

Dr. Karin de Punder

Institute of Psychology, Department of Clinical Psychology
University of Innsbruck, Innsbruck, Tirol, Austria

Email: Karin.de-punder@uibk.ac.at

Tel: +43 512 507-56077 | Mob: +49 1634394054

<https://www.uibk.ac.at/psychologie/mitarbeiter/de-punder/>

Researchgate: [Karin PUNDER | PhD \(researchgate.net\)](#)

ORCID: 0000-0003-0510-9147



Positions

- Since 2021 Postdoctoral Researcher, Institute of Psychology, Department of Clinical Psychology, University of Innsbruck, Innsbruck, Austria
Projects:
- *Investigating clinical, structural and neuroendocrine changes in adolescent and young adult patients over the course of a multimodal psychodynamic psychotherapy intervention (PsyNeurEndo)*
 - *Investigating the biomolecular effects of electroconvulsive therapy on mitochondrial bioenergetics in treatment-resistant patients with major depressive disorder (MITO-ECT)*
 - *Brain cytochrome-c-oxidase assessed by Near-infrared spectroscopy (NIRS) as a mitochondrial biomarker in depression (CCO-NIRS)*
 - *Prenatal stress and programming of newborn and infant telomere biology and cellular aging*
 - *Cellular aging processes related to trauma and psychiatric disease risk*
- 2020-2021 R&D Specialist, Naturafoundation, Numansdorp, The Netherlands
- 2019-2020 Maternity leave
- 2018-2020 Postdoctoral Researcher, Institute of Medical Psychology, Charité – Universitätsmedizin Berlin, Berlin, Germany
Projects:
- *Prenatal stress and programming of newborn and infant telomere biology and cellular aging*
 - *Kids to Health (follow up BerlinLCS study)*
- 2014-2018 Doctoral Student/Research Assistant, Institute of Medical Psychology, Charité – Universitätsmedizin Berlin, Berlin, Germany
Supervised by Prof. Dr. Sonja Entringer and Prof. Dr. Christine Heim
Projects:
- *Validation of a measure of in-vitro stimulated telomerase expression as a stress-related biomarker for human studies*
 - *Immediate biological embedding of maltreatment in children: Berlin Longitudinal Children Study (BerlinLCS)*
 - *Biological aging and inflammation in patients with major depression exposed to childhood adversity*
- 2008-2013 Research Technician, Division of Cell Biology II, Netherlands Cancer Institute (NKI-AVL), Amsterdam, The Netherlands

Curriculum Vitae – Karin de Punder

- *Studying the immunology and cell biology of host pathogen interactions using microscopy and immunological techniques*
- 2005-2008 Research Technician, Division of Animal Pathology, Netherlands Cancer Institute (NKI, AVL), Amsterdam, The Netherlands
- *Performing immunohistochemistry, histology and in vitro hybridization on animal tissue*

Education

- 2014-2018 Doctoral Degree at the Institute of Medical Psychology, Charité – Universitätsmedizin Berlin, Berlin, Germany (**Summa cum laude**)
Thesis: Characterization in humans of in vitro leukocyte maximal telomerase activity capacity (mTAC) and association with stress
- 2010-2013 Master Course in Clinical Psychoneuroimmunology, University of Girona, Girona, Spain
- 2002-2004 M.Sc. Degree in Biomedical Sciences, Leiden University, Leiden, The Netherlands
Thesis: The MR/GR balance hypothesis in the pathogenesis of major depression
- 1999-2002 B.Sc. Degree in Biomedical Sciences, Leiden University, Leiden, The Netherlands

Extra Training

- 2017 Workshop - Multilevel analysis using R, Humboldt University, Berlin, Germany
- 2014 Workshop - Measuring the cortisol diurnal profile, Arizona State University, Phoenix, AZ, USA
- 2009 Course on Clinical Psychoneuroimmunology, Natura Foundation, Numansdorp, The Netherlands
- 2008 Course on Nutrition, Natura Foundation, Numansdorp, The Netherlands
- 2003 Course on Laboratory Animal Science (article 9), Leiden University, Leiden, The Netherlands

