (PI: Bradley; Binder Co-I)

03/15/10-03/15/14

Deployment Health Research (OEF/OIF)

“Genetic and Environmental Risk/Resilience Factors for PTSD in OEF/OIF Veterans”

this grant evaluated genetic, environmental factors and G X E interactions in predicting risk and resilience for combat-related PTSD as well as changes in PTSD-biomarkers during a combat-related psychosocial stress task and during a fear conditioning paradigm.

SCHU 1596/4-1 (PI: Schumacher, Binder Co-PI)

2012-2014

German Research Council (DFG)

180,000 €/2 years

“Identification of risk genes for panic disorder through genome-wide association studies”. This grant proposed genome-wide genotyping in Pan-European samples.

RO1 MH080880-01 (PI: Craighead, Binder Co-I)

04/01/08-03/31/13

NIH/NIMH “Predictors of treatment response, relapse, and recurrence in major depression”

This study was a follow-up to the Emory CIDAR project. It sought to determine which of several molecular neurobiology, fMRI, genetic, and personality variables predict depression relapse and recurrence following successful monotherapy and combination treatments with CBT, duloxetine, and escitalopram

RO1 MH084068-01A1 (PI: Rilling, Binder Co-I)

08/1/09 7/31/13

NIH/NIMH “Neurobiological and genetic correlates of cooperative behavior”

This project investigated the biological bases of individual variation in human cooperative behavior in the context of the Prisoner’s Dilemma game, using neuroimaging, personality and genetic data, as well as pharmacological manipulations.

NIH MH069056 (PI: Mayberg, Binder Core-PI)

09/01/09-06/30/13

NIH/NIMH “Emory-GSK-NIMH Collaborative Mood Disorders Initiative”.

This grant investigated clinical and preclinical aspects of novel CRHR1 antagonists.

Behrens-Weise Foundation grant (PI Binder)

01/02/10 to 31/12/12

Behrens-Weise Foundation

90,000 €/3 years

“Genetic variants influencing the impact of early trauma on risk for affective disorders”.

P50 MH077083-01 (PI: Mayberg H, Binder Project Co-PI)

08/01/2006 to 07/31/2012

NIH/NIMH “Mental Health Centers for the Intervention, Development and Applied Research (CIDAR)”

Predictors of Antidepressant Treatment Response: The Emory CIDAR.

R01-MH56897 (PI Young, Binder Co-I)

09/1/07-8/31/12

NIH/NIMH “Central vasopressin receptor and affiliation.”

The goal of this grant was to investigate the relationship between vasopressin receptor gene expression and species differences in affiliative behavior in prairie voles.

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Doris Duke Clinical Scientist Award 2007 (PI: Binder) 08/01/2007 to 07/31/2010  
Doris Duke Foundation 375,000 USD/3 years "Molecular predictors of peripartum depression"

This grant examined lymphocytic expression changes of glucocorticoid receptor chaperones as predictors in postpartum depression.

PharmaNeuroBoost contract (PI Binder) 05/01/2009 to 04/30/2010  
PharmaNeuroBoost Inc.  
30,000 USD total

"Pharmacogenetic Investigation of Efficacy, Safety and Pharmacokinetics of Patients receiving Citalopram or Pimpamperone/Citalopram in the treatment of major depressive disorders.

R21 MH076024-01 (PI: Binder) 08/15/2006 to 08/14/2008  
NIH/NIMH 250,000 USD/2 years

"Peri-Partum Depression and Genetics of Glucocorticoid Receptor Regulating Genes"

This grant investigated the role of genetic variants of glucocorticoid receptor regulating genes on peripartum depression and related endocrine parameters

NARSAD Young Investigator Award (PI: Binder) 07/01/2006 to 06/30/2008  
NARSAD 60,000 USD/2 years

"Chaperones of the Glucocorticoid Receptor, Early Life Stress and Depression"

This grant investigated the impact of early life stress and depression on the expression and function of chaperones of the glucocorticoid receptor.

Pfizer Scholar Award in Clinical Psychiatry (PI: Binder) 07/01/2005 to 06/30/2007  
Pfizer 150,000 USD/2 years

"Genetic variation in proteins of the glucocorticoid receptor complex in normal pregnancy and peri-partum depression"

This is a career award to investigate the role of genetic variants of glucocorticoid receptor regulating genes on peripartum depression and related endocrine parameters.