Languages

- Dutch – Native proficiency
- English – Full professional working proficiency
- German – Professional working proficiency

Teaching Experience

- Since 2021 Supervisor – Master projects, University of Innsbruck, Innsbruck, Austria
- Since 2022 Master Program in Psychology – Intergenerational transmission of psychiatric disease risk, Seminar, University of Innsbruck, Innsbruck, Austria
- Since 2022 Master Program in Psychology – Scientific methods in Psychoneuroimmunology, Seminar, University of Innsbruck, Innsbruck, Austria
- Since 2021 Master in Psychology – Biological embedding of early life stress in the context of psychiatric disease risk, Seminar, University of Innsbruck, Innsbruck, Austria
- 2016-2019 Supervisor – Bachelor and Master projects, Charité – Universitätsmedizin Berlin, Berlin, Germany
- 2018-2019 Model Curriculum Human Medicine – Early Life Programming of Disease Susceptibility, Seminar, Module 6, Charité – Universitätsmedizin Berlin, Berlin, Germany
- 2016-2019 Model Curriculum Human Medicine – Gene-Environment Interactions in Psychiatric Disorders, Seminar, Module 31, Charité – Universitätsmedizin Berlin, Berlin, Germany

Curriculum Vitae – Karin de Punder

- 2016-2019 Model Curriculum Human Medicine – Workshop - Measuring the cortisol diurnal profile in saliva, M07, Charité – Universitätsmedizin Berlin, Berlin, Germany
- 2017 Psychoneuroimmunology (PNI) Autumn School – PNI and prenatal programming, University Witten/Herdecke, Witten, Germany
- 2010-2013 Workshop – In the footsteps of Antoni van Leeuwenhoek Basic Course: introducing the basics of electron microscopy, Netherlands Cancer Institute (NKI/AVL), Amsterdam, The Netherlands
- 2011-2013 Instructor – Introducing new people in the laboratory to the basics of electron microscopy and other laboratory procedures, Netherlands Cancer Institute (NKI/AVL), Amsterdam, The Netherlands

Psychobiological and Laboratory Expertise

- Psychobiological stress assessment (Trier Social Stress Test, TSST), assessment of endocrine, immune and autonomic responses
- ELISA; stress and immune markers in blood, immune cells, hair and saliva
- Telomere length and telomerase activity assay
- Mitochondrial respiratory function assessment
- Fluorescence and electron microscopy
- Glucocorticoid receptor sensitivity assays

Research interests

My research interests involve the consequences of psychological stress conditions (e.g. chronic stress in adults, childhood traumatic experiences and prenatal stress) on the aging of the immune system and the development of somatic and mental health problems. Additionally, it includes the identification of biomarkers for disease risk and resilience and new targets for intervention, with a focus on the following biological mechanisms:

- The neuroendocrine system
- Inflammaging
- Telomere biology
- Mitochondrial function
- Metabolic function

Honours and Awards

- 2023 **Early Career Poster Award**, 53rd International Society of Psychoneuroendocrinology (ISPNE) Conference, London, UK
- 2019 **Travel Award**, 49th International Society of Psychoneuroendocrinology (ISPNE) Conference, Milan, Italy
- 2018 **Excellence in Salivary Bioscience Travel Award**, 48th International Society of Psychoneuroendocrinology (ISPNE) Conference, Irvine, CA, USA

Memberships

- International Society of Psychoneuroendocrinology (ISPNE)
- The European Psychoneuroimmunology Network (EPN)
- German Brain-Immune Network (GEBIN)

Funding

- Project **PsyNeuroEndo**: "Clinical, structural and neuroendocrine changes in adolescent and young adult patients through multimodal psychodynamic psychotherapy". Project proposal submitted to the Köhler-Stiftung. Approved funding amount 48,623 €.
- Co-applicant of the **NeuroCure Innovation Projects** funded project entitled "Validation of a measure of in-vitro stimulated telomerase expression as a stress-related biomarker for human studies". Approved funding: 18,740 €.

Relevant Original and Review Articles

Complete bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/1twBsnYh9aAMw/bibliography/public/>

Impact

- Citations – 2,537
- h-index - 21

Joseph J, Buss C, Knop A, **de Punder K**, Winter SM, Spors B, Binder E, Haynes JD, Heim H. Greater maltreatment severity is associated with smaller brain volume with implication for intellectual ability in young children. *Neurobiology of Stress*. 2023. 100576. doi.org/10.1016/j.ynstr.2023.100576.

Schaper SJ, Wölk E, Hofmann T, Friedrich T, Römer M, **de Punder K**, Rose M, Stengel A. NUCB2/nesfatin-1 in the acute stress response of obese women with high and low anxiety. *Psychoneuroendocrinology*. 2023 Sep;155:106325. doi: 10.1016/j.psyneuen.2023.106325. Epub 2023 Jun 23.

de Punder K, Heim C, Martens DS, Wadhwa PD, Entringer S. Maximal telomerase activity capacity (mTAC) underlies the link between the cortisol response to stress and telomere length. *Psychoneuroendocrinology*. 2023 Apr 20;153:106120. doi: 10.1016/j.psyneuen.2023.106120. Epub ahead of print. PMID: 37104965.

Karabatsiakos A, **de Punder K**, Salinas-Manrique J, Todt M, Dietrich DE. Hair cortisol level might be indicative for a 3PM approach towards suicide risk assessment in depression: comparative analysis of mentally stable and depressed individuals versus individuals after completing suicide. *EPMA J*. 2022 Aug 30;13(3):383-395. doi: 10.1007/s13167-022-00296-z.

Karabatsiakos A, **de Punder K**, Doyen-Waldecker C, Ramo-Fernández L, Krause S, Gump AM, Bach AM, Fegert JM, Kolassa IT, Gündel H, Ziegenhain U, Buchheim A. Reactivity of the Oxytocinergic and Neuroendocrine System Following the Adult Attachment Projective Picture System in Men of Recent Fatherhood: Results from an Exploratory Pilot Study with a Cross-Sectional Design. *Brain Sci*. 2022 Sep 28;12(10):1314. doi: 10.3390/brainsci12101314.

Kuehl LK, **De Punder K**, Deuter CE, Martens DS, Heim C, Otte C, Wingenfeld K, Entringer S. Telomere length in individuals with and without major depression and adverse childhood experiences. *Psychoneuroendocrinology*. 2022 105762. doi:10.1016/j.psyneuen.2022.105762.

Kleih, TS, Entringer S, Scholaske L, Kathmann N, **de Punder K**, Heim CM, Wadhwa PD, Buss C. Exposure to childhood maltreatment and systemic inflammation across pregnancy: The moderating role of depressive symptomatology. *Brain Behav Immun*. 2022; Mar;101:397-409. doi: 10.1016/j.bbi.2022.02.004.

Dammering F, Martins J, Dittrich K, Czamara D, Rex-Haffner M, Overfeld J, **de Punder K**, Buss C, Entringer S, Winter SM, Binder EB, Heim C. The pediatric buccal epigenetic clock identifies significant ageing acceleration in children with internalizing disorder and maltreatment exposure. *Neurobiol Stress*. 2021 Sep 11;15:100394. doi: 10.1016/j.ynstr.2021.100394.

Demeulemeester F, **de Punder K**, van Heijningen M, van Doesburg F. Obesity as a Risk Factor for Severe COVID-19 and Complications: A Review. *Cells*. 2021 Apr 17;10(4):933. doi: 10.3390/cells10040933.

Martins J, Czamara D, Sauer S, Rex-Haffner M, Dittrich K, Dörr P, **de Punder K**, Overfeld J, Knop A, Dammering F, Entringer S, Winter SM, Buss C, Heim C, Binder EB. Childhood adversity correlates with stable changes in DNA methylation trajectories in children and converges with epigenetic signatures of prenatal stress. *Neurobiol Stress*. 2021;15:100336. doi: 10.1016/j.ynstr.2021.100336.