Nationales Genomforschungsnetz (F. Holsboer PI, Binder Co-I) 5/1/2001-04/30/2004  
Ministry of Education and Research

Genetics of affective disorders" within the "Nationales Genomforschungsnetz" (National Genome Research Network).

(Holsboer F, **Binder EB** Co-PI) 10/1/2002 to 31/8/2004

Bavarian Ministry of Commerce The "Munich Antidepressant Response Signature" (M.A.R.S.) Project; Pharmacogenetics of Antidepressant Response.

This grant investigated pharmacogenetic predictors of antidepressant treatment response



**Publications:**

1. Yeung EH, Guan W, Zeng X, Salas LA, Mumford SL, de Prado Bert P, van Meel ER, Malmberg A, Sunyer J, Duijts L, Felix JF, Czamara D, Hämäläinen E, **Binder EB**, Räikkönen K, Lahti J, London SJ, Silver RM, Schisterman EF. Cord blood DNA methylation reflects cord blood C-reactive protein levels but not maternal levels: a longitudinal study and meta-analysis. *Clin Epigenetics*. 2020;12:60.
2. Thomas M, Coope A, Falkenberg C, Dunlop BW, Czamara D, Provencal N, Craighead WE, Mayberg HS, Nemeroff CB, **Binder EB**, Nieratschker V. Investigation of MORC1 DNA methylation as biomarker of early life stress and depressive symptoms. *J Psychiatr Res*. 2020;120:154-162.
3. Shen X, Howard DM, Adams MJ, Hill WD, Clarke TK, Deary IJ, Whalley HC, McIntosh AM. A phenome-wide association and Mendelian Randomisation study of polygenic risk for depression in UK Biobank. *Nat Commun*. 2020;11:2301.
4. Rantalainen V, **Binder EB**, Lahti-Pulkkinen M, Czamara D, Laivuori H, Villa PM, Girchenko P, Kvist T, Hämäläinen E, Kajantie E, Lahti J, Räikkönen K. Polygenic prediction of the risk of perinatal depressive symptoms. *Depress Anxiety*. 2020.
5. Pöhlichen D, Leuchs L, Binder FP, Blaskovich B, Nantawisarakul T, Topalidis P, Brückl TM, Norrholm SD, Jovanovic T, Spoomaker VI. No robust differences in fear conditioning between patients with fear-related disorders and healthy controls. *Behav Res Ther*. 2020;129:103610.
6. Merid SK, Novoloaca A, Sharp GC, Küpers LK, Kho AT, Roy R, Gao L, Annesi-Maesano I, Jain P, Plusquin M, Kogevinas M, Allard C, Vehmeijer FO, Kazmi N, Salas LA, Rezwan FI, Zhang H, Sebert S, Czamara D, Rifas-Shiman SL, Melton PE, Lawlor DA, Pershagen G, Breton CV, Huen K, Baiz N, Gagliardi L, Nawrot TS, Corpeleijn E, Perron P, Duijts L, Nohr EA, Bustamante M, Ewart SL, Karmaus W, Zhao S, Page CM, Herceg Z, Jarvelin MR, Lahti J, Baccarelli AA, Anderson D, Kachroo P, Relton CL, Bergström A, Eskenazi B, Soomro MH, Vineis P, Snieder H, Bouchard L, Jaddoe VW, Sørensen TIA, Vrijheid M, Arshad SH, Holloway JW, Håberg SE, Magnus P, Dwyer T, **Binder EB**, DeMeo DL, Vonk JM, Newnham J, Tantisira KG, Kull I, Wiemels JL, Heude B, Sunyer J, Nystad W, Munthe-Kaas MC, Räikkönen K, Oken E, Huang RC, Weiss ST, Antó JM, Bousquet J, Kumar A, Söderhäll C, Almqvist C, Cardenas A, Gruziova O, Xu CJ, Reese SE, Kere J, Brodin P, Solomon O, Wielscher M, Holland N, Ghantous A, Hivert MF, Felix JF, Koppelman GH, London SJ, Melén E. Epigenome-wide meta-analysis of blood DNA methylation in newborns and children identifies numerous loci related to gestational age. *Genome Med*. 2020;12:25.
7. Kühnel A, Kroemer NB, Elbau IG, Czisch M, Sämann PG, Walter M, **Binder EB**. Psychosocial stress reactivity habituates following acute physiological stress. *Hum Brain Mapp*. 2020.
8. Krontira AC, Cruceanu C, **Binder EB**. Glucocorticoids as Mediators of Adverse Outcomes of Prenatal Stress. *Trends Neurosci*. 2020;43:394-405.
9. Howe CG, Cox B, Fore R, Jungius J, Kvist T, Lent S, Miles HE, Salas LA, Rifas-Shiman S, Starling AP, Yousefi P, Ladd-Acosta C, Baccarelli A, **Binder EB**, Chatzi VL, Czamara D, Dabelea D, DeMeo DL, Ghantous A, Herceg Z, Kajantie E, Lahti JMT, Lawlor DA, Litonjua A, Nawrot TS, Nohr EA, Oken E, Pizzi C, Plusquin M, Raikkonen K, Relton CL, Sharp GC, Sorensen TIA, Sunyer J, Vrijheid M, Zhang W, Hivert MF, Breton CV. Maternal Gestational Diabetes Mellitus and Newborn DNA Methylation: Findings From the Pregnancy and Childhood Epigenetics Consortium. *Diabetes Care*. 2020;43:98-105.
10. Hagenaaers SP, Coleman JRI, Choi SW, Gaspar H, Adams MJ, Howard DM, Hodgson K, Traylor M, Air TM, Andlauer TFM, Arolt V, Baune BT, **Binder EB**, Blackwood DHR, Boomsma DI, Campbell A, Cearns M, Czamara D, Dannlowski U, Domschke K, de Geus EJC, Hamilton SP, Hayward C, Hickie IB, Hottenga JJ, Ising M, Jones I, Jones L, Kutalik