Entringer S*, **de Punder K***, Overfeld J, Karaboycheva G, Dittrich K, Buss C, Winter SM, Binder EB, Heim C. Immediate and longitudinal effects of maltreatment on systemic inflammation in young children. *Dev Psychopathol*. 2020 Dec;32(5):1725-1731. doi: 10.1017/S0954579420001686.

de Punder K, Heim C, Entringer S. Association between chronotype and body mass index: The role of C-reactive protein and the cortisol response to stress. *Psychoneuroendocrinology*. 2019 Nov;109:104388. doi: 10.1016/j.psyneuen.2019.104388.

de Punder K, Heim C, Wadhwa PD, Entringer S. Stress and immunosenescence: The role of telomerase. *Psychoneuroendocrinology*. 2019 Mar;101:87-100. doi: 10.1016/j.psyneuen.2018.10.019.

de Punder K, Entringer S, Heim C, Deuter CE, Otte C, Wingenfeld K, Kuehl LK. Inflammatory Measures in Depressed Patients With and Without a History of Adverse Childhood Experiences. *Front Psychiatry*. 2018;9:610. doi: 10.3389/fpsy.2018.00610.

Entringer S, **de Punder K**, Buss C, Wadhwa PD. The fetal programming of telomere biology hypothesis: an update. *Philos Trans R Soc Lond B Biol Sci*. 2018 Mar 5;373(1741). doi: 10.1098/rstb.2017.0151.

de Punder K, Heim C, Przesdzing I, Wadhwa PD, Entringer S. Characterization in humans of in vitro leucocyte maximal telomerase activity capacity and association with stress. *Philos Trans R Soc Lond B Biol Sci*. 2018 Mar 5;373(1741). doi: 10.1098/rstb.2016.0441.

Farin HF, Jordens I, Mosa MH, Basak O, Korving J, Tauriello DV, **de Punder K**, Angers S, Peters PJ, Maurice MM, Clevers H. Visualization of a short-range Wnt gradient in the intestinal stem-cell niche. *Nature*. 2016 Feb 18;530(7590):340-3. doi: 10.1038/nature16937.

de Punder K, Pruimboom L. Stress induces endotoxemia and low-grade inflammation by increasing barrier permeability. *Front Immunol*. 2015;6:223. doi: 10.3389/fimmu.2015.00223.

Book Chapters

de Punder K, Karabatsiakos A. Aging of the immune system. Aging: How aging works, how we can reverse aging, and prospects for curing aging diseases, ahead of publishing, *Elsevier*.

Entringer S, **de Punder K**, Verner G, Wadhwa PD. Fetal programming of telomere biology: Role of maternal nutrition, obstetric risk factors and suboptimal birth outcomes in diet, nutrition, and fetal programming. *Nutrition and Health*, pp.569-593. 2017, *Springer International Publishing AG*.

Conference Oral Presentations

Stress über die lebensspanne und Telomerbiologie. 1. Kongress kPNI Swiss, Zürich, Swiss, November 2023

Maternal Mediterranean diet adherence during pregnancy and newborn telomere length. Annual Conference International Society of Psychoneuroendocrinology (ISPNE), London, UK, September 2023

Intergenerational transmission of maternal childhood maltreatment: DNA methylation pattern of the dopamine receptor D2 gene in mother-child dyads and associations with child developmental outcomes. World Association for Infant Mental Health (WAIMH), Dublin, Ireland, July 2023

Stress exposure and telomere biology over the life span. European Psychoneuroimmunology Network (EPN) lunch seminar, Virtual, June 2023

The steroid hormone dehydroepiandrosterone (DHEA) counteracts the consequences of psychological trauma on immunocellular aging. Kongress der Deutsche Gesellschaft für Psychiatrie und Psychotherapie, Psychosomatik und Nervenheilkunde (DGPPN), Berlin, Germany, November 2022.

The steroid hormone dehydroepiandrosterone (DHEA) counteracts the consequences of psychological trauma on immunocellular ageing and mitochondrial bioenergetics. German Endocrine Brain Immune Network (GEBIN) Meeting, Virtual, March 2022

Stress and immunosenescence: the role of telomerase. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Milan, Italy, September 2019.

Stress and cellular aging-related processes. Jahrestagung Psychologie und Gehirn (PuG), Dresden, Germany, June 2019.

C-reactive protein levels in children aged 3-5 years with verified exposure to maltreatment: Sex differences and association with depression. German Endocrine Brain Immune Network (GEBIN) Meeting/Annual Conference of the Psychoneuroimmunology Research Society (PNIRS), Berlin, Germany, June 2019.

Maximal telomerase activity capacity (mTAC) mediates the effect of the cortisol stress response on leukocyte telomere length. German Endocrine Brain Immune Network (GEBIN) Meeting/Annual Conference of the Psychoneuroimmunology Research Society (PNIRS), Berlin, Germany, June 2019.

Erhöhte C-reactive Protein Spiegel in 3-5 jährigen Kindern mit frühkindlicher Misshandlung: Geschlechterunterschiede und Zusammenhang mit depressiven Symptomen. Kongress der Deutsche Gesellschaft für Psychiatrie und Psychotherapie, Psychosomatik und Nervenheilkunde (DGPPN), Berlin, Germany, November 2018.

Characterization of *in vitro* leukocyte maximal telomerase activity capacity (mTAC) as a stress-related measure for human studies. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Zurich, Switzerland, September 2017.

Frühkindliche Misshandlung ist assoziiert mit erhöhten Konzentrationen an Cortisol und C-reaktivem Protein im Alter von 3-5 Jahren. Kongress der Deutschen Gesellschaft für Kinder- und Jugendpsychiatrie, Psychosomatik und Psychotherapie (DGKJP), Ulm, Germany, March 2017.

In vitro stimulated leukocyte telomerase activity is associated with chronic stress exposure. Jahrestagung der Deutschen Gesellschaft für Medizinische Soziologie (DGMS) und der Deutschen Gesellschaft für Medizinische Psychologie (DGMP), Berlin, Germany, September 2016.

Conference Poster Presentations

de Punder K, Laurin Mauracher, Eberhard A. Deisenhammer, Alexander Karabatsiakis. Longitudinal investigation of the effects of electroconvulsive therapy on mitochondrial bioenergetics in immune cells from treatment resistant patients with major depressive disorder. 23rd WPA World Congress of Psychiatry, Vienna, Austria, September 2023 (DOI: 10.13140/RG.2.2.21255.37281)

de Punder K, Heim C, Entringer S. Association between chronotype and body mass index: The role of C-reactive protein and the cortisol response to stress. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Irvine, California, USA, September 2018.

de Punder K, Overfeld J, Karaboycheva G, Winter SM, Buss C, Binder EB, Heim C. Elevated C-reactive protein levels in children aged 3-5 years with verified exposure to maltreatment: Sex differences and association with depressive symptoms. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Irvine, California, USA, September 2018.

de Punder K, Overfeld J, Karaboycheva G, Winter SM, Buss C, Binder EB, Heim C (2018). Elevated C-reactive protein Levels in children aged 3-5 years with verified exposure to maltreatment: Association with depressive symptoms. Annual Meeting of the Society of Biological Psychiatry (SOBP), New York, USA, May 2018.

de Punder K, Entringer S, Heim C, Otte C, Wingenfeld K, Kuehl LK. Increased interleukin-6 levels in patients with major depression exposed to childhood adversity. Annual Meeting of the Society of Biological Psychiatry (SOBP), New York, USA, May 2018.

de Punder K, Overfeld J, Dörr P, Dittrich K, Winter SM, Kubiak N, Karaboycheva G, Heim C. Maltreatment is associated with elevated cortisol and C-reactive protein concentrations in 3 to 5 year-old children. World Congress of Psychiatry, Berlin, Germany, October 2017.