- Z, Lucae S, Martin NG, Milaneschi Y, Mueller-Myhsok B, Owen MJ, Padmanabhan S, Penninx B, Pistis G, Porteous DJ, Preisig M, Ripke S, Shyn SI, Sullivan PF, Whitfield JB, Wray NR, McIntosh AM, Deary IJ, Breen G, Lewis CM. Genetic comorbidity between major depression and cardio-metabolic traits, stratified by age at onset of major depression. *Am J Med Genet B Neuropsychiatr Genet.* 2020.
11. Glanville KP, Coleman JRI, Hanscombe KB, Euesden J, Choi SW, Purves KL, Breen G, Air TM, Andlauer TFM, Baune BT, **Binder EB**, Blackwood DHR, Boomsma DI, Buttenschon HN, Colodro-Conde L, Dannlowski U, Direk N, Dunn EC, Forstner AJ, de Geus EJC, Grabe HJ, Hamilton SP, Jones I, Jones LA, Knowles JA, Kotalik Z, Levinson DF, Lewis G, Lind PA, Lucae S, Magnusson PK, McGuffin P, McIntosh AM, Milaneschi Y, Mors O, Mostafavi S, Muller-Myhsok B, Pedersen NL, Penninx B, Potash JB, Preisig M, Ripke S, Shi J, Shyn SI, Smoller JW, Streit F, Sullivan PF, Tiemeier H, Uher R, Van der Auwera S, Weissman MM, O'Reilly PF, Lewis CM. Classical Human Leukocyte Antigen Alleles and C4 Haplotypes Are Not Significantly Associated With Depression. *Biol Psychiatry.* 2020;87:419-430.
  12. Coleman JRI, Peyrot WJ, Purves KL, Davis KAS, Rayner C, Choi SW, Hübel C, Gaspar HA, Kan C, Van der Auwera S, Adams MJ, Lyall DM, Choi KW, Dunn EC, Vassos E, Danese A, Maughan B, Grabe HJ, Lewis CM, O'Reilly PF, McIntosh AM, Smith DJ, Wray NR, Hotopf M, Eley TC, Breen G. Correction: Genome-wide gene-environment analyses of major depressive disorder and reported lifetime traumatic experiences in UK Biobank. *Mol Psychiatry.* 2020.
  13. Coleman JRI, Peyrot WJ, Purves KL, Davis KAS, Rayner C, Choi SW, Hubel C, Gaspar HA, Kan C, Van der Auwera S, Adams MJ, Lyall DM, Choi KW, Dunn EC, Vassos E, Danese A, Maughan B, Grabe HJ, Lewis CM, O'Reilly PF, McIntosh AM, Smith DJ, Wray NR, Hotopf M, Eley TC, Breen G. Genome-wide gene-environment analyses of major depressive disorder and reported lifetime traumatic experiences in UK Biobank. *Mol Psychiatry.* 2020.
  14. Brückl TM, Spormaker VI, Sämann PG, Brem AK, Henco L, Czamara D, Elbau I, Grandi NC, Jollans L, Kühnel A, Leuchs L, Pöhlchen D, Schneider M, Tontsch A, Keck ME, Schilbach L, Czisch M, Lucae S, Erhardt A, **Binder EB**. The biological classification of mental disorders (BeCOME) study: a protocol for an observational deep-phenotyping study for the identification of biological subtypes. *BMC Psychiatry.* 2020;20:213.