de Punder K, Overfeld J, Dörr P, Dittrich K, Winter SM, Kubiak N, Karaboycheva G, Heim C. Maltreatment is associated with elevated C-reactive protein levels in 3 to 5 year-old children. Annual Conference of the Psychoneuroimmunology Research Society (PNIRS), Galveston, Texas, USA, June 2017.

de Punder K, Heim C, Wadhwa PD, Entringer S. Characterization of *in vitro* leukocyte maximal telomerase activity capacity (mTAC) in humans: Association with chronic stress exposure and stress-reactivity. Annual conference of the Psychoneuroimmunology Research Society (PNIRS), Galveston, Texas, USA, June 2017.

de Punder K, Overfeld J, Dörr P, Dittrich K, Winter SM, Kubiak N, Karaboycheva G, Heim C. Exposure to child maltreatment is associated with elevated stress and immune mediators in children aged 3–5 years. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Miami, Florida, USA, September 2016,

de Punder K, Heim C, Wadhwa PD, Entringer S. *In vitro* stimulated leukocyte telomerase activity is associated with chronic stress exposure. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Miami, Florida, USA, September 2016.

de Punder K, Heim C, Entringer S. Plasma levels of lipopolysaccharide-binding protein in response to psychosocial stress induction: Association with sympathetic nervous system response. Annual Conference of the Psychoneuroimmunology Research Society (PNIRS), Brighton, UK, June 2016.

de Punder K, Heim C, Entringer S. Validation of a measure of in-vitro stimulated telomerase expression as a stress-related biomarker for human studies. Annual Conference of the International Society of Psychoneuroendocrinology (ISPNE), Edinburgh, Scotland, September 2015.

Manuscript Reviews

- *Psychoneuroendocrinology*
- *Psychosomatic Medicine*
- *Journal of the Royal Society Interface*
- *Restorative Neurology and Neuroscience*
- *PLOS ONE*
- *Stress*
- *Journal of Neural Transmission*
- *Neurobiology of Stress*
- *Behavioural Brain Research*
- *Stress and Health*

Ongoing and completed master theses

Beckerle, Nina: Interaction effect of maternal depressive symptoms and child oxytocin receptor rs53576 genotype on child psychological symptom development (2023 ongoing).

Mott, Simon: Stress und Resilienz bei Bewohnern eines Slums in der kenianischen Hauptstadt Nairobi (completed 2023).

Anna-Verena Löffler: Leukocyte telomere length in women with and without a comorbid diagnosis of attention-deficit/ hyperactivity disorder and borderline personality disorder (completed 2023).

Tobias Höllbacher: Does psychotherapy influence gene regulation? Relationship between treatment response to cathartic imaginative psychotherapy and changes in DNA methylation of stress-related genes (2023, ongoing)

Viola Just: Testing the association of serum lipid profiles and telomere length in peripheral blood mononuclear cells in women with and without depression (2023, ongoing).

Amelie Katinka Hildenbrand: Testing the association between blood serum metabolites and telomere length in peripheral blood mononuclear cells and T cell subsets in women with and without a major depression disorder (2023, ongoing)

Leonard Martin Schneeberger: Sport climbing as a stress reduction measure: a study to investigate the relationship between subjective stress perception and cortisol in non-invasively collected hair samples (2023, ongoing).

Till Herzog: Associations of maternal childhood maltreatment with epigenetic regulation of the neuropeptide Y gene in immune cells: an intergenerational approach (2022, ongoing).

Curriculum Vitae – Karin de Punder

Denise Kager: Associations of maternal childhood abuse experiences with DNA methylation of the corticotropin-releasing hormone receptor 2 gene in mother-child dyads (2022, ongoing).

Katharina Thaler: Intergenerational associations of maternal childhood maltreatment with DNA methylation of the dopamine receptor 2 gene in immune cells (completed 2023).

Franziska Gugger: Ketamine-assisted Hypnotherapy: A review on the current status of clinical ketamine & hypnotherapy research (completed, 2023).

Cosima Franziska Marterer: The influence of childhood maltreatment and the need to seek medical care to become pregnant: the role of attachment style and steroid hormones (completed, 2023).