  15. Bierer LM, Bader HN, Daskalakis NP, Lehrner A, Provençal N, Wiechmann T, Klengel T, Makotkine I, **Binder EB**, Yehuda R. Intergenerational Effects of Maternal Holocaust Exposure on FKBP5 Methylation. *Am J Psychiatry.* 2020:appiajp201919060618.
  16. Arloth J, Eraslan G, Andlauer TFM, Martins J, Iurato S, Kühnel B, Waldenberger M, Frank J, Gold R, Hemmer B, Luessi F, Nischwitz S, Paul F, Wiendl H, Gieger C, Heilmann-Heimbach S, Kacprowski T, Laudes M, Meitinger T, Peters A, Rawal R, Strauch K, Lucae S, Müller-Myhsok B, Rietschel M, Theis FJ, **Binder EB**, Mueller NS. DeepWAS: Multivariate genotype-phenotype associations by directly integrating regulatory information using deep learning. *PLoS Comput Biol.* 2020;16:e1007616.
  17. Amare AT, Schubert KO, Hou L, Clark SR, Papiol S, Cearns M, Heilbronner U, Degenhardt F, Tekola-Ayele F, Hsu YH, Shekhtman T, Adli M, Akula N, Akiyama K, Ardaur R, Arias B, Aubry JM, Backlund L, Bhattacharjee AK, Bellivier F, Benabarre A, Bengesser S, Biernacka JM, Birner A, Brichant-Petitjean C, Cervantes P, Chen HC, Chillotti C, Cichon S, Cruceanu C, Czerski PM, Dalkner N, Dayer A, Del Zompo M, DePaulo JR, Étain B, Jamain S, Falkai P, Forstner AJ, Frisen L, Frye MA, Fullerton JM, Gard S, Garnham JS, Goes FS, Grigoriou-Serbanescu M, Grof P, Hashimoto R, Hauser J, Herms S, Hoffmann P, Hofmann A, Jiménez E, Kahn JP, Kassem L, Kuo PH, Kato T, Kelsoe JR, Kittel-Schneider S, Kliwicki S, König B, Kusumi I, Laje G, Landén M, Lavebratt C, Leboyer M, Leckband SG, Tortorella A, Manchia M, Martinsson L, McCarthy MJ, McElroy SL, Colom F, Mitjans M, Mondimore FM, Monteleone P, Nievergelt CM,

- Nöthen MM, Novák T, O'Donovan C, Ozaki N, Ösby U, Pfennig A, Potash JB, Reif A, Reininghaus E, Rouleau GA, Rybakowski JK, Schalling M, Schofield PR, Schweizer BW, Severino G, Shilling PD, Shimoda K, Simhandl C, Slaney CM, Squassina A, Stamm T, Stopkova P, Maj M, Turecki G, Vieta E, Veeh J, Witt SH, Wright A, Zandi PP, Mitchell PB, Bauer M, Alda M, Rietschel M, McMahon FJ, Schulze TG, Baune BT. Association of polygenic score for major depression with response to lithium in patients with bipolar disorder. *Mol Psychiatry*. 2020.
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